Public Comment No. 1647-NFPA 70-2024 [Global Input]

This Global Public Comment is for CMP-7 to review the use of the terms "overcurrent", "overcurrent protective devices" and "overcurrent protection".

Additional Proposed Changes

File Name	Description	Approved
CMP-7_OCPD_TG-4_CMP-10.pdf	CMP-7_OCPD_TG-4 CMP-10	
All_CMP_Comments_Files_from_CMP-10_TG-4.pdf	All CMP Comments Files from CMP-10 TG-4	

Statement of Problem and Substantiation for Public Comment

This Public Comment is submitted on behalf of a Task Group formed under the purview of Code Making Panel 10 consisting of Randy Dollar, Thomas Domitrovich, Jason Doty, Diane Lynch, Alan Manche, Nathan Philips, David Williams, and Danish Zia. This Public Comment, along with other Public Comments, was developed with the goal of improving usability and accuracy on requirements associated with overcurrent protective devices.

The Task Group reviewed all instances of the term "overcurrent", "overcurrent protective devices" and "overcurrent protection" and provided recommended changes to align proposed and current defined terms.

For consistency, the task group chose to use the full defined term "overcurrent protective device" in the title of all sections or subdivisions and the acronym "OCPD" or "OCPDs" when used in the body of each code section.

The term overcurrent protection applies to the application of an overcurrent protective device OCPD, to protect conductors and equipment.

Two documents are attached: One for your specific code panel and the other is a comprehensive document illustrating all of the code-wide comments made by this task group.

The current term "Overcurrent Protective Device, Branch-Circuit" is being deleted and the new defined term "Overcurrent Protective Device (OCPD)" will be used instead.

The following are the proposed terms being submitted to CMP-10.

PC 1639 Overcurrent Protection.
Automatic interruption of an overcurrent

PC 1636 Overcurrent Protective Device (OCPD).
A device capable of providing protection over the full range of overcurrent between its rated current and its interrupting rating. (CMP-10)

Informational Note 1: Prior editions of NFPA 70 included the defined term "branch circuit overcurrent protective device" for overcurrent protective devices suitable for providing protection for service, feeder and branch circuits. This term has been revised to a generalized term of "overcurrent protective device" (OCPD). The specific requirements using this term may include modifiers (such as branch OCPD, feeder OCPD, service OCPD) to specify location or application of the OCPD, or to specify variations (such as supplementary OCPD).

Informational Note 2: See 240.7 for a list of overcurrent protective devices suitable for providing protection for service, feeder, branch circuits and equipment.

Related Item

• Global PI 4050 • PC 1636 • PC 1639

Submitter Information Verification

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Submittal Date: Sun Aug 25 21:44:26 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8296-NFPA 70-2024
Statement: The acronym OCPD was added and the term “overcurrent protective devices” was deleted in sections for consistency.

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-7			
CMP	NEC Section (using First Draft of 2026 NEC)	Current Language	"New" Language
7	**Article 100**		
	Service Equipment, Mobile Home	overcurrent protective devices	overcurrent protective devices (OCPDs)
7	**Article 545**		
	545.24	Branch-circuit overcurrent protective device	Branch-circuit OCPD
	545.24(B) Title	Branch Circuit Overcurrent Protection Device	Overcurrent protective devices
	545.24(B)	a Branch Circuit Overcurrent Protective Device	an OCPD
7	**Article 547**		
	547.41(A)(6). (X2)	Overcurrent Protection	Fine as is
	547.41(B)	Overcurrent Protection	Fine as is
	547.42	Overcurrent Protection	Fine as is
7	**Article 550**		
	550.11(B). Title	Branch-Circuit protective equipment	Branch-Circuit Overcurrent Protection
	550.11(B)	Overcurrent Protection	Fine as is
	550.11(B)	Branch-Circuit Overcurrent Devices	OCPDs
	550.11(B)	Overcurrent protection size	OCPD rating
	550.15(E)	Branch-circuit overcurrent protective device	OCPD
	550.32	Overcurrent Protection	Fine as is
7	**Article 551**		
	551.31(A)	Overcurrent protective device	OCPD
	551.31(C)	Overcurrent protective device	OCPD
	551.31(D)	Overcurrent Protection	Fine as is
	551.42	Overcurrent Protection	Fine as is
	551.43. Title	Branch-Circuit protection	Branch-Circuit Overcurrent Protection
	551.43(A)	Branch Circuit Overcurrent Devices	Branch-Circuit OCPDs
	551.43(A)(3)	Overcurrent Protection	Fine as is
	551.45(C)	Overcurrent protective device	OCPD
	551.47(Q)	Overcurrent protective device	OCPD
	551.47(R)	Overcurrent Protection	Fine as is
	551.47(S)	Overcurrent Protection	Fine as is
	551.74	Overcurrent Protection	Fine as is
7	**Article 552**		
	552.10.(E) Title	Overcurrent Protection	Fine as is
	552.10(E)(1)	Overcurrent protective devices	OCPDs

	T-552.10(E)(1)	Overcurrent Protection	Fine as is
	552.10(E)(4). (X2)	Overcurrent protective device	OCPD
	552.42(A)	Branch Circuit Overcurrent Devices	OCPDs
	552.42(A)	Overcurrent Protection	Fine as is
	552.45(C)	Overcurrent protective device	OCPD
	552.46(A) IN	Overcurrent Protection	Fine as is
	552.47(P)	Overcurrent protective device	OCPD
	552.47(Q)	Overcurrent Protection	Fine as is
7	**Article 555**		
	555.53	Overcurrent protective device	OCPD
7	**Article 675**		
	675.6	Branch Circuit Overcurrent Protective Device	OCPD
	675.7	Branch Circuit Overcurrent Protective Devices	OCPDs
	675.8	Overcurrent Protection	Fine as is
7	**Article 682**		
	682.15(B)	Feeder Overcurrent protective device	Feeder OCPD

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-1			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
1	**Article 110**		
	110.10.	overcurrent protective devices	OCPDs
	110.10.	circuit protective devices	Fine as is
	110.26(C)(2)	overcurrent devices	OCPD
	110.26(C)(3)	overcurrent devices	OCPD
	110.52	Overcurrent protection	Fine as is
	110.52	Overcurrent	Motor-operated Equipment shall be provided with overcurrent protection
	110.52	Overcurrent	Transformers shall be provided with overcurrent protection

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-2			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
2	**Article 100**		
	Branch Circuit (Branch-Circuit)	overcurrent device	overcurrent protective device (OCPD)
2	**Article 120**		
	120.5(E)	overcurrent device	OCPD
	120.7(B)	overcurrent protective device	OCPD
	120.87(3)	Overcurrent protection	Fine as is
2	**Article 210**		
	210.4(A)	branch-circuit overcurrent protective device, OCPD	Fine as is
	210.4(C)	branch-circuit OCPD	Fine as is
	210.11(B)	branch-circuit OCPD	Fine as is
	210.12(A)	branch-circuit OCPD (X-8)	Fine as is
	210.18	~~overcurrent device~~ OCPD (X-2)	Fine as is
	210.19(A)(1)EX	branch-circuit OCPD	Fine as is
	210.20.	Overcurrent protection	Fine as is
	210.20.	branch-circuit OCPD	Fine as is
	210.20(A)	branch-circuit OCPD	Fine as is
	210.20(C)	branch-circuit OCPD	Fine as is
	T-210.24	Overcurrent protection	Fine as is
2	**Annex D**		
	D3. (X2)	Overcurrent Protection	CMP-2 To review references to OCPD and the revised terms.
	D3a. (X8)	Branch-Circuit OCPD	CMP-2 to Review
	D3a.	Overcurrent Protection	CMP-2 to Review
	D3a. (X2)	Branch-Circuit OCPD	CMP-2 to Review

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-3			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
3	**Article 100**		
	Fault Managed Power.	Overcurrent protection	Fine as is
	Fire Alarm Circuit	Overcurrent device	overcurrent protective device (OCPD)
3	**Article 300**		
	300.5-T	Overcurrent Protection	Fine as is
	300.17(I)	Overcurrent Device	OCPD
	300.28(C)(3). (X5)	Overcurrent Protection	Fine as is
3	**Article 590**		
	590.6(A)	Overcurrent Protection	Fine as is
	590.6(B)	be protected from Overcurrent	shall be provided with overcurrent protection
	590.9. Title	Overcurrent protective device	Fine as is
	590.9(A)	Overcurrent protective devices	OCPDs
	590.9(B) Title	Service Overcurrent protective devices	Fine as is
	590.9(B)	Overcurrent protective devices	OCPDs
3	**Article 721**		
	721.50(A)	Overcurrent	Fine as is
3	**Article 722**		
	722.1	Overcurrent Protection	Fine as is
3	**Article 724**	Class 1	
	724.40(B). (X3)	Overcurrent Devices	OCPDs
	724.40(B). (X2)	Overcurrent Device	OCPD
	724.40(B). (X2)	Overcurrent Protection	Fine as is
	724.43. (X4)	Overcurrent Protection	Fine as is
	724.45	Overcurrent Device	OCPD
	724.45. (X3)	Overcurrent Devices	OCPDs
	724.45(A)	Overcurrent Devices	OCPDs
	724.45(B)	Overcurrent Protection	Fine as is
	724.45(B)	Overcurrent Device	OCPD
	724.45(C). (X2)	Overcurrent protective devices	OCPDs
	724.45(D)	Overcurrent Protection	Fine as is
	724.45(E)	Overcurrent Protection	Fine as is
3	**Article 725**		
	725.1 In	Overcurrent Protection	Fine as is

	725.127	Overcurrent Device	OCPD
3	**Article 760**		
	760.41(B)	Overcurrent protective device	OCPD
	760.41(B)	Overcurrent protection devices	OCPDs
	760.43. (X3)	Overcurrent Protection	Fine as is
	760.45. Title	Overcurrent device	Overcurrent protective device
	760.45	Overcurrent protection devices	OCPDs
	760.45 Ex 1 & 2	Overcurrent Protection	Fine as is
	760.121(B)	Branch-Circuit Overcurrent protective device	OCPD
	760.121(B)	Overcurrent protection devices	OCPDs
	760.127	Overcurrent Protection	Fine as is
	760.127	Overcurrent Device	OCPD
3	**Article 794**		
	794.1	Overcurrent Protection	Fine as is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-4			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
4	**Article 690**		
	690.2	PV dc Overcurrent protective devices	PV dc OCPDs
	690.8	Overcurrent Device	OCPD and OCPDs
	690.9. Title	Overcurrent Protection	Fine as is
	690.9(A). (X2)	be protected from Overcurrent	shall be provided with overcurrent protection
	690.9(A)(1). Title	Overcurrent Protection	Fine as is
	690.9(A)(1).	Overcurrent protective devices	OCPDs
	690.9(A)(2). Title	Overcurrent Protection	Fine as is
	690.9(A) (2)	be protected from Overcurrent	shall be provided with overcurrent protection
	690.9(A) (2) In	Overcurrent protection	Fine as is
	690.9(A) (2) In	Overcurrent device	OCPD
	690.9(A)(3)	Overcurrent	Fine as is
	690.9(B)	shall be permitted to prevent overcurrent of conductors	Fine as is
	690.9(B)	Overcurrent device	OCPD and OCPDs
	690.9(C)	Overcurrent protective device and Devices	OCPD and OCPDs
	690.31(E)	Overcurrent protective devices	OCPDs
	690.45	Overcurrent protective device	OCPD
	690.45	Overcurrent Device	OCPD
4	**Article 692**		
	692.8. Title	Overcurrent Device	Overcurrent Protective Devices
	692.8	Overcurrent protective device	OCPDs
	692.9	Overcurrent Protection	Fine as is
	692.9	Overcurrent Devices	OCPDs
4	**Article 694**		
	694.7(D)	Overcurrent Device	OCPD
	694.12(B). Title	Overcurrent Device	Overcurrent Protective Device
	694.12(B)(2). Title	Overcurrent Devices	Overcurrent Protective Devices
	694.12(B)(2)	Overcurrent Devices	OCPDs
	694.15	Overcurrent Protection	Fine as is
	694.15	Overcurrent Devices	OCPDs
	694.15 In	Overcurrent Protection	Fine as is
	694.15(B)(1)	Overcurrent Protection	Fine as is
	694.15(C)	Overcurrent Devices	OCPDs

4	Article 705		
	705.11(C). Title	Overcurrent Protection	Fine as is
	705.11(C)	be protected from overcurrent	have overcurrent protection
	705.11(C)(1). (1) (2) (3)	Overcurrent protective device	OCPD
	705.11(C)(2)	Overcurrent protection devices	OCPDs
	705.12(A)(2). (X4)	Overcurrent Device	OCPD
	705.12(A)(3)	Overcurrent Devices	OCPDs
	705.12(B)	(Multiple) Overcurrent Device and (s)	OCPD. And OCPDs
	705.12(B)	(Warning labels) Overcurrent Device and (s)	Overcurrent Protective Device and Devices
	705.28(B)Ex.1	Overcurrent Devices	OCPDs
	705.28(B)Ex.3	Overcurrent Device	OCPD
	705.30. Title	Overcurrent Protection	Fine as is
	705.30(A). (X2)	Overcurrent Protection	Fine as is
	705.30(A)	Overcurrent Devices	OCPDs
	705.30.(C)	Overcurrent Devices	OCPDs
	705.30.(F)	Overcurrent Protection	Fine as is
	705.70.	Overcurrent Devices	OCPDs
	705.70.	Overcurrent Protection	Fine as is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-5			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
5	**Article 100**		
	Ground-Fault Current Path, Effective	overcurrent protective device	overcurrent protective device (OCPD)
	Ground-Fault Protection of Equipment	overcurrent device	overcurrent protective device (OCPD)
5	**Article 200**		
	200.10(E)	overcurrent device	OCPD
5	**Article 250**		
	250.4(A)(5). Title	Overcurrent protective Device	Fine as is
	250.4(A)(5)	Overcurrent Device	OCPD
	250.4(B)(4)	Overcurrent Devices	OCPDs
	250.30(A)(1)	Overcurrent Device	OCPD
	250.30(A)(1)	Overcurrent Devices	OCPDs
	250.32(B)(2). (X4)	Overcurrent Protection	Fine as is
	250.32(C)(2). (X4)	Overcurrent Protection	Fine as is
	250.35(B)	Overcurrent Protection	Fine as is
	250.36(D)	Overcurrent Device	Fine as is
	250.36(E)(1)	Overcurrent Device	OCPD
	250.102(B)(2)	Overcurrent Protection	Fine as is
	250.102(D). (X3)	Overcurrent Devices	OCPDs
	250.118(A)(5)	Overcurrent Devices	OCPDs
	250.118(A)(6)	Overcurrent Devices	OCPDs
	250.118(A)(7)	Overcurrent Devices	OCPDs
	250.122(C)	Overcurrent Device	OCPD
	250.122(F)(1). (X3)	Overcurrent protective device	OCPD
	250.122(G)	Overcurrent Device	OCPD
	250.142. (X2)	Overcurrent Device	OCPD
	250.148	Overcurrent Device	OCPD
	250.164	Overcurrent Device	OCPD
	250.166	Overcurrent Protection	Fine as is
	250.169	Overcurrent Devices	OCPD
5	**Article 270**		
	270.4(A)(5)	Overcurrent Device	OCPD
	270.4(B)(4)	Overcurrent Devices	OCPDs
	270.30(A)(1)	Overcurrent Devices	OCPDs

	270.32(B)(2). (X4)	Overcurrent Protection	Fine as is
	270.32(C)(2). (X4)	Overcurrent Protection	Fine as is
	270.35(B)	Overcurrent Protection	Fine as is
	270.35(B)	Overcurrent protective device	OCPD
	270.36(D)	Overcurrent Device	OCPD
	270.36(E)	Overcurrent Devices	OCPDs
	270.102(C)(2)	Overcurrent Protection	Fine as is
	270.102(D)	Overcurrent Device	OCPDs
	270.114(C)(3)	Overcurrent setting	CMP to review Language based on new terms
	270.118	Overcurrent Devices	OCPDs
	270.142	Overcurrent Devices	OCPDs
	270.148(B)	Overcurrent Device	OCPD
	270.164(B)	Overcurrent Device	OCPD
	270.166(A)	Overcurrent Protection	Fine as is
	270.169	Overcurrent Devices	OCPDs

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-6			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
6	**Article 310**		
	310.10(G).	Overcurrent Protection	Fine as is
	310.15(A)	Overcurrent Protection	Fine as is
	310.16-T	Overcurrent Protection	Fine as is
	310.17-T	Overcurrent Protection	Fine as is
6	**Article 335**		
	335.90.	Overcurrent Protection	Fine as is
6	**Article 382**		
	382.4	Supplementary Overcurrent Protection	Supplementary Overcurrent Protective Device
6	**Article 400**		
	400.16	Overcurrent Protection	Fine as is
	400.16	protected against Overcurrent	shall be provided with overcurrent protection
6	**Article 402**		
	402.14 (X2)	Overcurrent Protection	Fine as is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-7			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
7	**Article 100**		
	Service Equipment, Mobile Home	overcurrent protective devices	overcurrent protective devices (OCPDs)
7	**Article 545**		
	545.24	Branch-circuit overcurrent protective device	Branch-circuit OCPD
	545.24(B) Title	Branch Circuit Overcurrent Protection Device	Overcurrent protective devices
	545.24(B)	a Branch Circuit Overcurrent Protective Device	an OCPD
7	**Article 547**		
	547.41(A)(6). (X2)	Overcurrent Protection	Fine as is
	547.41(B)	Overcurrent Protection	Fine as is
	547.42	Overcurrent Protection	Fine as is
7	**Article 550**		
	550.11(B). Title	Branch-Circuit protective equipment	Branch-Circuit Overcurrent Protection
	550.11(B)	Overcurrent Protection	Fine as is
	550.11(B)	Branch-Circuit Overcurrent Devices	OCPDs
	550.11(B)	Overcurrent protection size	OCPD rating
	550.15(E)	Branch-circuit overcurrent protective device	OCPD
	550.32	Overcurrent Protection	Fine as is
7	**Article 551**		
	551.31(A)	Overcurrent protective device	OCPD
	551.31(C)	Overcurrent protective device	OCPD
	551.31(D)	Overcurrent Protection	Fine as is
	551.42	Overcurrent Protection	Fine as is
	551.43. Title	Branch-Circuit protection	Branch-Circuit Overcurrent Protection
	551.43(A)	Branch Circuit Overcurrent Devices	Branch-Circuit OCPDs
	551.43(A)(3)	Overcurrent Protection	Fine as is
	551.45(C)	Overcurrent protective device	OCPD
	551.47(Q)	Overcurrent protective device	OCPD
	551.47(R)	Overcurrent Protection	Fine as is
	551.47(S)	Overcurrent Protection	Fine as is
	551.74	Overcurrent Protection	Fine as is
7	**Article 552**		
	552.10.(E) Title	Overcurrent Protection	Fine as is
	552.10(E)(1)	Overcurrent protective devices	OCPDs

	T-552.10(E)(1)	Overcurrent Protection	Fine as is
	552.10(E)(4). (X2)	Overcurrent protective device	OCPD
	552.42(A)	Branch Circuit Overcurrent Devices	OCPDs
	552.42(A)	Overcurrent Protection	Fine as is
	552.45(C)	Overcurrent protective device	OCPD
	552.46(A) IN	Overcurrent Protection	Fine as is
	552.47(P)	Overcurrent protective device	OCPD
	552.47(Q)	Overcurrent Protection	Fine as is
7	**Article 555**		
	555.53	Overcurrent protective device	OCPD
7	**Article 675**		
	675.6	Branch Circuit Overcurrent Protective Device	OCPD
	675.7	Branch Circuit Overcurrent Protective Devices	OCPDs
	675.8	Overcurrent Protection	Fine as is
7	**Article 682**		
	682.15(B)	Feeder Overcurrent protective device	Feeder OCPD

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-8			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
8	**Article 312**		
	312.11. Title	Overcurrent Devices	Overcurrent Protective Device
	312.11	Overcurrent Devices	OCPDs
	312.11(A). (X3)	Overcurrent Device	OCPDs
	312.11(B)	Overcurrent Devices	OCPDs
	312.11(B)(1)	Overcurrent Device	OCPD
8	**Article 366**		
	366.12	Overcurrent Devices	OCPDs
	366.56(D)	Overcurrent Protection	Fine as is
8	**Article 368**		
	368.17(A). Title	Overcurrent Protection	Fine as is
	368.17	Overcurrent Protection	Fine as is
	368.17(A)	Protected against Overcurrent	shall be provided with overcurrent protection
	368.17(B). (X2)	Overcurrent Protection	Fine as is
	368.17(B)	Overcurrent Device	OCPD
	368.17(C)	Overcurrent Devices	OCPDs
	368.17(C)Ex.2	Branch-Circuit Overcurrent Device	Branch-Circuit OCPD
	368.17(C)Ex.3	Overcurrent Device	OCPD
	368.17(C)Ex.4	Branch-Circuit overcurrent plug-in device	CMP to review Language based on new terms
	368.17(D). Title	Overcurrent Protection	Fine as is
	368.17(D)	Protected against Overcurrent	shall be provided with overcurrent protection
8	**Article 370**		
	370.23. Title	Overcurrent Protection	Fine as is
	370.23	Protected against Overcurrent	shall be provided with overcurrent protection
8	**Article 371**		
	371.17. Title	Overcurrent Protection	Fine as is
	371.17	Overcurrent Protection	Fine as is
	371.17 (A)-(C). Titles	Overcurrent Protection	Fine as is
	371.17(A)-(C)	Protected against Overcurrent	shall be provided with overcurrent protection
	371.17(D)	Protected against Overcurrent	shall be provided with overcurrent protection
	371.17(F)	Overcurrent	shall be provided with overcurrent protection
	371.17(G)	Overcurrent Protection	
	371.17(G)Ex	Overcurrent Protection	Fine as is
	371.17(G)Ex	Overcurrent Device	OCPD

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-9			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
9	**Article 265**		
	265.18	Overcurrent Device	OCPD
	265.20.	Overcurrent Protection	Fine as is
	265.20.	Overcurrent protective devices	OCPDs
	265.20.	Overcurrent Devices	OCPDs
9	**Article 266**		
	266.1	Overcurrent Protection	Fine as is
	266.5	Overcurrent Protection	Fine as is
	266.5	Protected against overcurrent	shall be provided with overcurrent protection
	266.5	Overcurrent Device	OCPD
9	**Article 268**		
	268.2. (X2)	Overcurrent Protection	Fine as is
	268.70(F)	Overcurrent Devices	OCPDs
	268.82. (X4)	Overcurrent Protection	Fine as is
	Art. 268 Part VII	Overcurrent Protection	Fine as is
	268.90.	Overcurrent Device	OCPD
	268.90.	Overcurrent Devices	OCPDs
	268.91	Overcurrent Device	OCPD
	268.92	Overcurrent Devices	OCPDs
	268.93	Overcurrent Device	OCPD
9	**Article 450**		
	450.5 (previously 450.3). (X3)	overcurrent protection	Fine As Is
	450.5(A) and Table. (X3)	overcurrent protection	Fine As Is
	Table 450.5(A) Footnote 2. (X4)	overcurrent device	OCPD
	450.5(B)	overcurrent protection	Fine As Is
	Table 450.5(B) and Table (X2)	overcurrent protection	OCPD
	Table 450.5(B) Footnote 2. (X3)	overcurrent device	OCPD
	Table 450.5(B) Footnote 3	overcurrent protection	OCPD
	450.6(A) Title	overcurrent protection	Fine As Is
	450.6(A) (X3)	overcurrent device	OCPD
	450.6(A) Exception	overcurrent device	OCPD
	450.7(A)(1). (X2)	overcurrent protection	OCPD
	450.7(A)(2). Title	overcurrent protection	Fine As Is

	450.7(A)(2)	overcurrent sensing device	Fine As Is
		overcurrent protection	OCPD
		overcurrent device	OCPD
		branch or feeder protective devices	branch or feeder OCPDs
	450.7(A)(3)	overcurrent device	OCPD
	450.7(B)(2)	overcurrent protection	Fine As Is
	450.7(B)(2)(a)	overcurrent protective device	OCPD
	450.7(B)(2)(b)	overcurrent protection	OCPD
	450.7(B)(2)(b)	overcurrents	Fine As Is
	450.7(B)(2)(b) Exception	overcurrent device	OCPD
	450.8(A). (X2)	overcurrent protection	Fine As Is
	450.8(A)(1)	overcurrent protection	Fine As Is
	450.8(A)(2)	overcurrent protection	Fine As Is
	450.8(A)(3)	protective device	OCPD
	450.8(A)(4)(a)	protective device	OCPD
	450.8(B). Title	Overcurrent Protection	Fine As Is
	450.8(B)	overcurrent device	OCPD
	450.9	overcurrent protection	Fine As Is
	450.9	protective devices (2x)	OCPDs
	450.23(A)(1)(d) Informational Note	overcurrent protection	OCPD
	450.23(B)(1) Informational Note 2	overcurrent protection	OCPD
9	**Article 495**		
	495.62. Title	Overcurrent Protection	Fine As Is
	495.72	Overcurrent Relay	Fine As Is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-10			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
10	**Article 100**		
	Circuit Breaker	Overcurrent	Fine as is
	Coordination, Selective. (Selective Coordination)	Overcurrent condition	Fine as is
	Coordination, Selective. (Selective Coordination)	overcurrent protective devices	overcurrent protective devices (OCPDs)
	Coordination, Selective. (Selective Coordination)	overcurrents	Fine as is
	Coordination, Selective. (Selective Coordination)	overcurrent protective device	overcurrent protective device (OCPD)
	Current Limiting (as applied to overcurrent protection devices)	overcurrent protection devices	overcurrent protective devices (OCPDs)
	Feeder	final branch-circuit overcurrent protective device	overcurrent protective device (OCPD)
	Fuse	overcurrent protective device	overcurrent protective device (OCPD)
	Fuse	overcurrent	Fine as is
	Fuse, Electronically Actuated	overcurrent protective device	overcurrent protective device (OCPD)
	Fuse, Electronically Actuated	overcurrent	Fine as is
	Overcurrent	Overcurrent protection	Fine as is
	Overcurrent Protective Device, Branch-Circuit	Revise with the term Overcurrent Protective Device. (OCPD)	
	Overcurrent **Protective** Device, Supplementary (need to Revise term with acronym)	overcurrent protective device	overcurrent protective device (OCPD)
	Panelboard	overcurrent devices	overcurrent protective devices (OCPDs)
	Surge-Protective Device (SPD). (X2)	overcurrent device. (X2)	overcurrent protective device (OCPD)
	Switchboard	overcurrent	overcurrent protective devices (OCPDs)
	Tap Conductor	Overcurrent protection	Fine as is
10	**Article 215**		
	215.1	Overcurrent protection	Fine as is
	215.4(A)(1)Ex.1	overcurrent devices protecting the feeders	feeder OCPD
	215.4(A)(1)Ex.3	overcurrent device	OCPD
	215.5 Title	Overcurrent protection	Fine as is
	215.5	Feeders shall be protected against overcurrent	Feeders shall be provided with overcurrent protection in accordance with Article 240, Parts I
	215.5	overcurrent device	OCPD
	215.5Ex	overcurrent device protecting the feeders	feeder OCPDs
	215.5Ex	overcurrent device	OCPD

	215.18(B)	branch circuit overcurrent devices	OCPDs
10	**Article 225**		
	225.40. Title	Overcurrent protective devices	Fine as is
	225.40.	feeder overcurrent device (x2)	feeder OCPD
	225.40.	branch circuit overcurrent devices	Branch circuit OCPDs
	225.42(B)	branch circuit overcurrent devices	OCPDs
10	**Article 230**		
	230.7 Ex.2	Overcurrent protection	Fine as is
	230.42(A)(1)	overcurrent device (X3)	OCPD
	230.82(6)	Overcurrent protection	Fine as is
	230.82(7)	Overcurrent protection	Fine as is
	230.82(8)	Overcurrent protection	Fine as is
	230.82(9)	Overcurrent protection	Fine as is
	230.82(10)	Overcurrent protection	Fine as is
	230 Part VII	Overcurrent protection	Fine as is
	230.90(A)	overcurrent device	OCPD
	230.90(A)Ex.3	overcurrent device	OCPD
	230.90(B)	overcurrent device	OCPD
	230.91	overcurrent device (X2)	OCPD
	230.92	overcurrent device (X4)	OCPDs and OCPD
	230.93	overcurrent device	OCPD
	230.94	overcurrent device (X3)	OCPD
	230.94	Overcurrent protection (X2)	Fine as is
	230.95(A)	overcurrent device	OCPD
	230.95(B)	overcurrent device	OCPD
10	**Article 240**		
	240	Overcurrent Protection	Fine as is
	240.1 (X3)	Overcurrent protection	Fine as is
	240.2	branch-circuit Overcurrent protective devices	~~branch-circuit~~ Overcurrent protective devices
	240.4. Title	Protection of Conductors	Overcurrent Protection of Conductors
	240.4	Protected against overcurrent	shall be provided with overcurrent protection in accordance with
	240.4(B). Title	Overcurrent devices	Overcurrent protective Devices
	240.4(B)	Overcurrent device	OCPD
	240.4(B)	Overcurrent protective device	OCPD

	240.4(C). Title	Overcurrent devices	Overcurrent protective Devices
	240.4(C). (X2)	Overcurrent device.	OCPD
	240.4(D)	Overcurrent Protection	Fine as is
	240.4(D)(1)	Overcurrent protection	Fine as is
	240.4(D)(1)(2)		(a) OCPDs in accordance with 240.7 shall be marked for use with 18 AWG copper conductor (b) Delete (c) change to (b)
	240.4(D)(2)	Overcurrent protection	Fine as is
	240.4(D)(2)(2)		(a) OCPDs in accordance with 240.7 shall be marked for use with 16 AWG copper conductor (b) Delete (c) change to (b)
	240.4(D)(3)	Overcurrent protection	Fine as is
	240.4(D)(3)(2)		~~(a) Fuses and circuit breakers in accordance with 240.7 marked for use with 14 AWG copper-clad aluminum conductor~~ ~~(b) Delete~~
	240.4(D)(3)(2)		OCPDs in accordance with 240.7 shall be marked for use with 14 AWG copper-clad aluminum conductor
	240.4(E)	Protected against overcurrent	shall be permitted to have overcurrent protection in accordance with the following
	240.4(F)	Overcurrent protection	Fine as is
	240.4(F)	Overcurrent protective device	OCPD
	240.4(G). (X2)	Overcurrent protection	Fine as is
	240.4(H)	Protected against overcurrent	shall be provided with overcurrent protection in accordance with
	240.5	Protected against overcurrent	shall be provided with overcurrent protection in accordance with
	240.5(A)	Overcurrent device	OCPD
	240.5(A)	Protected against overcurrent	Fixture wires shall be provided with overcurrent protection in accordance with
	240.5(A)	Supplementary overcurrent protection	Fine as is
	240.5(B) Title	Branch-circuit overcurrent device.	Branch-Circuit Overcurrent protective Devices

	240.9	Protection of conductors against overcurrent	Fine as is
	240.10. Title	Supplementary Overcurrent protection	Fine as is
	240.10.	Supplementary overcurrent protection	Fine as is
	240.10.	Branch-Circuit overcurrent devices	OCPDs
	240.10.	Supplementary overcurrent devices	Supplementary OCPDs
	240.11. (X2)	Feeder overcurrent protective devices.	Feeder OCPDs
	240.11. (X2)	Service overcurrent protective device.	Service OCPD
	240.15(A). Title	Overcurrent device	Overcurrent protective device required
	240.15(A)	Overcurrent device	OCPD
	240.15(A)	Overcurrent trip. Overcurrent relay	Fine as is
	240.15(B) Title	Overcurrent device	Circuit breaker as Overcurrent protective device
	240.16	Branch circuit overcurrent protective devices	OCPDs
	240.21	Overcurrent Protection	Fine as is
	240.21	overcurrent protective device	OCPD
	240.21 (A)	Overcurrent Protection	Fine as is
	240.21 (B)	Overcurrent Protection	Fine as is
	240.21 (B) (1) (1) (b)	Overcurrent device(s)	OCPDs
	240.21 (B) (1) (1) (b)	overcurrent protective device	OCPD
	240.21 (B)(1) (1) (4)	Overcurrent device	OCPD
	240.21 (B) (1)(1) (4) In	Overcurrent Protection	Fine as is
	240.21 (B) (2) (1)	Overcurrent device	OCPD
	240.21 (B) (2) (2)	Overcurrent devices	OCPDs
	240.21 (B) (3) (1)	Overcurrent device	OCPD
	240.21 (B) (3) (2)	Overcurrent device	OCPD
	240.21 (B) (4) (3)	Overcurrent device	OCPD
	240.21 (B) (4) (4)	Overcurrent device	OCPD
	240.21 (B) (4) (4)	Overcurrent devices	OCPDs
	240.21 (B) (5) (2)	Overcurrent device	OCPD
	240.21 (B) (5) (2)	Overcurrent devices	OCPDs
	240.21 (B) (5) (3)	Overcurrent device	OCPD
	240.21 (C). (X2)	Overcurrent Protection	Fine As Is
	240.21 (C) (1). Title	Title change	Overcurrent Protective Device
	240.21 (C) (1)	"…protected by overcurrent protection…"	Fine As Is
	240.21 (C) (1)	Overcurrent protective device	OCPD
	240.21 (C) (2) (1) (b)	Overcurrent device(s)	OCPDs

	240.21 (C) (2) (1) (b)	Overcurrent device	OCPD
	240.21 (C) (2) (4)	Overcurrent device	OCPD
	240.21 (C) (2) (4)	Overcurrent device	OCPD
	240.21 (C) (2) (4)	Overcurrent protection	Fine as is
	240.21 (C) (3) (2)	Overcurrent devices	OCPDs
	240.21 (C) (3) (3)	Overcurrent devices	OCPDs
	240.21 (C) (4) (2)	Overcurrent device	OCPD
	240.21 (C) (4) (2)	Overcurrent devices	OCPDs
	240.21 (C) (4) (3)	Overcurrent device	OCPD
	240.21 (C) (5)	Overcurrent Protection	Fine As Is
	240.21 (C) (6) (1)	Overcurrent device	OCPD
	240.21 (D)	Overcurrent devices	OCPDs
	240.21 (E)	.shall be permitted to be protected against overcurrent.	"..shall be permitted to have overcurrent protection.."
	240.21 (F)	.shall be permitted to be protected against overcurrent.	"..shall be permitted to have overcurrent protection.."
	240.21 (H). (X2)	Overcurrent Protection	Fine As Is
	240.22. (X2)	Overcurrent device	OCPD
	240.24(A)	Supplementary overcurrent protection	Fine as is
	240.24(A). (X4)	Overcurrent protective devices	OCPDs
	240.24(B)	Overcurrent devices	OCPDs
	240.24(B)(1). Title	Feeder overcurrent protective devices	Feeder OCPDs
	240.24(B)(1)	Service overcurrent protective devices	Service OCPDs
	240.24(B)(2). TITLE	Branch-circuit overcurrent protective device	Fine as is
	240.24(B)(2).	Branch-circuit overcurrent protective device	Branch-Circuit OCPD
	240.24(C)	Overcurrent protective devices	OCPDs
	240.24(D)	Overcurrent protective devices	OCPDs
	240.24(E)	Overcurrent protective devices	OCPDs
	240.24(E)	Supplementary overcurrent protection	Fine as is
	240.24(E) (X2)	Overcurrent protective devices	OCPDs
	240.24(F)	Overcurrent protective devices	OCPDs
	240.30(A)	Overcurrent devices	OCPDs
	240.32	Overcurrent devices	OCPDs
	240.33	Overcurrent devices	OCPDs
	240.86	Overcurrent device	OCPD
	240.86(B)	Overcurrent device	OCPD
	240.86(C)	Overcurrent device	OCPD

	240.87	Overcurrent device	OCPD
	240.90.	Overcurrent protection	Fine as is
	240.91(B). (X2)	Overcurrent device	OCPD
	240.92	Overcurrent device	OCPD
	240.92(A)	~~be protected~~	shall be provided with overcurrent protection
	240.92(C)	Overcurrent protection	Fine as is
	240.92(C)(1)(1)	Overcurrent device	OCPD
	240.92(C)(1)(2)	protective devices	Fine as is
	240.92(C)(1)(3)	Overcurrent devices	OCPDs
	240.92(C)(2)(1)	Overcurrent device	OCPD
	240.92(C)(2)(2) (X3)	Overcurrent devices	OCPDs
	240.92(C)(2)(3)	Overcurrent relaying	Fine as is
	240.92(C)(2)(4)	Overcurrent device	OCPD
	240.92(D)	Overcurrent protection	Fine as is
	240.92(D)(2). (X3)	Overcurrent devices	OCPDs
	240.92(D)(4)	Overcurrent device	OCPD
	240.92(E)	Overcurrent device	OCPD
	240.92(E)	Overcurrent protection	Fine as is
10	**Article 242**		
	242.14(ABC)	Overcurrent device	OCPD
	242.16	Overcurrent protection	Branch-circuit OCPD
10	**Article 404**		
	404.5	Overcurrent Devices	OCPDs
10	**Article 408**		
	408.4(A)	Overcurrent device	OCPD
	408.6 (X2)	Overcurrent protection devices	OCPDs
	408.36. Title	Overcurrent protection	Fine as is
	408.36. (X2)	Overcurrent protective device	OCPD
	408.36. (X3)	Overcurrent devices	OCPDs
	408.36(A)	Overcurrent protection	Fine as is
	408.36(B)	Overcurrent protection	Fine as is
	408.36(C)	Overcurrent device	OCPD
	408.36(D)	Overcurrent protection devices	OCPDs
	408.52	Overcurrent devices	OCPDs
	408.54	Overcurrent devices	OCPDs

	408.55	Overcurrent devices	OCPDs

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-11			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
11	**Article 409**		
	409.21. TITLE	Overcurrent Protection	Fine as is
	409.21(A)	Overcurrent Protection	Fine as is
	409.21(B)	Protection	Overcurrent protection
	409.21(B)	overcurrent protective device	OCPD
	409.21(B)	Overcurrent Protection	Fine as is
	409.21(C). (X2)	overcurrent protective device	OCPD
	409.104	Overcurrent Devices	OCPDs
11	**Article 430**		
	430.10(A) In.	Overcurrent Device	OCPD
	430.22(G)(1)(1)	Overcurrent Protection	Fine as is
	430.22(G)(1)(2)	Overcurrent Protection	Fine as is
	430.22(G)(2)(1)	Overcurrent Protection	Fine as is
	430.22(G)(2)(2)	Overcurrent Protection	Fine as is
	430.28	Branc-Circuit protective device	OCPD
	430.28	Overcurrent Device	OCPD
	430.51	Overcurrent	Fine as is
	430.53(C)(5)	Overcurrent Protection	Fine as is
	430.55	Overcurrent Protection	Fine as is
	430.61	Overcurrents	Fine as is
	430.62(A)Ex.2	Feeder Overcurrent protective device	Feeder OCDP
	430.62(A)Ex.2	Overcurrent Protection	Fine as is
	430.62(B)	Feeder Overcurrent protective device	Feeder OCDP
	430.63Ex.	Feeder Overcurrent device	Feeder OCDP
	430.63Ex.	Overcurrent Protection	Fine as is
	430.72. Title	Overcurrent Protection	Fine as is
	430.72(A)	protected against overcurrent	shall be provided with overcurrent protection in accordance with
	430.72(A)	Branch-circuit overcurrent protective devices	OCPDs
	430.72(A)	protected against overcurrent	shall be provided with overcurrent protection in accordance with
	430.72(B). (X2)	Overcurrent Protection	Fine as is
	430.72(B)	Overcurrent Device	OCPD

	430.72(B)	Overcurrent Protection	Fine as is
	430.72(B)(1) (X3)	Overcurrent Protection	Fine as is
	430.72(B)(2) Title	Branch-circuit overcurrent protective device	Fine as is
	430.72(B)(2) (X2)	protective devices	OCPDs
	430.72(C)Ex.	Overcurrent Protection	Fine as is
	430.72(C)(3)	Overcurrent Devices	OCPDs
	430.72(C)(4)	Overcurrent Device	OCPD
	430.72(C)(5)	Protection	Overcurrent protection
	430.87	Overcurrent Device	OCPD
	430.94. (X2)	Overcurrent Protection	Fine as is
	430.94. (X3)	Overcurrent protective device	OCPD
	430.109(A)(7)	Overcurrent protection	Fine as is
	430.109(B)	Branch-circuit overcurrent device	branch-circuit OCPD
	430.111(A). (X2)	Overcurrent Device	Fine as is
	430.112 Ex.	Branch circuit protective device	Suggest CMP to Review
	430.206. Title	Overcurrent protection	Fine as is
	430.206(B)(2)	considered to have Overcurrent	Overload
	430.206(C)	Fault-Current protection	Suggest CMP to Review
	430.207	Overcurrent (overload)Relays	Fine as is
	430.207	Overcurrent Relays	Fine as is
11	**Article 440**		
	440.21	Overcurrent	Fine as is
	440.21	Overcurrent Protection	Fine as is
	440.22(B)(2)Ex.	Overcurrent device	OCPD
	440.52(B)	Overcurrent	shall be provided with overcurrent protection
11	**Article 460**		
	460.9. Title	Overcurrent Protection	Fine As Is
	460.9. (X3)	Overcurrent Device	OCPD
	460.25	Overcurrent Protection	Fine As Is
	460.28(B)	Overcurrent Device	OCPD

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-12			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
12	**Article 610**		
	610. Part V	Overcurrent Protection	Fine as is
	610.41(A)	Overcurrent Devices	OCPDs
	610.43(A)(1)	Branch Circuit Overcurrent Device	OCPD
	610.53 Title	Overcurrent Protection	Fine as is
	610.53	be protected from Overcurrent	shall be provided with overcurrent protection
	610.53	Overcurrent Devices	OCPDs
	610.53(B)	Branch Circuit Overcurrent Devices	OCPDs
12	**Article 620**		
	620.12(A)(4)	Overcurrent Protection	Fine as is
	620.22(A)(2) Title	Overcurrent protective device	Fine as is
	620.22(A)(2)	Overcurrent Device protecting	branch-circuit OCPD
	620.22(A)(2)	Overcurrent Device	OCPD
	620.22(B)	Overcurrent Device protecting	branch-circuit OCPD
	620.22(B)	Overcurrent Device	OCPD
	620.25 Title	Overcurrent Devices	Overcurrent Protective Devices
	620.25. (X2)	Overcurrent Devices	OCPDs
	620.53	Overcurrent protective device	OCPD
	620.54	Overcurrent protective device	OCPD
	620.55	Overcurrent protective device	OCPD
	Art 620 Part VII	Overcurrent Protection	Fine as is
	620.61	Overcurrent Protection	Fine as is
	620.61(A). (X2)	be protected against Overcurrent	shall be provided with overcurrent protection
	620.62(A)	Overcurrent protective devices, (OCPD)	OCPDs
	620.62(B)	OCPDs	Fine as is
	620.62(C)	OCPDs. And. Overcurrent Devices	Fine as is. And. OCPDs
	620.62	Overcurrent protective devices	OCPDs
	620.65. (X3)	Overcurrent Devices	OCPDs
12	**Article 625**		
	625.60(C). (X4)	Overcurrent Protection	Fine as is
12	**Article 627**		
	627.41	Overcurrent Protection	Fine as is
	627.41(A)	Overcurrent Protection	Fine as is

	627.41(B)	Overcurrent Devices	OCPDs
12	**Article 630**		
	630.12	Overcurrent Protection	Fine as is
	630.12	Overcurrent Device	OCPD
	630.12(A). (X2)	Overcurrent Protection	Fine as is
	630.12(A). (X5)	Overcurrent Device	OCPD
	630.13	Overcurrent Protection	Fine as is
	630.32	Overcurrent Protection	Fine as is
	630.32	Overcurrent Device	OCPD
12	**Article 640**		
	640.9(C)	Overcurrent Protection	Fine as is
	640.22	Overcurrent protection devices	OCPDs
	640.22	Overcurrent Devices	OCPDs
	640.43	Overcurrent protection devices	OCPDs
12	**Article 645**		
	645.27	Overcurrent protective devices, (OCPD)	OCPDs
	645.27	Overcurrent protective devices	OCPDs
12	**Article 646**		
	646.7. (X11)	Overcurrent Protection	Fine as is
12	**Article 647**		
	647.5	Overcurrent Protection	Fine as is
12	**Article 650**		
	650.9	Overcurrent Protection	Fine as is
	650.9	Overcurrent Device	OCPD
12	**Article 660**		
	660.7	Overcurrent Protection	Fine as is
	660.7(A)	Overcurrent protective devices	OCPDs
	660.7(B)	Overcurrent Devices	OCPDs
	660.7(B)	Overcurrent Protection	Fine as is
	660.9	Overcurrent Devices	OCPDs
12	**Article 665**		
	665.24	Overcurrent Protection	Fine as is
12	**Article 668**		
	668.4(C)(2)	Overcurrent Protection	Fine as is
	668.21	Overcurrent Protection	Fine as is

	668.21	Overcurrent Device	OCPD
12	**Article 669**		
	669.9	Overcurrent Protection	Fine as is
	669.9	be protected from Overcurrent	shall be provided with overcurrent protection
12	**Article 670**		
	670.1	Overcurrent Protection	Fine as is
	670.4(B). (X3)	Overcurrent Protection	Fine as is
	670.5. (X4)	Overcurrent Protection	Fine as is
	670.5(C). (X2)	Overcurrent protective device	OCPD
12	**Article 685**		
	685.10.	Overcurrent Devices	OCPDs

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-13			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
13	**Article 100**		
	Emerg.Power Supply Systems (EPSS)	overcurrent protection devices	overcurrent protective devices (OCPDs)
	Transfer-Switch B-C Emerg. Ltg.	branch-circuit overcurrent device	branch-circuit overcurrent protective device (OCPD)
13	**Article 130**		
	130.80(C)	overcurrent devices	OCPDs
	130.80(C)	branch-circuit overcurrent device	OCPD
13	**Article 445**		
	445.11	Overcurrent protective Relay	Fine as is
	445.12. Title	Overcurrent Protection	Fine as is
	445.12(A)	Overcurrent protective means	Overcurrent protection means
	445.12(B)	Overcurrent Protection	Fine as is
	445.12(B) (X2)	Overcurrent Device	OCPD
	445.12(C)	Overcurrent Device	OCPD
	445.12(D)	Overcurrent Devices	OCPDs
	445.12(E). (X3)	Overcurrent Devices	OCPDs
	445.13(A). (X2)	Overcurrent Protection	Fine as is
	445.13(B). Title	Overcurrent protection	Fine as is
	445.13(B).	Overcurrent protective device	OCPD
	445.13(B)	Overcurrent Relay	Fine as is
13	**Article 455**		
	455.7	Overcurrent Protection	Fine As Is
	455.7	protected from Overcurrent	shall be provided with overcurrent protection in accordance with
	455.7(A)	Overcurrent Protection	Fine As Is
	455.7(B)	Overcurrent Protection	Fine As Is
13	**Article 480**		
	480.4(B) IN.2	Overcurrent Protection	Fine As Is
	480.6. (X2)	Overcurrent Protection	Fine As Is
	480.7	Overcurrent Device	OCPD
13	**Article 695**		
	695.4(C)	Overcurrent protective devices	OCPDs
	695.4(H). Title	Overcurrent Device Selection	Overcurrent Protective Device Selection
	695.4(H)	Overcurrent Devices	OCPDs

	695.5	Overcurrent Device	OCPD
	695.5	Overcurrent protective devices	OCPDs
	695.5	Overcurrent Protection	Fine as is
	695.6	Overcurrent protective devices	OCPDs
	695.6	Overcurrent Devices	OCPD
	695.6	Overcurrent Protection	Fine as is
	695.7(A)(2)	Overcurrent Devices	OCPDs
	695.7	Overcurrent Protection	Fine as is
13	**Article 700**		
	700.4(F)(8)	Overcurrent protective devices, (OCPD)	OCPDs
	700.6(E)	Overcurrent protective device	OCPD
	700.10(B). (X6)	Overcurrent Protection	Fine as is
	700.10(B)(6)(b)(ii)	Overcurrent protective device	OCPD
	700.10(B)(6)(e)	Overcurrent protective devices	OCPDs
	Art. 700 Part VI	Overcurrent Protection	Fine as is
	700.30.	Branch-circuit overcurrent devices	OCPDs
	700.32(A)	Overcurrent protective devices, (OCPDs)	OCPDs
	700.32(A) In	Overcurrent Protection	Fine as is
	700.32(C)	Overcurrent Devices	OCPDs
13	**Article 701**		
	701.6(C)	Overcurrent protective device	OCPD
	701.10(B)(1). (X5)	Overcurrent Protection	Fine as is
	701.10(B)(1)	Overcurrent protective device	OCPD
	Art. 701. Part IV	Overcurrent Protection	OCPDs
	701.30.	Branch-Circuit Overcurrent devices	Branch-Circuit OCPDs
	701.32(A). (X2)	Overcurrent protective devices, OCPDs	OCPDs
	701.32(B). (X3)	OCPDs	Fine as is
	701.32(C). (X2)	OCPDs	Fine as is
	701.32(C)Ex	Overcurrent Devices	OCPDs
	701.32(C) In 2	OCPD and OCPDs	Fine as is
13	**Article 702**		
	702.5(C)	Overcurrent protective device	OCPD
13	**Article 706**		
	706.15(E)(1)	Overcurrent Device	OCPD
	706.30(B)	Overcurrent Devices	OCPDs

	706.31 Title	Overcurrent Protection	Fine as is
	706.31(A)	shall be protected at the source from overcurrent.	shall be provided with overcurrent protection at the source
	706.31(A)	shall be protected from overcurrent.	shall be provided with overcurrent protection
	706.31(A) In	Overcurrent Device	OCPD
	706.31(B). Title	Overcurrent Device	Overcurrent Protective Device
	706.31(B)	Overcurrent protective devices	OCPDs
	706.31(B)	Overcurrent devices	OCPDs
	706.31(C)	Overcurrent protective devices	OCPDs
	706.31(E)	Overcurrent Protection	Fine as is
	706.33(B)(2)	Overcurrent Device	OCPD
13	**Article 708**		
	708.10(B)	Overcurrent Protection	Fine as is
	708.24(E)	Overcurrent protective device	OCPD
	Art. 708. Part IV	Overcurrent Protection	Fine as is
	708.50.	Feeder- and Branch-circuit overcurrent devices	Feeder- and Branch-circuit OCPDs
	708.52(B)	Overcurrent Devices	OCPDs
	708.54(A)	Overcurrent protective devices, (OCPD)	OCPDs
	708.54(A). (B). (C)	OCPDs	Fine as is
	708.54	Overcurrent Devices	OCPDs

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-14			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
14	**Article 500**		
	500.30(A)(2)	Branch Circuit Overcurrent Protection	OCPD
	500.30.	Overcurrent Protection	Fine as is
14	**Article 501**		
	501.105(B)(5)	Overcurrent Protection	Fine as is
	501.125(B)(2)	Motor Overcurrent	Fine as is
14	**Article 502**		
	502.120(A)	Overcurrent Devices	OCPDs
	502.120(B)(1)	Overcurrent Devices	OCPDs
	502.125	Motor Overcurrent	Fine as is
14	**Article 505**		
	505.30(A)(2)	Branch Circuit Overcurrent Protection	OCPD
	505.30.	Overcurrent Protection	Fine as is
14	**Article 506**		
	506.30.	Branch Circuit Overcurrent Protection	OCPD
	506.30.	Overcurrent Protection	Fine as is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-15			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
15	**Article 100**		
	Bull Switch	Overcurrent protection	Fine as is
15	**Article 517**		
	517.17(B)	Overcurrent protective devices	OCPDs
	517.31(G). (X5)	Overcurrent protective devices	OCPDs
	517.31(G)	Overcurrent	Fine as is
	517.33((C). (X5)	Overcurrent protective devices	OCPDs
	517.42(F)	Overcurrent protective devices	OCPDs
	517.42(F)	Overcurrent	Fine as is
	517.73	Overcurrent Protection	Fine as is
	517.73(A)	Overcurrent protective devices	OCPDs
	517.73(B)	Overcurrent protective devices	OCPDs
	517.73(B)	Overcurrent Protection	Fine as is
	517.74(B)	Overcurrent protective devices	OCPDs
	517.160(A)(2)	Overcurrent Protection	Fine as is
	517.160(A)(2)	Overcurrent protective device	OCPD
	517.160(A)(2)	be protected against Overcurrent	be provided with overcurrent protection
	517.160(A)(3)	Overcurrent protective devices	OCPDs
	517.160(B)(1)	Overcurrent protective devices	OCPDs
15	**Article 518**		
	518.7(A)(1)	Overcurrent Protection	Fine as is
	518.17(A)(1) and (2)	Overcurrent Devices	OCPDs
15	**Article 520**		
	520.9	Branch Circuit Overcurrent Device	OCPD
	520.21	Overcurrent protective devices	OCPDs
	520.25. (X3)	Overcurrent Protection	Fine as is
	520.26	Overcurrent protective devices	OCPD
	520.26. (X3)	Overcurrent Protection	Fine as is
	520.27. (X2)	Overcurrent Device	OCPD
	520.44-T	Overcurrent Devices	OCPD
	520.50(C)	Overcurrent Protection	Fine as is
	520.50.	Branch-circuit overcurrent protective device	OCPDs
	520.52	Overcurrent Protection	Fine as is

	520.53(A)	Overcurrent protective devices	OCPDs
	520.53(D)	Overcurrent Protection	Fine as is
	520.54	Overcurrent Devices	OCPDs
	520.54(D)	Overcurrent Device	OCPD
	520.54(D)(1) and (2)	Overcurrent protective devices	OCPD
	520.54(E)	Overcurrent protective device	OCPD
	520.54(E). (X4)	Overcurrent protection device	OCPD
	520.54(E)	Overcurrent Devices	OCPDs
	520.54(K)	Overcurrent Device	OCPD
	520.68	Overcurrent protective device	OCPD
	520.68(3)	Overcurrent Device	OCPD
	520.68(4)	Overcurrent protective device	OCPD
	520.68(6)	Overcurrent Devices	OCPDs
	520.68(C)	Overcurrent Protection	Fine as is
15	**Article 522**		
	522.10(A)(2). (X3)	Overcurrent Devices	OCPDs
	522.10(A)(2	Overcurrent protective device	OCPD
	522.10(B). (X4)	Overcurrent Devices	OCPDs
	522.23. (X3)	Overcurrent Protection	Fine as is
15	**Article 525**		
	525.12	Overcurrent Device	OCPD
	525.23(B)	Overcurrent Device	OCPD
	525.23(C). (X2)	Overcurrent Protection	Fine as is
15	**Article 530**		
	530.9(A)	Branch-circuit overcurrent device	Branch-circuit OCPD
	530.10(C)	Overcurrent Protection	Fine as is
	530.23 and (A)	Overcurrent Protection	Fine as is
	530.23(B)	Overcurrent protective devices	OCPDs
	530.23(D)	Overcurrent Protection	Fine as is
	530.42	Overcurrent Protection	Fine as is
15	**Article 540**		
	540.11(B)	Overcurrent Devices	OCPDs

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-16			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
16	**Article 830**		
	830.15. (X4)	Overcurrent Protection	Fine as is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-17			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
17	**Article 422**		
	422.5(C)	Branch-circuit overcurrent protective device	Branch-Circuit OCPD
	422.11. Title	Overcurrent Protection	Fine as is
	422.11	protected against overcurrent	shall be provided with overcurrent protection
	422.11(A)	Overcurrent Protection	Fine as is
	422.11(A)	Branch-circuit overcurrent protective device	Branch-Circuit OCPD
	422.11(B)	Overcurrent Protection	OCPDs
	422.11(C)	Overcurrent Protection	OCPDs
	422.11(D)	Overcurrent protective devices	OCPDs
	422.11(E)	Overcurrent Protection	Fine as is
	422.11(E)(1)	Overcurrent Protection	Fine as is
	422.11(E)(2)	Overcurrent Protection	Fine as is
	422.11(E)(3)	Overcurrent Protection	OCPD
	422.11(E)(3)	Overcurrent Device	OCPD
	422.11(F)(1)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	422.11(F)(1)	Overcurrent Protective Devices	OCPDs
	422.11(G)	Overcurrent Protective Devices	OCPDs
	422.13	Overcurrent Protection	Fine as is
	422.31(A)	Branch-circuit overcurrent protective device	Branch-Circuit OCPD
	422.60(A)	Overcurrent Protection	Fine as is
	422.62(B)(1). (X2)	Overcurrent protective device	OCPD
17	**Article 424**		
	424.19	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	424.19(A)	Supplementary Overcurrent Protection	Fine as is
	424.19(A)	Supplementary Overcurrent Protection	Fine as is
	424.19(A)	Supplementary Overcurrent Protective Device(s)	Supplementary OCPDs
	424.19(B)	Supplementary Overcurrent Protection	Fine as is
	424.22	Overcurrent Protection	Fine as is
	424.22(A)	Overcurrent Protection	Fine as is
	424.22(A)	protected against overcurrent	"..shall be permitted to have overcurrent protection.."
	424.22(B)	Supplementary Overcurrent Protective Device	Supplementary OCPD
	424.22(C). Title	Overcurrent Protective Devices	Fine as is
	424.22(C)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs

	424.22(C)	Overcurrent Protection	Fine as is
	424.22(C)	Supplementary Overcurrent Protection	Fine as is
	424.22(D) (X2)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	424.22(E). (X3)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	424.72	Overcurrent Protection	Fine as is
	424.72(A)	Overcurrent protective device	OCPD
	424.72(B)	Overcurrent protective device	OCPD
	424.72(C). Title	Supplementary Overcurrent Protective Devices	Fine as is
	424.72(C)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	424.72(C)	Overcurrent Protection	Fine as is
	424.72(D). Title	Supplementary Overcurrent Protective Devices	Fine as is
	424.72(D).	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	424.72(D)	Overcurrent protective device	OCPD
	424.72(E)	Supplementary Overcurrent Protective Devices. (X3)	Supplementary OCPDs
	424.82	Overcurrent protective devices	OCPDs
17	**Article 425**		
	425.19	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.19(A). (X2)	Supplementary Overcurrent Protection	Fine as is
	425.19(A)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.19(B)	Supplementary Overcurrent Protection	Fine as is
	425.22. Title	Overcurrent Protection	Fine as is
	425.22(A)	Overcurrent Protection	Fine as is
	425.22(A)	protected against overcurrent	"..shall be permitted to have overcurrent protection.."
	425.22(B)	Supplementary Overcurrent Protective Device	Supplementary OCPD
	425.22(C). Title	Overcurrent Protective Devices	Fine as is
	425.22(C)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.22(C). (X2)	Supplementary Overcurrent Protection	Fine as is
	425.22(D). Title	Supplementary Overcurrent Protective Devices	Fine as is
	425.22(D). (X2)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.22(E) (X3)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.72	Overcurrent Protection	Fine as is
	425.72(A)	Overcurrent protective device	OCPD
	425.72(B)	Overcurrent protective device	OCPD
	425.72(C). Title	Supplementary Overcurrent Protective Devices	Fine as is
	425.72(C)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs

	425.72(C)	Overcurrent Protection	Fine as is
	425.72(D)	Overcurrent protection	Fine as is
	425.72(E). Title	Supplementary Overcurrent Protective Devices	Fine as is
	425.72(E)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.72(E)	Overcurrent Protective Devices	OCPD
	425.72(F). (X3)	Supplementary Overcurrent Protective Devices	Supplementary OCPDs
	425.82	Overcurrent protective devices	OCPDs
17	**Article 427**		
	427.57	Overcurrent Protection	Fine as is
	427.57	considered protected against Overcurrent	considered to have overcurrent protection
17	**Article 680**		
	680.10.(A)& (B)(2)	Overcurrent protective devices	OCPDs
	680.23(F)(2)	Overcurrent Protection	Fine as is

CMP-10 TG-4 Review of Overcurrent Language for the Articles undeer the purview of CMP-18			
CMP	**NEC Section (using First Draft of 2026 NEC)**	**Current Language**	**"New" Language**
18	**Article 393**		
	393.45. Title	Overcurrent ..... Protection	Overcurrent Protection ....
	393.45(A)	Overcurrent Protection	Fine as is
18	**Article 406**		
	406.46(F)	Overcurrent Device	OCPD
18	**Article 410**		
	410.59(A)	Branch-circuit overcurrent devices	Branch-Circuit OCPD
	410.153	Overcurrent Protection	Fine as is
18	**Article 600**		
	600.41	Overcurrent	CMP to Review

Public Comment No. 791-NFPA 70-2024 [Section No. 545.26]

545.26 Bonding of Exposed Non-Current-Carrying Metal Parts.

All exposed non-current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboards. A bonding conductor shall be connected between the panelboards and an accessible terminal on the chassis. Chassis of mutiple relocatable structure sections that are connected to form a single structural unit shall be bonded together with a solid copper, 8 AWG minimum, insulated or bare bonding conductor with terminations in accordance with 250.8 and 250.12.

Statement of Problem and Substantiation for Public Comment

As written in the first draft, two buildings that are twenty miles apart need to be bonded together.

Related Item

• FR 8672

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
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Submittal Date: Mon Aug 05 12:18:18 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8282-NFPA 70-2024
Statement: Relocatable structures should be physically connected to require them to be bonded together.

Public Comment No. 1702-NFPA 70-2024 [Section No. 547.44(A)(2)]

(2) Outdoors.

Equipotential planes shall be installed in concrete slabs where metallic equipment is located that could become energized and is accessible to livestock.

The equipotential plane shall encompass the area where the livestock stands while accessing metallic equipment that could become energized and be bonded in accordance with 547 .44(B).

Informational note: Metallic equipment could include but is not limited to waterers, conveyance feeding equipment and feeding troughs with electrical equipment.

Statement of Problem and Substantiation for Public Comment

The added informational note explains the type of electrical equipment found in an outdoor area that would require an equipotential plane.

On average, an EP plane on a farm is is five ohms. Farm wiring errors and product misuse permit secondary neutral voltage drop to allow abnormal current flow on the EQP. A 300-foot branch circuit connected to a grounding system with the normal 1.5 volts will increase to 2.25 voltage (at two volts, EPs start to degrade effectiveness). The voltage increases the likelihood of problematic levels of stay voltage, not just at waterers but all over the farm. This is due to the branch circuit grounding conduct size. An 8 AWG reduces this concern significantly.

Related Item

• Committee Input No. 8741-NFPA 70-2024 [Global Input]

Submitter Information Verification

Submitter Full Name: Dean Hunter
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Submittal Date: Mon Aug 26 12:54:45 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8293-NFPA 70-2024 There is no need to refer to a subsequent requirement.

Statement: The informational note explains the type of electrical equipment found in an outdoor area that would require an equipotential plane.

Public Comment No. 1340-NFPA 70-2024 [New Section after 547.44(C)(2)]

TITLE OF NEW CONTENT

(3) Unencapsulated steel structural welded wire reinforcement, bonded together by steel tie wires or the equivalent and fully embedded within the surface material.

If the structural reinforcing steel is absent, or is encapsulated in a nonconductive compound, or if embedding is not possible, unencapsulated welded wire steel reinforcement or a copper conductor grid shall be provided and shall be secured directly under the paving, and not more than 150 mm (6 in.) below finished grade.

Statement of Problem and Substantiation for Public Comment

This comment is being submitted on behalf of the Minnesota Department of Labor and Industry. Currently, the Department's inspection staff includes 14-office/field staff, 50-state field inspectors, 4-virtual inspectors and 22 plus contract electrical inspectors that complete over 170,000 electrical inspections annually.

Added a new (3) to correlate with the changes in 680.26 regarding pool bonding for consistency. This comment will also be submitted for First Revision No. 8321-NFPA 70-2024 Section No. 555.14, and First Revision No. 8420-NFPA 70-2024 Section No. 682.33.

Related Item

• First Revision No. 8722-NFPA 70-2024 Section No. 547.44

Submitter Information Verification

Submitter Full Name: Dean Hunter
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Submittal Date: Tue Aug 20 17:23:02 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8294-NFPA 70-2024

Statement: 547.44(C)(2): Item 3 was added for consistency of requirements for equipotential planes.

New item (3) is in concert with similar changes in Section 680.26 regarding pool bonding grid. Item (4) was added to address installations where the equipotential plane was never installed, or when there is no surface material to embed the equipotential plane.

Public Comment No. 1724-NFPA 70-2024 [Article 550]

Article 550 Mobile Homes, Manufactured Homes, and Mobile Home Parks

Part I. General

550.1 Scope.

This article covers electrical conductors and equipment installed within or on mobile and manufactured homes, conductors that connect mobile and manufactured homes to a supply of electricity, and installation of electrical wiring, luminaires, equipment, and appurtenances related to electrical installations within a mobile home park up to the mobile home service-entrance conductors or, if none, the mobile home service equipment.

Informational Note: See 24 CFR 3280, *Manufactured Home Construction and Safety Standards* , of the Federal Department of Housing and Urban Development for additional information on manufactured housing.

550.2 Listing Requirements.

All electrical materials, devices, appliances, fittings, and other equipment shall be listed and labeled by a qualified testing agency and be connected in an approved manner when installed.

550.4 General Requirements.

(A) In Other Than Mobile Home Parks.

Mobile homes installed in other than mobile home parks shall comply with the requirements of this article.

(B) Connection to Wiring System.

This article shall apply to mobile homes intended for connection to a wiring system rated 120/240 volts, nominal, 3-wire ac, with a grounded neutral conductor.

Part II. Mobile and Manufactured Homes

550.10 Power Supply.

(A) Feeder.

The power supply to the mobile home shall be a feeder assembly consisting of not more than one listed 50-ampere mobile home power-supply cord or a permanently installed feeder.

Exception No. 1: A mobile home that is factory equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a listed mobile home power-supply cord rated 40 amperes.

Exception No. 2: A feeder assembly shall not be required for manufactured homes constructed in accordance with 550.32(B) .

(B) Power-Supply Cord.

If the mobile home has a power-supply cord, it shall be permanently attached to the panelboard's enclosure, or to a junction box permanently connected to the panelboard, with the free end terminating in an attachment plug cap.

Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, mobile homes.

A suitable clamp or the equivalent shall be provided at the panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.

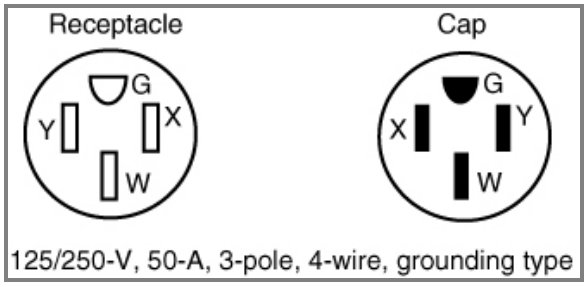
Cords shall be a listed type with four conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the equipment grounding conductor.

(C) Attachment Plug Cap.

The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 550.10(C) and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 550.10(C) . It shall be listed, by itself or as part of a power-supply cord assembly, for the purpose and shall be molded to or installed on the flexible cord so that it is secured tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be oriented so that the grounding member is farthest from the cord.

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications* , Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

Figure 550.10(C) 50-Ampere, 125/250-Volt Receptacle and Attachment Plug Cap Configurations, 3-Pole, 4-Wire, Grounding-Types, Used for Mobile Home Supply Cords and Mobile Home Parks.



(D) Overall Length of a Power-Supply Cord.

The overall length of a power-supply cord, measured from the end of the cord, including bared leads, to the face of the attachment plug cap shall not be less than 6.4 m (21 ft) and shall not exceed 11 m (36 **1** ⁄ **2** ft). The length of the cord from the face of the attachment plug cap to the point where the cord enters the mobile home shall not be less than 6.0 m (20 ft).

(E) Marking.

The power-supply cord shall bear the following marking:

FOR USE WITH MOBILE HOMES — 40 AMPERES

or

FOR USE WITH MOBILE HOMES — 50 AMPERES

(F) Point of Entrance.

The point of entrance of the feeder assembly to the mobile home shall be in the exterior wall, floor, or roof.

(G) Protected.

Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or equivalent. The cord shall be permitted to be installed within the mobile home walls, provided a continuous raceway having a maximum size of 32 mm (1 **1**⁄**4** in.) is installed from the branch-circuit panelboard to the underside of the mobile home floor.

(H) Protection Against Corrosion and Mechanical Damage.

Permanent provisions shall be made for the protection of the attachment plug cap of the power-supply cord and any connector cord assembly or receptacle against corrosion and mechanical damage if such devices are in an exterior location while the mobile home is in transit.

(I) Mast Weatherhead or Raceway.

Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of either of the following:

(1) One mast weatherhead installation, installed in accordance with Article 230 , Part II, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor.

(2) Raceways from the disconnecting means in the mobile home to the underside of the mobile home, with provisions for attachment to a suitable junction box or fitting to the raceway on the underside of the mobile home [with or without conductors as in 550.10(I)(1)], which shall be one of the following:

(3) Rigid metal conduit

(4) Intermediate metal conduit

(5) Rigid polyvinyl chloride conduit

(6) Other raceways identified for the location

The manufacturer shall provide written installation instructions stating the proper feeder conductor sizes for the raceway and the size of the junction box to be used.

550.11 Disconnecting Means and Branch-Circuit Protective Equipment.

The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a panelboard. If a fused panelboard is used, the maximum fuse size for the mains shall be plainly marked with lettering at least 6 mm (**1**⁄**4** in.) high and visible when fuses are changed.

Where plug fuses and fuseholders are used, they shall be tamper-resistant Type S, enclosed in dead-front fuse panelboards. Electrical panelboards containing circuit breakers shall also be dead-front type.

Informational Note: See 110.22 concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.

(A) Disconnecting Means.

A single disconnecting means shall be provided in each mobile home consisting of a circuit breaker, or a switch and fuses and its accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the mobile home. The main circuit breakers or fuses shall be plainly marked "Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding, with sufficient terminals for all grounding conductors. The terminations of the grounded circuit conductors shall be insulated in accordance with 550.16(A) . The disconnecting equipment shall have a rating not less than the calculated load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of 600 mm (24 in.) from the bottom of such equipment to the floor level of the mobile home.

> Informational Note: See 550.20(B) for information on disconnecting means for branch circuits designed to energize heating or air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners.

A panelboard shall be rated not less than 50 amperes and employ a 2-pole circuit breaker rated 40 amperes for a 40-ampere supply cord, or 50 amperes for a 50-ampere supply cord. A panelboard employing a disconnect switch and fuses shall be rated 60 amperes and shall employ a single 2-pole, 60-ampere fuseholder with 40- or 50-ampere main fuses for 40- or 50-ampere supply cords, respectively. The outside of the panelboard shall be plainly marked with the fuse size.

The panelboard shall be located in an accessible location but shall not be located in a bathroom or a clothes closet. A clear working space at least 750 mm (30 in.) wide and 750 mm (30 in.) in front of the panelboard shall be provided. This space shall extend from the floor to the top of the panelboard.

(B) Branch-Circuit Protective Equipment.

Branch-circuit distribution equipment shall be installed in each mobile home and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

The branch-circuit overcurrent devices shall be rated as follows:

(1) Not more than the circuit conductors; and

(2) Not more than 150 percent of the rating of a single appliance rated 13.3 amperes or more that is supplied by an individual branch circuit; but

(3) Not more than the overcurrent protection size and of the type marked on the air conditioner or other motor-operated appliance.

(C) Two-Pole Circuit Breakers.

Where circuit breakers are provided for branch-circuit protection, 240-volt circuits shall be protected by a 2-pole common or companion trip, or by circuit breakers with identified handle ties.

(D) Electrical Nameplates.

A metal nameplate on the outside adjacent to the feeder assembly entrance shall read as follows:

THIS CONNECTION FOR 120/240-VOLT,

3-POLE, 4-WIRE, 60-HERTZ,

_____ AMPERE SUPPLY

The correct ampere rating shall be marked in the blank space.

Exception: For manufactured homes, the manufacturer shall provide in its written installation instructions or in the data plate the minimum ampere rating of the feeder assembly or, where provided, the service-entrance conductors intended for connection to the manufactured home. The rating provided shall not be less than the minimum load calculated in accordance with 550.18 .

550.12 Branch Circuits.

The number of branch circuits required shall be determined in accordance with 550.12(A) through (E).

(A) Lighting.

The number of branch circuits shall be based on 33 volt-amperes/m^2 (3 VA/ft^2) times outside dimensions of the mobile home (coupler excluded) divided by 120 volts to determine the number of 15- or 20-ampere lighting area circuits, for example,

$$\frac{3 \times \text{length} \times \text{width}}{120 \times 15 \text{ (or } 20)} = \text{No. of 15- (or 20-) ampere circuits} \qquad \textbf{[550.12(A)]}$$

(B) Small Appliances.

In kitchens, pantries, dining rooms, and breakfast rooms, two or more 20-ampere small-appliance circuits, in addition to the number of circuits required elsewhere in this section, shall be provided for all receptacle outlets required by 550.13(D) in these rooms. Such circuits shall have no other outlets.

Exception No. 1: Receptacle outlets installed solely for the electrical supply and support of an electric clock in any the rooms specified in 550.12(B) shall be permitted.

Exception No. 2: Receptacle outlets installed to provide power for supplemental equipment and lighting on gas-fired ranges, ovens, or counter-mounted cooking units shall be permitted.

Exception No. 3: A single receptacle for refrigeration equipment shall be permitted to be supplied from an individual branch circuit rated 15 amperes or greater.

Countertop receptacle outlets installed in the kitchen shall be supplied by not less than two small-appliance circuit branch circuits, either or both of which shall be permitted to supply receptacle outlets in the kitchen and other locations specified in 550.12(B).

(C) Laundry Area.

Where a laundry area is provided, a 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s). This circuit shall have no other outlets.

(D) General Appliances.

For general appliances, such as furnaces, water heaters, ranges, and central or room air conditioners, there shall be one or more circuits of adequate rating in accordance with the following:

Informational Note: See Article 440, Parts I through VI, for central air conditioning.

(1) The ampere rating of fixed appliances shall be not over 50 percent of the circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on the same circuit.

(2) For fixed appliances on a circuit without lighting outlets, the sum of rated amperes shall not exceed the branch-circuit rating. Motor loads or continuous loads shall not exceed 80 percent of the branch-circuit rating.

(3) The rating of a single cord- and plug-connected appliance on a circuit having no other outlets shall not exceed 80 percent of the circuit rating.

(4) The rating of a range branch circuit shall be based on the range demand as specified for ranges in 550.18(B)(5).

(E) Bathrooms.

Bathroom receptacle outlets shall be supplied by at least one 20-ampere branch circuit. Such circuits shall have no outlets other than as provided for in 550.13(E)(2).

550.13 Receptacle Outlets.

(A) Grounding-Type Receptacle Outlets.

All receptacle outlets shall comply with the following:

(1) Be of grounding type

(2) Be installed according to 406.12

(3) Except where supplying specific appliances, be 15- or 20-ampere, 125-volt, either single or multiple type, and accept parallel-blade attachment plugs

(B) Ground-Fault Circuit Interrupters (GFCIs).

Ground-fault circuit-interrupter protection shall be provided as required in 210.8 .

(C) Cord-Connected Fixed Appliance.

A grounding-type receptacle outlet shall be provided for each cord-connected fixed appliance installed.

(D) Receptacle Outlets Required.

Except in the bath, closet, and hallway areas, receptacle outlets shall be installed at wall spaces 600 mm (2 ft) wide or more so that no point along the floor line is more than 1.8 m (6 ft) measured horizontally from an outlet in that space. In addition, a receptacle outlet shall be installed in the following locations:

(1) Over or adjacent to countertops in the kitchen [at least one on each side of the sink if countertops are on each side and are 300 mm (12 in.) or over in width].

(2) Adjacent to the refrigerator and freestanding gas-range space. A multiple-type receptacle shall be permitted to serve as the outlet for a countertop and a refrigerator.

(3) At countertop spaces for built-in vanities.

(4) At countertop spaces under wall-mounted cabinets.

(5) In the wall at the nearest point to where a bar-type counter attaches to the wall.

(6) In the wall at the nearest point to where a fixed room divider attaches to the wall.

(7) In laundry areas within 1.8 m (6 ft) of the intended location of the laundry appliance(s).

(8) At least one receptacle outlet located outdoors and accessible at grade level and not more than 2.0 m (6 **1** / **2** ft) above grade. A receptacle outlet located in a compartment accessible from the outside of the unit shall be considered an outdoor receptacle.

(9) At least one receptacle outlet shall be installed in bathrooms within 900 mm (36 in.) of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is a part of a luminaire or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.

(E) Pipe Heating Cable(s) Outlet.

For the connection of pipe heating cable(s), a receptacle outlet shall be located on the underside of the unit as follows:

(1) Within 600 mm (2 ft) of the cold water inlet.

(2) Connected to an interior branch circuit, other than a small-appliance branch circuit. It shall be permitted to use a bathroom receptacle circuit for this purpose.

(3) On a circuit where all of the outlets are on the load side of the ground-fault circuit interrupter.

(4) This outlet shall not be considered as the receptacle required by 505.30(B)(2) .

(F) Receptacle Outlets Not Permitted.

Receptacle outlets shall not be permitted in the following locations:

(1) Receptacle outlets shall not be installed within or directly over a bathtub or shower space.

(2) A receptacle shall not be installed in a face-up position in any countertop.

(3) Receptacle outlets shall not be installed above electric baseboard heaters, unless provided for in the listing or manufacturer's instructions.

(G) Receptacle Outlets Not Required.

Receptacle outlets shall not be required in the following locations:

(1) In the wall space occupied by built-in kitchen or wardrobe cabinets

(2) In the wall space behind doors that can be opened fully against a wall surface

(3) In room dividers of the lattice type that are less than 2.5 m (8 ft) long, not solid, and within 150 mm (6 in.) of the floor

(4) In the wall space afforded by bar-type counters

550.14 Luminaires and Appliances.

(A) Fasten Appliances in Transit.

Means shall be provided to securely fasten appliances when the mobile home is in transit. (See 550.16 for provisions on grounding.)

(B) Accessibility.

Every appliance shall be accessible for inspection, service, repair, or replacement without removal of permanent construction.

(C) Pendants.

Listed pendant-type luminaires or pendant cords shall be permitted.

(D) Bathtub and Shower Luminaires.

Where a luminaire is installed over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type listed for wet locations.

550.15 Wiring Methods and Materials.

Except as specifically limited in this section, the wiring methods and materials included in this *Code* shall be used in mobile homes. Where conductors are terminated, they shall be used with equipment listed and identified for the conductor materials.

(A) Nonmetallic Boxes.

Nonmetallic boxes shall be permitted only with nonmetallic cable or nonmetallic raceways.

(B) Nonmetallic Cable Protection.

Nonmetallic cable located 380 mm (15 in.) or less above the floor, if exposed, shall be protected from physical damage by covering boards, guard strips, or raceways. Cable likely to be damaged by stowage shall be so protected in all cases.

(C) Metal-Covered and Nonmetallic Cable Protection.

Metal-covered and nonmetallic cables shall be permitted to pass through the centers of the wide side of 2 by 4 studs. However, they shall be protected where they pass through 2 by 2 studs or at other studs or frames where the cable or armor would be less than 32 mm (1 $^{1}/_{4}$ in.) from the inside or outside surface of the studs where the wall covering materials are in contact with the studs. Steel plates on each side of the cable, or a tube, with not less than 1.35 mm (0.053 in.) wall thickness shall be required to protect the cable. These plates or tubes shall be securely held in place.

(D) Metal Faceplates.

Where metal faceplates are used, the installation shall comply with 406.40(B) and 406.16(B).

(E) Installation Requirements.

Where a range, clothes dryer, or other appliance is connected by metal-covered cable or flexible metal conduit, a length of not less than 900 mm (3 ft) of unsupported cable or conduit shall be provided to service the appliance. The cable or flexible metal conduit shall be secured to the wall. Type NM or Type SE cable shall not be used to connect a range or dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch-circuit overcurrent protective device and a junction box or range or dryer receptacle.

(F) Raceways.

All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges. Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a locknut and bushing connection, two locknuts shall be provided, one inside and one outside of the enclosure.

(G) Switches.

Switches shall be rated as follows:

(1) For lighting circuits, switches shall be rated not less than 10 amperes, 120 to 125 volts, and in no case less than the connected load.

(2) Switches for motor or other loads shall comply with 406.46.

(H) Under-Chassis Wiring (Exposed to Weather).

(1)

Where outdoor or under-chassis line-voltage (120 volts, nominal, or higher) wiring is exposed, it shall be protected by a conduit or raceway identified for use in wet locations. The conductors shall be listed for use in wet locations.

(2)

Where wiring is exposed to physical damage, it shall be protected by a raceway, conduit, or other means.

(I) Boxes, Fittings, and Cabinets.

Boxes, fittings, and cabinets shall be securely fastened in place and shall be supported from a structural member of the home, either directly or by using a substantial brace.

Exception: Snap-in-type boxes. Boxes provided with special wall or ceiling brackets and wiring devices with integral enclosures that securely fasten to walls or ceilings and are identified for the use shall be permitted without support from a structural member or brace. The testing and approval shall include the wall and ceiling construction systems for which the boxes and devices are intended to be used.

(J) Appliance Terminal Connections.

Appliances having branch-circuit terminal connections that operate at temperatures higher than 60°C (140°F) shall have circuit conductors as described in the following:

(1) Branch-circuit conductors having an insulation suitable for the temperature encountered shall be permitted to be run directly to the appliance.

(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connection to a readily accessible outlet box placed at least 300 mm (1 ft) from the appliance. These conductors shall be in a suitable raceway or Type AC or MC cable of at least 450 mm (18 in.) but not more than 1.8 m (6 ft) in length.

(K) Component Interconnections.

Fittings and connectors that are intended to be concealed at the time of assembly shall be listed and identified for the interconnection of building components. Such fittings and connectors shall be equal to the wiring method employed in insulation, temperature rise, and fault-current withstanding and shall be capable of enduring the vibration and shock occurring in mobile home transportation.

Informational Note: See 550.19 for interconnection of multiple section units.

550.16 Grounding.

Grounding of both electrical and nonelectrical metal parts in a mobile home shall be through connection to a grounding bus in the mobile home panelboard and shall be connected through the green-colored insulated conductor in the supply cord or the feeder wiring to the grounding bus in the service-entrance equipment located adjacent to the mobile home location. Neither the frame of the mobile home nor the frame of any appliance shall be connected to the grounded circuit conductor in the mobile home. Where the panelboard is the service equipment as permitted by 550.32(B) , the neutral conductors and the equipment grounding bus shall be connected.

(A) Grounded Conductor.

(1) Insulated.

The grounded circuit conductor shall be insulated from the equipment grounding conductors and from equipment enclosures and other grounded parts. The grounded circuit conductor terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the panelboard or in appliances shall be removed and discarded. Where the panelboard is the service equipment as permitted by 550.32(B) , the neutral conductors and the equipment grounding bus shall be connected.

(2) Connections of Ranges and Clothes Dryers.

Connections of ranges and clothes dryers with 120/240-volt, 3-wire ratings shall be made with 4-conductor cord and 3-pole, 4-wire, grounding-type plugs or by Type AC cable, Type MC cable, or conductors enclosed in flexible metal conduit.

(B) Equipment Grounding Means.

(1) Supply Cord or Permanent Feeder.

The green-colored insulated grounding wire in the supply cord or permanent feeder wiring shall be connected to the grounding bus in the panelboard or disconnecting means.

(2) Electrical System.

In the electrical system, all exposed metal parts, enclosures, frames, luminaire canopies, and so forth, shall be effectively bonded to the grounding terminal or enclosure of the panelboard.

(3) Cord-Connected Appliances.

Cord-connected appliances, such as washing machines, clothes dryers, and refrigerators, and the electrical system of gas ranges and so forth, shall be grounded by means of a cord with an equipment grounding conductor and grounding-type attachment plug.

(C) Bonding of Non-Current-Carrying Metal Parts.

(1) Exposed Non-Current-Carrying Metal Parts.

All exposed non-current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboard. A bonding conductor shall be connected between the panelboard and an accessible terminal on the chassis. Chassis of multiple mobile home sections shall be bonded together with a solid copper, 8 AWG minimum, insulated or bare, bonding conductor with terminations in accordance with 250.8 and 250.12 .

(2) Grounding Terminals.

Grounding terminals shall be of the solderless type and listed as pressure-terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be 8 AWG copper minimum, or equivalent. The bonding conductor shall be routed so as not to be exposed to physical damage.

(3) Metallic Piping and Ducts.

Metallic gas, water, and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis [see 550.16(C)(1)] by clamps, solderless connectors, or by suitable grounding-type straps.

(4) Metallic Roof and Exterior Coverings.

Any metallic roof and exterior covering shall be considered bonded if the following conditions are met:

(1) The metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners.

(2) The lower panel of the metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two metal straps per mobile home unit or section at opposite ends.

The bonding strap material shall be a minimum of 100 mm (4 in.) in width of material equivalent to the skin or a material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings such as screws and starwashers or equivalent.

550.17 Testing.

(A) Dielectric Strength Test.

The wiring of each mobile home shall be subjected to a 1-minute, 900-volt, dielectric strength test (with all switches closed) between live parts (including neutral conductor) and the mobile home ground. Alternatively, the test shall be permitted to be performed at 1080 volts for 1 second. This test shall be performed after branch circuits are complete and after luminaires or appliances are installed.

Exception: *Listed luminaires or appliances shall not be required to withstand the dielectric strength test.*

(B) Continuity and Operational Tests and Polarity Checks.

Each mobile home shall be subjected to all of the following:

(1) An electrical continuity test to ensure that all exposed electrically conductive parts are properly bonded

(2) An electrical operational test to demonstrate that all equipment, except water heaters and electric furnaces, is connected and in working order

(3) Electrical polarity checks of permanently wired equipment and receptacle outlets to determine that connections have been properly made

550.18 Calculations.

The method detailed in 550.18(A) through 550.18(C) shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article 120 , Parts I through IV, and be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

(A) Lighting, Small-Appliance, and Laundry Load.

(1) Lighting Volt-Amperes.

Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2) — for example, length × width × 3 = lighting volt-amperes.

(2) Small-Appliance Volt-Amperes.

Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

(3) Laundry Area Circuit Volt-Amperes.

1500 volt-amperes.

(4) Total Volt-Amperes.

Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

(5) Net Volt-Amperes.

First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

(B) Total Load for Determining Power Supply.

Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.18(A)(5) .

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere power-supply cord is provided, allow 15 amperes per leg for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.18(B)(2) .

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.18(B) .

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D , Example D11, for an illustration of the application of this calculation.

Table 550.18(B) Freestanding Range Load
Nameplate Rating

(watts) Use

(volt-amperes) 0–10,000 80 percent of rating Over 10,000–12,500 8,000 Over 12,500–13,500 8,400 Over 13,500–14,500 8,800 Over 14,500–15,500 9,200 Over 15,500–16,500 9,600 Over 16,500–17,500 10,000

(C) Optional Method of Calculation for Lighting and Appliance Load.

The optional method for calculating lighting and appliance load shown in 120.82 shall be permitted.

550.19 Interconnection of Multiple-Section Mobile or Manufactured Home Units.

(A) Wiring Methods.

Approved and listed fixed-type wiring methods shall be used to join portions of a circuit that must be electrically joined and are located in adjacent sections after the home is installed on its support foundation. The circuit's junction shall be accessible for disassembly when the home is prepared for relocation.

Informational Note: See 550.15(K) for component interconnections.

(B) Disconnecting Means.

Expandable or multiunit manufactured homes, not having permanently installed feeders, that are to be moved from one location to another shall be permitted to have disconnecting means with branch-circuit protective equipment in each unit when so located that after assembly or joining together of units, the requirements of 550.10 will be met.

550.20 Outdoor Outlets, Luminaires, Air-Cooling Equipment, and So Forth.

(A) Listed for Outdoor Use.

Outdoor luminaires and equipment shall be listed for wet locations or outdoor use. Outdoor receptacles shall comply with 406.9 . Where located on the underside of the home or located under roof extensions or similarly protected locations, outdoor luminaires and equipment shall be listed for use in damp locations.

(B) Outside Heating Equipment, Air-Conditioning Equipment, or Both.

A mobile home provided with a branch circuit designed to energize outside heating equipment, air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners, shall have such branch-circuit conductors terminate in a listed outlet box, or disconnecting means, located on the outside of the mobile home. A label shall be permanently affixed adjacent to the outlet box and shall contain the following information:

THIS CONNECTION IS FOR HEATING

AND/OR AIR-CONDITIONING EQUIPMENT.

THE BRANCH CIRCUIT IS RATED AT NOT MORE THAN

_____ AMPERES, AT _____ VOLTS, 60 HERTZ,

_____ CONDUCTOR AMPACITY.

A DISCONNECTING MEANS SHALL BE LOCATED

WITHIN SIGHT OF THE EQUIPMENT.

The correct voltage and ampere rating shall be given. The tag shall be not less than 0.51 mm (0.020 in.) thick etched brass, stainless steel, anodized or alclad aluminum, or equivalent. The tag shall not be less than 75 mm by 45 mm (3 in. by 1 $^{3}/_{4}$ in.) minimum size.

550.25 Arc-Fault Circuit-Interrupter Protection.

All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in mobile homes and manufactured homes shall comply with 210.12

Part III. Services and Feeders

550.30 Distribution System.

The mobile home park secondary electrical distribution system to mobile home lots shall be single-phase, 120/240 volts, nominal.

550.31 Allowable Demand Factors.

Park electrical wiring systems shall be calculated (at 120/240 volts) on the larger of the following:

(1) 16,000 volt-amperes for each mobile home lot

(2) The load calculated in accordance with 550.18 for the largest typical mobile home that each lot will accept

It shall be permissible to calculate the feeder or service load in accordance with Table 550.31 . No demand factor shall be allowed for any other load, except as provided in this *Code* .

Table 550.31 Demand Factors for Services and Feeders
Number of

Mobile Homes Demand

Factor (%) 1 100 2 55 3 44 4 39 5 33 6 29 7–9 28 10–12 27 13–15 26 16–21 25 22–40 24 41–60 23 61 and over 22

550.32 Service Equipment.

(A) Mobile Home Service Equipment.

Mobile home service equipment shall not be mounted in or on mobile homes. The service equipment shall be rated not less than that required by 550.32(C) and mounted within sight from the mobile home it serves. The installation of the service equipment shall comply with Article 230 , Part I through Part VII. The mobile home service disconnect shall be permitted to be used as the emergency disconnect in accordance with 230.70(A)(2) and 230.70(B)(2) .

(B) Manufactured Home Service Equipment.

Manufactured home service equipment shall be permitted to be installed in or on manufactured homes if all of the following conditions are met:

(1) The manufacturer shall include, in its written installation instructions, information requiring that the home be secured in place by an anchoring system or installed on and secured to a permanent foundation.

(2) The installation of the service shall comply with Article 230 , Part I through Part VII.

(3) Means shall be provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure.

(4) Bonding and grounding of the service shall comply with Article 250 , Part I through Part V.

(5) The manufacturer shall include, in its written installation instructions, one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250 .

(6) The minimum size grounding electrode conductor shall be specified in the instructions.

(7) A warning label, meeting the requirements in 110.21(B) and stating the following, shall be mounted on or adjacent to the service equipment:

WARNING

DO NOT PROVIDE ELECTRICAL POWER

UNTIL THE GROUNDING ELECTRODE(S)

IS INSTALLED AND CONNECTED

(SEE INSTALLATION INSTRUCTIONS).

Where the service equipment is not installed in or on the unit, the installation shall comply with the other requirements of this section.

(C) Rating.

Mobile home service equipment shall be rated at not less than 100 amperes at 120/240 volts, and provisions shall be made for connecting a mobile home feeder assembly by a permanent wiring method. Power outlets used as mobile home service equipment shall also be permitted to contain receptacles rated up to 50 amperes with appropriate overcurrent protection. Fifty-ampere receptacles shall conform to the configuration shown in Figure 550.10(C) .

> Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications* , Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

(D) Additional Outside Electrical Equipment.

Means for connecting a mobile home accessory building or structure or additional electrical equipment located outside a mobile home by a fixed wiring method shall be provided in either the mobile home service equipment or the local external disconnecting means permitted in 550.32(A) .

(E) Replacement Home.

When existing service equipment is reconnected to a replacement mobile or manufactured home, the service shall be provided with a surge protective device in accordance with 230.67 .

(F) Additional Receptacles on Service Equipment.

Receptacles located outside mobile or manufactured homes shall be provided with ground-fault circuit-interrupter protection as specified by 210.8(A) . Where receptacles provide power to mobile or manufactured homes in accordance with 550.10 , ground-fault circuit-interrupter protection shall not be required.

(G) Mounting Height.

Outdoor mobile home disconnecting means shall be installed so the bottom of the enclosure containing the disconnecting means is not less than 600 mm (2 ft) above finished grade or working platform. The disconnecting means shall be installed so that the center of the grip of the operating handle, when in the highest position, is not more than 2.0 m (6 ft 7 in.) above the finished grade or working platform.

(H) Marking.

Where a 125/250-volt receptacle is used in mobile home service equipment, the service equipment shall be marked as follows:

TURN DISCONNECTING SWITCH OR

CIRCUIT BREAKER OFF BEFORE INSERTING

OR REMOVING PLUG. PLUG MUST BE FULLY

INSERTED OR REMOVED.

The marking shall be located on the service equipment adjacent to the receptacle outlet.

550.33 Feeder.

(A) Feeder Equipment.

The feeder assembly, including the disconnecting means, shall not be mounted in or on the mobile home. A manufactured home feeder disconnecting means shall be permitted to be installed in or on the manufactured home in accordance with the requirements of 550.32(B) . The feeder equipment shall be rated not less than that required in 550.32(C) , mounted in a readily accessible outdoor location, and within sight from the mobile home or manufactured home it serves. Grounding of the disconnecting means shall be in accordance with 250.32 .

~~**(B)** Feeder Conductors.~~

~~Feeder conductors shall comply with the following:~~

(1) ~~Feeder conductors shall consist of either a listed cord, factory installed in accordance with 550.10(B) , or a permanently installed feeder consisting of four insulated, color-coded conductors that shall be identified by the factory or field marking of the conductors in compliance with 310.6 . Equipment grounding conductors shall not be identified by stripping the insulation.~~

(2) ~~Feeder conductors shall be installed in compliance with 250.32(B) .~~

~~*Exception: An existing feeder installed without an equipment grounding conductor shall be permitted to comply with 250.32(B)(1) Exception No. 1.*~~

~~**(C)** Feeder Capacity.~~

~~Mobile home and manufactured home feeder circuit conductors shall have a capacity not less than the loads supplied, shall have an ampacity of not less than 100 amperes, and shall be permitted to be sized in accordance with 310.12 .~~

Additional Proposed Changes

File Name	Description	Approved
20240826_-_2026_NEC_Article_550_with_FRs_.docx	New Article 550- with FRs from first draft.	

Statement of Problem and Substantiation for Public Comment

During the first draft meeting, CMP-7 supported restructuring of Article 550 to improve usability and a task group was appointed to finalize the revisions proposed in PI-1776. The task group consisted of Ryan Hyer, David Smith, and Dean Hunter. The task group reviewed the initial public input which added “parts” to separate requirements, relocated and renumbered sections, changed the term “power-supply cord” to “feeder assembly” throughout the article to be consistent with the defined term. In addition, the first draft first revisions were added to the document and NEC Style Manual issues were revised. The group reviewed and added the proposed first revisions to Article 550 and made minor grammar updates for clarity and usability.

Related Item

- CI-8794-NFPA 70-2024 • CCN- 275 • Public Input #1776-NFPA 70-2023 [Article 550]

Submitter Information Verification

Submitter Full Name: Dean Hunter
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Submittal Date: Mon Aug 26 17:03:47 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find

value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Part I. General

550.1 Scope.

This article covers ~~the~~ electrical conductors and equipment installed within or on mobile and manufactured homes, ~~the~~ conductors that connect mobile and manufactured homes to a supply of electricity, and ~~the~~ installation of electrical wiring, luminaires, equipment, and appurtenances related to electrical installations within a mobile home park up to the mobile home service-entrance conductors or, if none, the mobile home service equipment.

Informational Note: See ~~NFPA 501-2017~~ 24 CFR 3280, ~~*Standard on Manufactured Housing*, and Part 3280,~~ *Manufactured Home Construction and Safety Standards*, of the Federal Department of Housing and Urban Development for additional information on manufactured housing.

550.2 Listing Requirements.

All electrical materials, devices, appliances, fittings, and other equipment shall be listed and labeled by a qualified testing agency and be connected in an approved manner when installed.

550.4 General Requirements.

550.4(A) In Other Than Mobile Home Parks.

Mobile homes installed in other than mobile home parks shall comply with the ~~provisions~~ requirements of this article.

550.4(B) Connection to Wiring System.

This article shall apply to mobile homes intended for connection to a wiring system rated 120/240 volts, nominal, 3-wire ac, with a grounded neutral conductor.

~~**550.4(C) Listed and Labeled.**~~

~~All electrical materials, devices, appliances, fittings, and other equipment shall be listed and labeled by a qualified testing agency and shall be connected in an approved manner when installed.~~

Part II. Mobile and Manufactured Homes

550.10 Power Supply.

550.10(A) Feeder.

The power supply to the mobile home shall ~~be a feeder assembly~~ consist~~ing~~ of not more than one listed 50-ampere mobile home feeder assembly ~~power-supply cord~~ or a permanently installed feeder.

Exception No. 1: A mobile home that is factory equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a listed mobile home power-supply cord rated 40 amperes.

Exception No. 2: A feeder assembly shall not be required for manufactured homes constructed in accordance with 550.32(B).

550.10(B) Feeder Assembly ~~Power Supply Cord~~.

A feeder assembly ~~f the~~ serving a mobile home ~~has a power-supply cord, it~~ shall be permanently attached to the panelboard's enclosure, or to a junction box permanently connected to the panelboard, with the free end terminating in an attachment plug cap.

Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, a mobile home.

A suitable clamp or the equivalent shall be provided at the panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the feeder assembly ~~power-supply cord~~ is handled in its intended manner.

Commented [HD(1]: FR 8445

Commented [HD(2]: FR- 8444

Commented [HD(3R2]: Relocated the language from 550.4(C)

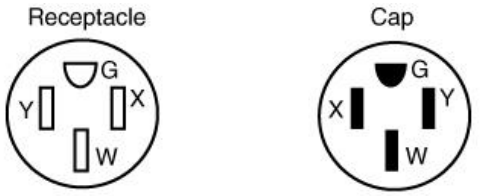
Commented [HD(4]: Changed the heading to include Feeder Assembly. Also, incorporated the changes from FR-8450

The feeder assembly ~~Cord~~ shall be a listed type with four conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the equipment grounding conductor.

550.10(C) Attachment Plug Cap.
The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 550.10(C) and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 550.10(C). ~~It shall be listed, by itself or as part of a power-supply cord~~ It ~~assembly, for the purpose and~~ shall be molded to or installed on the flexible cord so that it is secured tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be oriented so that the grounding member is farthest from the cord.

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

Figure 550.10(C) 50-Ampere, 125/250-Volt Receptacle and Attachment Plug Cap Configurations, 3-Pole, 4-Wire, Grounding-Types, Used for Feeder Assemblies for a ~~Mobile Home Supply Cords~~ and Mobile Home Parks.



125/250-V, 50-A, 3-pole, 4-wire, grounding type

550.10(D) Overall Length of a Feeder Assembly~~Power-Supply Cord~~.
The overall length of the feeder assembly ~~a power-supply cord~~, measured from the end of the cord, including bared leads, to the face of the attachment plug cap shall not be less than 6.4 m (21 ft) and shall not exceed 11 m (36½ ft). The length of the cord from the face of the attachment plug cap to the point where the cord enters the mobile home shall not be less than 6.0 m (20 ft).

550.10(E) Marking.
The feeder assembly ~~power-supply cord~~ shall bear the following marking:

FOR USE WITH MOBILE HOMES — 40 AMPERES

or

FOR USE WITH MOBILE HOMES — 50 AMPERES

550.10(F) Point of Entrance.
The point of entrance of the feeder assembly to the mobile home shall be in the exterior wall, floor, or roof.

550.10(G) Protected.
Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or equivalent. The cord shall be permitted to be installed within the mobile home walls, provided a continuous raceway having a maximum size of 32 mm (1¼ in.) is installed from the branch-circuit panelboard to the underside of the mobile home floor.

550.10(H) Protection Against Corrosion and Mechanical Damage.

Permanent provisions shall be made for the protection of the attachment plug cap of the feeder assembly~~power supply cord~~ and any connector cord assembly or receptacle against corrosion and mechanical damage if such devices are in an exterior location while the mobile home is in transit.

550.10(I) Mast Weatherhead or Raceway.
Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of either of the following:

(1) One mast weatherhead installation, installed in accordance with ~~Part II of~~ Article 230, Part II, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor

(2) ~~A rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, or other raceways identified for the location,~~ Raceways from the disconnecting means in the mobile home to the underside of the mobile home, with provisions for ~~the~~ attachment to a suitable junction box or fitting to the raceway on the underside of the mobile home [with or without conductors as in 550.10(I)(1)] which shall be one of the following:

1. Rigid metal conduit
2. Intermediate metal conduit
3. Rigid polyvinyl chloride conduit
4. Other raceways identified for the location

~~.~~The manufacturer shall provide written installation instructions stating the proper feeder conductor sizes for the raceway and the size of the junction box to be used.

550.11 Disconnecting Means and Branch-Circuit Protective Equipment.
The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a panelboard. If a fused panelboard is used, the maximum fuse size for the mains shall be plainly marked with lettering at least 6 mm (¼ in.) high and visible when fuses are changed.

Where plug fuses and fuseholders are used, they shall be tamper-resistant Type S, enclosed in dead-front fuse panelboards. Electrical panelboards containing circuit breakers shall also be dead-front type.

Informational Note: See 110.22 ~~concerning~~ for identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.

550.11(A) Disconnecting Means.
A single disconnecting means shall be provided in each mobile home consisting of a circuit breaker, or a switch and fuses and its accessories. The disconnecting means shall be ~~-~~installed in a readily accessible location near the point of entrance of the feeder assembly ~~supply cord~~ or conductors into the mobile home. The main circuit breakers or fuses shall be plainly marked "Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding, with sufficient terminals for all grounding conductors. The terminations of the grounded circuit conductors shall be insulated in accordance with 550.18~~16~~(A). The disconnecting equipment shall have a rating not less than the calculated load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of 600 mm (24 in.) from the bottom of such equipment to the floor level of the mobile home.

Informational Note: See 550.16~~20~~(A~~B~~) for ~~information on~~ disconnecting means ~~for~~ of branch circuits designed to energize heating or air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners.

A panelboard shall be rated not less than 50 amperes and employ a 2-pole circuit breaker rated 40 amperes for a 40-ampere feeder assembly ~~supply cord~~, or 50 amperes for a 50-ampere feeder assembly ~~supply cord~~. A panelboard employing a disconnect switch and fuses shall be rated 60 amperes and shall employ a single 2-pole, 60-ampere

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fuseholder with 40- or 50-ampere main fuses for 40- or 50-ampere feeder assembly ~~supply cords~~, respectively. The outside of the panelboard shall be plainly marked with the fuse size.

The panelboard shall be located in an accessible location but shall not be located in a bathroom or a clothes closet. A clear working space at least 750 mm (30 in.) wide and 750 mm (30 in.) in front of the panelboard shall be provided. This space shall extend from the floor to the top of the panelboard.

550.11(B) Branch-Circuit Protective Equipment.
Branch-circuit distribution equipment shall be installed in each mobile home and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

The branch-circuit overcurrent devices shall be rated as follows:

(1) Not more than the circuit conductors; and

(2) Not more than 150 percent of the rating of a single appliance rated 13.3 amperes or more that is supplied by an individual branch circuit; but

(3) Not more than the overcurrent protection size and of the type marked on the air conditioner or other motor-operated appliance.

550.11(C) Two-Pole Circuit Breakers.
Where circuit breakers are provided for branch-circuit protection, 240-volt circuits shall be protected by a 2-pole common or companion trip, or by circuit breakers with identified handle ties.

550.11(D) Electrical Nameplates.
A metal nameplate on the outside adjacent to the feeder assembly entrance shall read as follows:

THIS CONNECTION FOR 120/240-VOLT,
3-POLE, 4-WIRE, 60-HERTZ,
_____ AMPERE SUPPLY

The correct ampere rating shall be marked in the blank space.

Exception: For manufactured homes, the manufacturer shall provide in its written installation instructions or in the data plate the minimum ampere rating of the feeder assembly or, where provided, the service-entrance conductors intended for connection to the manufactured home. The rating provided shall not be less than the minimum load calculated in accordance with ~~550.30~~18.

550.12 Branch Circuits.
The number of branch circuits required shall be determined in accordance with 550.12(A) through (E).

550.12(A) Lighting.
The number of branch circuits shall be based on 33 volt-amperes/m^2 (3 VA/ft^2) times outside dimensions of the mobile home (coupler excluded) divided by 120 volts to determine the number of 15- or 20-ampere lighting area circuits, for example,

[550.12(A)]

$$\frac{3 \times \text{length} \times \text{width}}{120 \times 15 \text{ (or } 20)} = \text{No. of 15- (or 20-) ampere circuits}$$

550.12(B) Small Appliances.

In kitchens, pantries, dining rooms, and breakfast rooms, two or more 20-ampere small-appliance circuits, in addition to the number of circuits required elsewhere in this section, shall be provided for all receptacle outlets required by 550.13(FD) in these rooms. The small appliance Such circuits shall have no other outlets.

Exception No. 1: Receptacle outlets installed solely for the electrical supply and support of an electric clock in any the rooms specified in 550.12(B) shall be permitted.

Exception No. 2: Receptacle outlets installed to provide power for supplemental equipment and lighting on gas-fired ranges, ovens, or counter-mounted cooking units shall be permitted.

Exception No. 3: A single receptacle for refrigeration equipment shall be permitted to be supplied from an individual branch circuit rated 15 amperes or greater.

Countertop receptacle outlets installed in the kitchen shall be supplied by not less than two small-appliance circuit branch circuits, either or both of which shall be permitted to supply receptacle outlets in the kitchen and other locations specified in 550.12(B).

550.12(C) Laundry Area.
Where a laundry area is provided, a 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s). This circuit shall have no other outlets.

550.12(D) General Appliances.
For general appliances such as (Including furnaces, water heaters, ranges, and central or room air conditioners, etc.). Tthere shall be one or more circuits of adequate rating in accordance with the following:

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Informational Note: See Article 440, Parts I through IV for central air conditioning.

(1) The ampere rating of fixed appliances shall be not over 50 percent of the circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on the same circuit.

(2) For fixed appliances on a circuit without lighting outlets, the sum of rated amperes shall not exceed the branch-circuit rating. Motor loads or continuous loads shall not exceed 80 percent of the branch-circuit rating.

(3) The rating of a single cord-and-plug-connected appliance on a circuit having no other outlets shall not exceed 80 percent of the circuit rating.

(4) The rating of a range branch circuit shall be based on the range demand as specified for ranges in 550.3018(B)(5).

550.12(E) Bathrooms.
Bathroom receptacle outlets shall be supplied by at least one 20-ampere branch circuit. Such circuits shall have no outlets other than as provided for in 550.13(GE)(2).

550.13 Receptacle Outlets.

550.13(A) Grounding-Type Receptacle Outlets.
All receptacle outlets shall comply with the following:

(1) Be of grounding type

(2) Be installed according to 406.4

(3) Except where supplying specific appliances, be 15- or 20-ampere, 125-volt, either single or multiple type, and accept parallel-blade attachment plugs

550.13(B) Ground-Fault Circuit Interrupters (GFCIs).
Ground-fault circuit-interrupter protection shall be provided as required in 210.8. ~~(A). In addition, in the following areas within a mobile or manufactured home, GFCI protection is limited to 125-volt, 15- and 20-ampere receptacles or outlets:~~

~~(1) Compartments accessible from outside the unit~~

~~(2) Bathrooms, including receptacles in luminaires~~

~~(3) Kitchens, where receptacles are installed to serve countertop surfaces~~

~~(4) Sinks, where receptacles are installed within 1.8 m (6 ft) from the top inside edge of the sink~~

~~(5) Dishwashers~~

~~Informational Note: See 422.5(A) for information on protection of dishwashers.~~

550.13(C) Arc-Fault Circuit-Interrupter Protection.

All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in mobile homes and manufactured homes shall comply with 210.12

550.13(D) Outdoor Receptacles

Outdoor receptacle outlets shall comply with 406.9.

550.13(E~~C~~) Cord-Connected Fixed Appliance.
A grounding-type receptacle outlet shall be provided for each cord-connected fixed appliance installed.

550.13(F~~D~~) Receptacle Outlets Required.
Except in the bathroom, closet, and hallway areas, receptacle outlets shall be installed at wall spaces 600 mm (2 ft) wide or more so that no point along the floor line is more than 1.8 m (6 ft) measured horizontally from an outlet in that space. In addition, a receptacle outlet shall be installed in the following locations:

(1) Over or adjacent to countertops in the kitchen [at least one on each side of the sink if countertops are on each side and are 300 mm (12 in.) or over in width].

(2) Adjacent to the refrigerator and freestanding gas-range space. A multiple-type receptacle shall be permitted to serve as the outlet for a countertop and a refrigerator.

(3) At countertop spaces for built-in vanities.

(4) At countertop spaces under wall-mounted cabinets.

(5) In the wall at the nearest point to where a bar-type counter attaches to the wall.

(6) In the wall at the nearest point to where a fixed room divider attaches to the wall.

(7) In laundry areas within 1.8 m (6 ft) of the intended location of the laundry appliance(s).

(8) At least one receptacle outlet located outdoors and accessible at grade level and not more than 2.0 m (6½ ft) above grade. A receptacle outlet located in a compartment accessible from the outside of the unit shall be considered an outdoor receptacle.

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(9) At least one receptacle outlet shall be installed in bathrooms within 900 mm (36 in.) of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is a part of a luminaire or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.

550.13(GE) Pipe Heating Cable(s) Receptacle Outlet.
For the connection of pipe heating cable(s), a receptacle outlet shall be located on the underside of the unit as follows:

(1) Within 600 mm (2 ft) of the cold water inlet.

(2) Connected to an interior branch circuit, other than a small-appliance branch circuit. It shall be permitted to use a bathroom receptacle circuit for this purpose.

(3) On a circuit where all of the outlets are on the load side of the GFCI ground-fault circuit interrupter.

(4) This outlet shall not be considered as the receptacle required by 550.13(FD)(8).

550.13(HF) Receptacle Outlets Not Permitted.
Receptacle outlets shall not be permitted in the following locations:

(1) Receptacle outlets shall not be installed within or directly over a bathtub or shower space.

(2) A receptacle shall not be installed in a face-up position in any countertop.

(3) Receptacle outlets shall not be installed above electric baseboard heaters, unless provided for in the listing or manufacturer's instructions.

550.13(IG) Receptacle Outlets Not Required.
Receptacle outlets shall not be required in the following locations:

(1) In the wall space occupied by built-in kitchen or wardrobe cabinets

(2) In the wall space behind doors that can be opened fully against a wall surface

(3) In room dividers of the lattice type that are less than 2.5 m (8 ft) long, not solid, and within 150 mm (6 in.) of the floor

(4) In the wall space afforded by bar-type counters

550.14 Luminaires and Appliances.

550.14(A) Fasten Appliances in Transit.
Means shall be provided to securely fasten appliances when the mobile home is in transit.

Informational Note: (See 550.1816 for provisions on grounding.)

550.14(B) Accessibility.
Every appliance shall be accessible for inspection, service, repair, or replacement without removal of permanent construction.

550.15 Luminaires

550.154(AC) Pendants.

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Listed pendant-type luminaires or pendant cords shall be permitted.

550.154(BD) Bathtub and Shower Luminaires.
Where a luminaire is installed over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type listed for wet locations.

550.15(C) Exterior Mounted Luminaires.

Outdoor luminaires shall be listed for wet locations or outdoor use. Outdoor luminaires located on the underside of the home, under roof extensions or similarly protected locations, shall be listed for use in damp locations.

550.16 Equipment
Outdoor electrical equipment shall be listed for wet locations or outdoor use. Outdoor electrical equipment located on the underside of the home, under roof extensions or similarly protected locations, shall be listed for use in damp locations.

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550.16(A) Outside Heating and Air-Conditioning Equipment.
A mobile home provided with a branch circuit designed to energize outside heating equipment, air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners, shall have such branch-circuit conductors terminate in a listed outlet box, or disconnecting means, located on the outside of the mobile home. A label shall be permanently affixed adjacent to the outlet box and shall contain the following information:

THIS CONNECTION IS FOR HEATING
AND/OR AIR-CONDITIONING EQUIPMENT.
THE BRANCH CIRCUIT IS RATED AT NOT MORE THAN
_____ AMPERES, AT _____ VOLTS, 60 HERTZ,
_____ CONDUCTOR AMPACITY.
A DISCONNECTING MEANS SHALL BE LOCATED
WITHIN SIGHT OF THE EQUIPMENT.

The correct voltage and ampere rating shall be given. The tag shall be not less than 0.51 mm (0.020 in.) thick etched brass, stainless steel, anodized or alclad aluminum, or equivalent. The tag shall not be less than 75 mm by 45 mm (3 in. by 1¼ in.) minimum size.

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550.175 Wiring Methods and Materials.
Except as specifically limited in this section, the wiring methods and materials included in this *Code* shall be used in mobile homes. Where conductors are terminated, they shall be used with equipment listed and identified for the conductor materials.

550.175(A) Nonmetallic Boxes.
Nonmetallic boxes shall be permitted only with nonmetallic cable or nonmetallic raceways.

550.175(B) Nonmetallic Cable Protection.
Nonmetallic cable located 380 mm (15 in.) or less above the floor, if exposed, shall be protected from physical damage by covering boards, guard strips, or raceways. Cable likely to be damaged by stowage shall be so protected in all cases.

550.175(C) Metal-Covered and Nonmetallic Cable Protection.
Metal-covered and nonmetallic cables shall be permitted to pass through the centers of the wide side of 2 by 4 studs. However, they shall be protected where they pass through 2 by 2 studs or at other studs or frames where the cable or armor would be less than 32 mm (1¼ in.) from the inside or outside surface of the studs where the wall covering materials are in contact with the studs. Steel plates on each side of the cable, or a tube, with not less than 1.35 mm (0.053 in.) wall thickness shall be required to protect the cable. These plates or tubes shall be securely held in place.

550.175(D) Metal Faceplates.
Where metal faceplates are used, the installation shall comply with 404.9(B) and 406.6(B).

550.175(E) Installation Requirements.
Where a range, clothes dryer, or other appliance is connected by metal-covered cable or flexible metal conduit, a length of not less than 900 mm (3 ft) of unsupported cable or conduit shall be provided to service the appliance. The cable or flexible metal conduit shall be secured to the wall. Type NM or Type SE cable shall not be used to connect a range or dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch-circuit overcurrent protective device and a junction box or range or dryer receptacle.

550.175(F) Raceways.
All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges. Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a locknut and bushing connection, two locknuts shall be provided, one inside and one outside of the enclosure. Rigid nonmetallic conduit, electrical nonmetallic tubing, or surface raceway shall be permitted. ~~All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges.~~

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550.175(G) Switches.
Switches shall be rated as follows:

(1) For lighting circuits, switches shall be rated not less than 10 amperes, 120 to 125 volts, and in no case less than the connected load.

(2) Switches for motor or other loads shall comply with 404.14.

550.175(H) Under-Chassis Wiring (Exposed to Weather).

550.175(H)(1)
Where outdoor or under-chassis line-voltage (120 volts, nominal, or higher) wiring is exposed, it shall be protected by a conduit or raceway identified for use in wet locations. The conductors shall be listed for use in wet locations.

550.175(H)(2)
Where wiring is exposed to physical damage, it shall be protected by a raceway, conduit, or other means.

550.175(I) Boxes, Fittings, and Cabinets.
Boxes, fittings, and cabinets shall be securely fastened in place and shall be supported from a structural member of the home, either directly or by using a substantial brace.

Exception: Snap-in-type boxes. Boxes provided with special wall or ceiling brackets and wiring devices with integral enclosures that securely fasten to walls or ceilings and are identified for the use shall be permitted without support from a structural member or brace. The testing and approval shall include the wall and ceiling construction systems for which the boxes and devices are intended to be used.

550.175(J) Appliance Terminal Connections.
Appliances having branch-circuit terminal connections that operate at temperatures higher than 60°C (140°F) shall have circuit conductors as described in the following:

(1) Branch-circuit conductors having an insulation suitable for the temperature encountered shall be permitted to be run directly to the appliance.

(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connection to a readily accessible outlet box placed at least 300 mm (1 ft) from the appliance. These conductors shall be in a suitable raceway or Type AC or MC cable of at least 450 mm (18 in.) but not more than 1.8 m (6 ft) in length.

550.175(K) Component Interconnections.
Fittings and connectors that are intended to be concealed at the time of assembly shall be listed and identified for the interconnection of building components. Such fittings and connectors shall be equal to the wiring method employed in insulation, temperature rise, and fault-current withstanding and shall be capable of enduring the vibration and shock occurring in mobile home transportation.

Informational Note: See 550.21~~19~~ for interconnection of multiple section units.

550.18~~6~~ Grounding.
Grounding of both electrical and nonelectrical metal parts in a mobile home shall be through connection to a grounding bus in the mobile home panelboard and shall be connected through the green-colored insulated conductor in the feeder assembly ~~supply cord~~ or the feeder wiring to the grounding bus in the service-entrance equipment located adjacent to the mobile home location. Neither the frame of the mobile home nor the frame of any appliance shall be connected to the grounded circuit conductor in the mobile home. Where the panelboard is the service equipment as permitted by 550.5~~3~~2(B), the neutral conductors and the equipment grounding bus shall be connected.

550.18~~6~~(A) Grounded Conductor.

550.18~~6~~(A)(1) Insulated.
The grounded circuit conductor shall be insulated from the equipment grounding conductors and from equipment enclosures and other grounded parts. The grounded circuit conductor terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the panelboard or in appliances shall be removed and discarded. Where the panelboard is the service equipment as permitted by 550.5~~3~~2(B), the neutral conductors and the equipment grounding bus shall be connected.

550.18~~6~~(A)(2) Connections of Ranges and Clothes Dryers.
Connections of ranges and clothes dryers with 120/240-volt, 3-wire ratings shall be made with 4-conductor cord and 3-pole, 4-wire, grounding-type plugs or by Type AC cable, Type MC cable, or conductors enclosed in flexible metal conduit.

550.18~~6~~(B) Equipment Grounding Means.

550.18~~6~~(B)(1) Feeder Assembly ~~Supply Cord~~ or Permanent Feeder.
The green-colored insulated grounding wire in the feeder assembly ~~supply cord~~ or permanent feeder wiring shall be connected to the grounding bus in the panelboard or disconnecting means.

550.18~~6~~(B)(2) Electrical System.
In the electrical system, all exposed metal parts, enclosures, frames, luminaire canopies, and so forth, shall be effectively bonded to the grounding terminal or enclosure of the panelboard.

550.18~~6~~(B)(3) Cord-Connected Appliances.
Cord-connected appliances, such as washing machines, clothes dryers, and refrigerators, and the electrical system of gas ranges and so forth, shall be grounded by means of a cord with an equipment grounding conductor and grounding-type attachment plug.

550.18~~6~~(C) Bonding of Non-Current-Carrying Metal Parts.

550.18~~6~~(C)(1) Exposed Non-Current-Carrying Metal Parts.
All exposed non-current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboard. A bonding conductor shall be connected between the panelboard and an accessible terminal on the chassis. Chassis of multiple mobile home sections shall be bonded together with a solid copper, 8 AWG minimum, insulated or bare, bonding conductor with terminations in accordance with 250.8 and 250.12.

550.18~~6~~(C)(2) Grounding Terminals.
Grounding terminals shall be of the solderless type and listed as pressure-terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be 8 AWG copper minimum, or equivalent. The bonding conductor shall be routed so as not to be exposed to physical damage.

550.18~~6~~(C)(3) Metallic Piping and Ducts.
Metallic gas, water, and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis [see 550.18~~6~~(C)(1)] by clamps, solderless connectors, or by suitable grounding-type straps.

550.186(C)(4) Metallic Roof and Exterior Coverings.
Any metallic roof and exterior covering shall be considered bonded if the following conditions are met:

(1) The metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners.

(2) The lower panel of the metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two metal straps per mobile home unit or section at opposite ends.

The bonding strap material shall be a minimum of 100 mm (4 in.) in width of material equivalent to the skin or a material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings such as screws and starwashers or equivalent.

550.197 Testing.

550.197(A) Dielectric Strength Test.
The wiring of each mobile home shall be subjected to a 1-minute, 900-volt, dielectric strength test (with all switches closed) between live parts (including neutral conductor) and the mobile home ground. Alternatively, the test shall be permitted to be performed at 1080 volts for 1 second. This test shall be performed after branch circuits are complete and after luminaires or appliances are installed.

Exception: Listed luminaires or appliances shall not be required to withstand the dielectric strength test.

550.197(B) Continuity and Operational Tests and Polarity Checks.
Each mobile home shall be subjected to all of the following:

(1) An electrical continuity test to ensure that all exposed electrically conductive parts are properly bonded

(2) An electrical operational test to demonstrate that all equipment, except water heaters and electric furnaces, is connected and in working order

(3) Electrical polarity checks of permanently wired equipment and receptacle outlets to determine that connections have been properly made

Part III Calculations

550.3018 Calculations.
The following method detailed in 550.30(A) through 550.30(C) shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article 220120, Parts I through IV, and shall be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

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550.3018(A) Lighting, Small-Appliance, and Laundry Load.

550.3018(A)(1) Lighting Volt-Amperes.
Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2)— for example, length × width × 3 = lighting volt-amperes.

550.3018(A)(2) Small-Appliance Volt-Amperes.
Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

550.3018(A)(3) Laundry Area Circuit Volt-Amperes.
1500 volt-amperes.

550.3018(A)(4) Total Volt-Amperes.

Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

550.~~3~~18(A)(5) Net Volt-Amperes.
First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

550.30~~18~~(B) Total Load for Determining Power Supply.
Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.30~~18~~(A)(5).

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere feeder assembly ~~power-supply cord~~ is provided, allow 15 amperes per ~~leg~~ phase for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.30~~18~~(B)(2).

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.30~~18~~(B).

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D, Example D11, for an illustration of the application of this calculation.

Table 550.30~~18~~(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
0–10,000	80 percent of rating
Over 10,000–12,500	8,000
Over 12,500–13,500	8,400
Over 13,500–14,500	8,800
Over 14,500–15,500	9,200
Over 15,500–16,500	9,600

Table 550.3018(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
Over 16,500–17,500	10,000

550.3018(C) Optional Method of Calculation for Lighting and Appliance Load.
The optional method for calculating lighting and appliance load shown in 220.82 120.82 shall be permitted.

Part IV Interconnected Sections of Mobile or Manufactured Home Units

550.4119 Interconnection of Multiple-Section Mobile or Manufactured Home Units.

550.4119(A) Wiring Methods.
Approved and listed fixed-type wiring methods shall be used to join portions of a circuit that must be electrically joined and are located in adjacent sections after the home is installed on its support foundation. The circuit's junction shall be accessible for disassembly when the home is prepared for relocation.

Informational Note: See 550.175(K) for component interconnections.

550.4119(B) Disconnecting Means.
Expandable or multiunit manufactured homes, not having permanently installed feeders, that are to be moved from one location to another shall be permitted to have disconnecting means with branch-circuit protective equipment in each unit when so located that after assembly or joining together of units, the requirements of 550.10 will be met.

~~**550.20 Outdoor Outlets, Luminaires, Air-Cooling Equipment, and So Forth.**~~

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~~**550.20(A) Listed for Outdoor Use.**~~
~~Outdoor luminaires and equipment shall be listed for wet locations or outdoor use. Outdoor receptacles shall comply with 406.9. Where located on the underside of the home or located under roof extensions or similarly protected locations, outdoor luminaires and equipment shall be listed for use in damp locations.~~

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~~**550.20(B) Outside Heating Equipment, Air-Conditioning Equipment, or Both.**~~
~~A mobile home provided with a branch circuit designed to energize outside heating equipment, air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners, shall have such branch-circuit conductors terminate in a listed outlet box, or disconnecting means, located on the outside of the mobile home. A label shall be permanently affixed adjacent to the outlet box and shall contain the following information:~~

~~THIS CONNECTION IS FOR HEATING~~
~~AND/OR AIR-CONDITIONING EQUIPMENT.~~
~~THE BRANCH CIRCUIT IS RATED AT NOT MORE THAN~~
~~_____ AMPERES, AT _____ VOLTS, 60 HERTZ,~~
~~_____ CONDUCTOR AMPACITY.~~
~~A DISCONNECTING MEANS SHALL BE LOCATED~~
~~WITHIN SIGHT OF THE EQUIPMENT.~~

~~The correct voltage and ampere rating shall be given. The tag shall be not less than 0.51 mm (0.020 in.) thick etched brass, stainless steel, anodized or alclad aluminum, or equivalent. The tag shall not be less than 75 mm by 45 mm (3 in. by 1¾ in.) minimum size.~~

~~**550.25 Arc-Fault Circuit-Interrupter Protection.**~~
~~All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in mobile homes and manufactured homes shall comply with 210.12~~

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Part VIII. Services and Feeders

550.530 Distribution System.
The mobile home park secondary electrical distribution system to mobile home lots shall be single-phase, 120/240 volts, nominal.

550.531 Allowable Demand Factors.
Park electrical wiring systems shall be calculated (at 120/240 volts) on the larger of the following:

(1) 16,000 volt-amperes for each mobile home lot

(2) The load calculated in accordance with 550.3018 for the largest typical mobile home that each lot will accept

It shall be permissible to calculate the feeder or service load in accordance with Table 550.531. No demand factor shall be allowed for any other load, except as provided in this *Code*.

Table 550.531 Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
1	100
2	55
3	44
4	39
5	33
6	29
7–9	28
10–12	27
13–15	26
16–21	25

Table 550.531 Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
22–40	24
41–60	23
61 and over	22

550.532 Service Equipment.

550.532(A) Mobile Home Service Equipment.
The mMobile home service equipment shall not be mounted in or on the mobile homes. The service equipment shall be rated not less than that required in accordance with by 550.532(C), mounted in a readily accessible outdoor location, and mounted within sight from the mobile home it serves. The installation of the service equipment shall comply with Article 230, The mobile home service disconnect shall be permitted to be used as the emergency disconnect in accordance with 230.70(A)(2) and 230.70(B)(2)230.85.

550.532(B) Manufactured Home Service Equipment.
The mManufactured home service equipment shall be permitted to be installed in or on a manufactured homes, provided that if all of the following conditions are met:

(1) The manufacturer shall include in its written installation instructions information indicating that the home shall be secured in place by an anchoring system or installed on and secured to a permanent foundation.

(2) The installation of the service shall comply with Article 230 Part I through Part VII of Article 230.

(3) Means shall be provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure.

(4) Bonding and grounding of the service shall comply be in accordance with Article 250, Part I through Part V of Article 250.

(5) The manufacturer shall include in its written installation instructions one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250.

(6) The minimum size grounding electrode conductor shall be specified in the instructions.

(7) A warning label shall be mounted on or adjacent to the service equipment. The label shall meet meeting the requirements in 110.21(B) and shall stateing the following, shall be mounted on or adjacent to the service equipment:

WARNING
DO NOT PROVIDE ELECTRICAL POWER
UNTIL THE GROUNDING ELECTRODE(S)
IS INSTALLED AND CONNECTED
(SEE INSTALLATION INSTRUCTIONS).

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Where the service equipment is not installed in or on the unit, the installation shall comply with the other requirements of this section.

550.532(C) Rating.
Mobile home service equipment shall be rated at not less than 100 amperes at 120/240 volts, and provisions shall be made for connecting a mobile home feeder assembly by a permanent wiring method. Power outlets used as mobile home service equipment shall also be permitted to contain receptacles rated up to 50 amperes with appropriate overcurrent protection. Fifty-ampere receptacles shall conform to the configuration shown in Figure 550.10(C).

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

550.532(D) Additional Outside Electrical Equipment.
Means for connecting a mobile home accessory building or structure or additional electrical equipment located outside a mobile home by a fixed wiring method shall be provided in either the mobile home service equipment or the local external disconnecting means permitted in 550.532(A).

550.52 (E) Replacement Home.

When existing service equipment is reconnected to a replacement mobile or manufactured home, the service shall be provided with a surge protective device in accordance with 230.67.

550.532(~~E~~F) Additional Receptacles on Service Equipment.
Receptacles located outside ~~a~~ mobile or manufactured homes shall be provided with GFCI ~~ground-fault circuit-interrupter~~ protection as specified by 210.8(A). Where receptacles provide power to ~~a~~ mobile or manufactured homes in accordance with 550.10, GFCI ~~ground-fault circuit-interrupter~~ protection shall not be required.

550.532(~~F~~G) Mounting Height.
Outdoor mobile home disconnecting means shall be installed so the bottom of the enclosure containing the disconnecting means is not less than 600 mm (2 ft) above finished grade or working platform. The disconnecting means shall be installed so that the center of the grip of the operating handle, when in the highest position, is not more than 2.0 m (6 ft 7 in.) above the finished grade or working platform.

550.532(~~G~~H) Marking.
Where a 125/250-volt receptacle is used in mobile home service equipment, the service equipment shall be marked as follows:

TURN DISCONNECTING SWITCH OR
CIRCUIT BREAKER OFF BEFORE INSERTING
OR REMOVING PLUG. PLUG MUST BE FULLY
INSERTED OR REMOVED.

The marking shall be located on the service equipment adjacent to the receptacle outlet.

550.533 Feeder.

550.533(A) Feeder Equipment.
The feeder assembly, including the disconnecting means, shall not be mounted in or on the mobile home. A manufactured home feeder disconnecting means shall be permitted to be installed in or on the manufactured home in accordance with the requirements of 550.532(B). The feeder equipment shall be rated not less than that required in 550.532(C), mounted in a readily accessible outdoor location, and within sight from the mobile home or manufactured home it serves. Grounding of the disconnecting means shall be in accordance with 250.532.

550.533(B) Feeder Conductors.
Feeder conductors shall comply with the following:

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(1) Feeder conductors shall consist of either a listed cord, factory installed in accordance with 550.10(B), or a permanently installed feeder consisting of four insulated, color-coded conductors that shall be identified by the factory or field marking of the conductors in compliance with 310.6. Equipment grounding conductors shall not be identified by stripping the insulation.

(2) Feeder conductors shall be installed in compliance with 250.32(B).

Exception: An existing feeder installed without an equipment grounding conductor shall be permitted to comply with 250.32(B)(1) Exception No. 1.

550.5~~3~~3(C) Feeder Capacity.
Mobile home and manufactured home feeder circuit conductors shall have a capacity not less than the loads supplied, shall have an ampacity of not less than 100 amperes, and shall be permitted to be sized in accordance with 310.12.

Public Comment No. 560-NFPA 70-2024 [Article 550]

Article 550 Mobile Homes, Manufactured Homes, and Mobile Home Parks

Part I. General

550.1 Scope.

This article covers electrical conductors and equipment installed within or on mobile and manufactured homes, conductors that connect mobile and manufactured homes to a supply of electricity, and installation of electrical wiring, luminaires, equipment, and appurtenances related to electrical installations within a mobile home park up to the mobile home service-entrance conductors or, if none, the mobile home service equipment.

> Informational Note: See 24 CFR 3280, *Manufactured Home Construction and Safety Standards*, of the Federal Department of Housing and Urban Development for additional information on manufactured housing.

550.2 Listing Requirements.

All electrical materials, devices, appliances, fittings, and other equipment shall be listed and labeled by a qualified testing agency and be connected in an approved manner when installed.

550.4 General Requirements.

(A) In Other Than Mobile Home Parks.

Mobile homes installed in other than mobile home parks shall comply with the requirements of this article.

(B) Connection to Wiring System.

This article shall apply to mobile homes intended for connection to a wiring system rated 120/240 volts, nominal, 3-wire ac, with a grounded neutral conductor.

Part II. Mobile and Manufactured Homes

550.10 Power Supply.

(A) Feeder.

The power supply to the mobile home shall be a feeder assembly consisting of not more than one listed 50-ampere mobile home power-supply cord or a permanently installed feeder.

Exception No. 1: A mobile home that is factory equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a listed mobile home power-supply cord rated 40 amperes.

Exception No. 2: A feeder assembly shall not be required for manufactured homes constructed in accordance with 550.32(B).

(B) Power-Supply Cord.

If the mobile home has a power-supply cord, it shall be permanently attached to the panelboard's enclosure, or to a junction box permanently connected to the panelboard, with the free end terminating in an attachment plug cap.

Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, mobile homes.

A suitable clamp or the equivalent shall be provided at the panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.

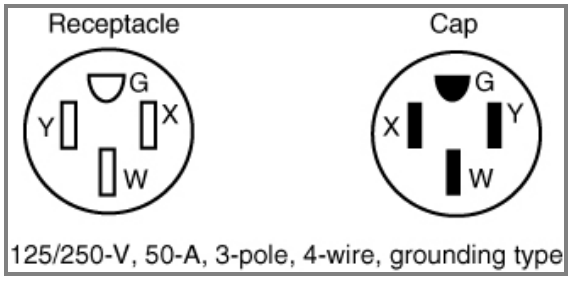
Cords shall be a listed type with four conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the equipment grounding conductor.

(C) Attachment Plug Cap.

The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 550.10(C) and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 550.10(C). It shall be listed, by itself or as part of a power-supply cord assembly, for the purpose and shall be molded to or installed on the flexible cord so that it is secured tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be oriented so that the grounding member is farthest from the cord.

> Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

Figure 550.10(C) 50-Ampere, 125/250-Volt Receptacle and Attachment Plug Cap Configurations, 3-Pole, 4-Wire, Grounding-Types, Used for Mobile Home Supply Cords and Mobile Home Parks.



(D) Overall Length of a Power-Supply Cord.

The overall length of a power-supply cord, measured from the end of the cord, including bared leads, to the face of the attachment plug cap shall not be less than 6.4 m (21 ft) and shall not exceed 11 m (36½ ft). The length of the cord from the face of the attachment plug cap to the point where the cord enters the mobile home shall not be less than 6.0 m (20 ft).

(E) Marking.

The power-supply cord shall bear the following marking:

FOR USE WITH MOBILE HOMES — 40 AMPERES

or

FOR USE WITH MOBILE HOMES — 50 AMPERES

(F) Point of Entrance.

The point of entrance of the feeder assembly to the mobile home shall be in the exterior wall, floor, or roof.

(G) Protected.

Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or equivalent. The cord shall be permitted to be installed within the mobile home walls, provided a continuous raceway having a maximum size of 32 mm (1¼ in.) is installed from the branch-circuit panelboard to the underside of the mobile home floor.

(H) Protection Against Corrosion and Mechanical Damage.

Permanent provisions shall be made for the protection of the attachment plug cap of the power-supply cord and any connector cord assembly or receptacle against corrosion and mechanical damage if such devices are in an exterior location while the mobile home is in transit.

(I) Mast Weatherhead or Raceway.

Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of either of the following:

(1) One mast weatherhead installation, installed in accordance with Article 230, Part II, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor.

(2) Raceways from the disconnecting means in the mobile home to the underside of the mobile home, with provisions for attachment to a suitable junction box or fitting to the raceway on the underside of the mobile home [with or without conductors as in 550.10(I)(1)], which shall be one of the following:

a. Rigid metal conduit

b. Intermediate metal conduit

c. Rigid polyvinyl chloride conduit

d. Other raceways identified for the location

The manufacturer shall provide written installation instructions stating the proper feeder conductor sizes for the raceway and the size of the junction box to be used.

550.11 Disconnecting Means and Branch-Circuit Protective Equipment.

The branch-circuit equipment shall be permitted to be combined with the disconnecting means as a single assembly. Such a combination shall be permitted to be designated as a panelboard. If a fused panelboard is used, the maximum fuse size for the mains shall be plainly marked with lettering at least 6 mm (¼ in.) high and visible when fuses are changed.

Where plug fuses and fuseholders are used, they shall be tamper-resistant Type S, enclosed in dead-front fuse panelboards. Electrical panelboards containing circuit breakers shall also be dead-front type.

> Informational Note: See 110.22 concerning identification of each disconnecting means and each service, feeder, or branch circuit at the point where it originated and the type marking needed.

(A) Disconnecting Means.

A single disconnecting means shall be provided in each mobile home consisting of a circuit breaker, or a switch and fuses and its accessories installed in a readily accessible location near the point of entrance of the supply cord or conductors into the mobile home. The main circuit breakers or fuses shall be plainly marked "Main." This equipment shall contain a solderless type of grounding connector or bar for the purposes of grounding, with sufficient terminals for all grounding conductors. The terminations of the grounded circuit conductors shall be insulated in accordance with 550.16(A). The disconnecting equipment shall have a rating not less than the calculated load. The distribution equipment, either circuit breaker or fused type, shall be located a minimum of 600 mm (24 in.) from the bottom of such equipment to the floor level of the mobile home.

> Informational Note: See 550.20(B) for information on disconnecting means for branch circuits designed to energize heating or air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners.

A panelboard shall be rated not less than 50 amperes and employ a 2-pole circuit breaker rated 40 amperes for a 40-ampere supply cord, or 50 amperes for a 50-ampere supply cord. A panelboard employing a disconnect switch and fuses shall be rated 60 amperes and shall employ a single 2-pole, 60-ampere fuseholder with 40- or 50-ampere main fuses for 40- or 50-ampere supply cords, respectively. The outside of the panelboard shall be plainly marked with the fuse size.

The panelboard shall be located in an accessible location but shall not be located in a bathroom or a clothes closet. A clear working space at least 750 mm (30 in.) wide and 750 mm (30 in.) in front of the panelboard shall be provided. This space shall extend from the floor to the top of the panelboard.

(B) Branch-Circuit Protective Equipment.

Branch-circuit distribution equipment shall be installed in each mobile home and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

The branch-circuit overcurrent devices shall be rated as follows:

(1) Not more than the circuit conductors; and

(2) Not more than 150 percent of the rating of a single appliance rated 13.3 amperes or more that is supplied by an individual branch circuit; but

(3) Not more than the overcurrent protection size and of the type marked on the air conditioner or other motor-operated appliance.

(C) Two-Pole Circuit Breakers.

Where circuit breakers are provided for branch-circuit protection, 240-volt circuits shall be protected by a 2-pole common or companion trip, or by circuit breakers with identified handle ties.

(D) Electrical Nameplates.

A metal nameplate on the outside adjacent to the feeder assembly entrance shall read as follows:

THIS CONNECTION FOR 120/240-VOLT,
3-POLE, 4-WIRE, 60-HERTZ,
_____ AMPERE SUPPLY

The correct ampere rating shall be marked in the blank space.

Exception: For manufactured homes, the manufacturer shall provide in its written installation instructions or in the data plate the minimum ampere rating of the feeder assembly or, where provided, the service-entrance conductors intended for connection to the manufactured home. The rating provided shall not be less than the minimum load calculated in accordance with 550.18.

550.12 Branch Circuits.

The number of branch circuits required shall be determined in accordance with 550.12(A) through (E).

(A) Lighting.

The number of branch circuits shall be based on 33 volt-amperes/m^2 (3 VA/ft^2) times outside dimensions of the mobile home (coupler excluded) divided by 120 volts to determine the number of 15- or 20-ampere lighting area circuits, for example,

$$\frac{3 \times \text{length} \times \text{width}}{120 \times 15 \text{ (or } 20)} = \text{No. of 15- (or 20-) ampere circuits} \quad \textbf{[550.12(A)]}$$

(B) Small Appliances.

In kitchens, pantries, dining rooms, and breakfast rooms, two or more 20-ampere small-appliance circuits, in addition to the number of circuits required elsewhere in this section, shall be provided for all receptacle outlets required by 550.13(D) in these rooms. Such circuits shall have no other outlets.

Exception No. 1: Receptacle outlets installed solely for the electrical supply and support of an electric clock in any the rooms specified in 550.12(B) shall be permitted.

Exception No. 2: Receptacle outlets installed to provide power for supplemental equipment and lighting on gas-fired ranges, ovens, or counter-mounted cooking units shall be permitted.

Exception No. 3: A single receptacle for refrigeration equipment shall be permitted to be supplied from an individual branch circuit rated 15 amperes or greater.

Countertop receptacle outlets installed in the kitchen shall be supplied by not less than two small-appliance circuit branch circuits, either or both of which shall be permitted to supply receptacle outlets in the kitchen and other locations specified in 550.12(B).

(C) Laundry Area.

Where a laundry area is provided, a 20-ampere branch circuit shall be provided to supply the laundry receptacle outlet(s). This circuit shall have no other outlets.

(D) General Appliances.

For general appliances, such as furnaces, water heaters, ranges, and central or room air conditioners, there shall be one or more circuits of adequate rating in accordance with the following:

Informational Note: See Article 440, Parts I through VI, for central air conditioning.

(1) The ampere rating of fixed appliances shall be not over 50 percent of the circuit rating if lighting outlets (receptacles, other than kitchen, dining area, and laundry, considered as lighting outlets) are on the same circuit.

(2) For fixed appliances on a circuit without lighting outlets, the sum of rated amperes shall not exceed the branch-circuit rating. Motor loads or continuous loads shall not exceed 80 percent of the branch-circuit rating.

(3) The rating of a single cord- and plug-connected appliance on a circuit having no other outlets shall not exceed 80 percent of the circuit rating.

(4) The rating of a range branch circuit shall be based on the range demand as specified for ranges in 550.18(B)(5).

(E) Bathrooms.

Bathroom receptacle outlets shall be supplied by at least one 20-ampere branch circuit. Such circuits shall have no outlets other than as provided for in 550.13(E)(2).

550.13 Receptacle Outlets.

(A) Grounding-Type Receptacle Outlets.

All receptacle outlets shall comply with the following:

(1) Be of grounding type

(2) Be installed according to 406.12

(3) Except where supplying specific appliances, be 15- or 20-ampere, 125-volt, either single or multiple type, and accept parallel-blade attachment plugs

(B) Ground-Fault Circuit Interrupters (GFCIs).

Ground-fault circuit-interrupter protection shall be provided as required in 210.8.

(C) Cord-Connected Fixed Appliance.

A grounding-type receptacle outlet shall be provided for each cord-connected fixed appliance installed.

(D) Receptacle Outlets Required.

Except in the bath, closet, and hallway areas, receptacle outlets shall be installed at wall spaces 600 mm (2 ft) wide or more so that no point along the floor line is more than 1.8 m (6 ft) measured horizontally from an outlet in that space. In addition, a receptacle outlet shall be installed in the following locations:

(1) Over or adjacent to countertops in the kitchen [at least one on each side of the sink if countertops are on each side and are 300 mm (12 in.) or over in width].

(2) Adjacent to the refrigerator and freestanding gas-range space. A multiple-type receptacle shall be permitted to serve as the outlet for a countertop and a refrigerator.

(3) At countertop spaces for built-in vanities.

(4) At countertop spaces under wall-mounted cabinets.

(5) In the wall at the nearest point to where a bar-type counter attaches to the wall.

(6) In the wall at the nearest point to where a fixed room divider attaches to the wall.

(7) In laundry areas within 1.8 m (6 ft) of the intended location of the laundry appliance(s).

(8) At least one receptacle outlet located outdoors and accessible at grade level and not more than 2.0 m (6½ ft) above grade. A receptacle outlet located in a compartment accessible from the outside of the unit shall be considered an outdoor receptacle.

(9) At least one receptacle outlet shall be installed in bathrooms within 900 mm (36 in.) of the outside edge of each basin. The receptacle outlet shall be located above or adjacent to the basin location. This receptacle shall be in addition to any receptacle that is a part of a luminaire or appliance. The receptacle shall not be enclosed within a bathroom cabinet or vanity.

(E) Pipe Heating Cable(s) Outlet.

For the connection of pipe heating cable(s), a receptacle outlet shall be located on the underside of the unit as follows:

(1) Within 600 mm (2 ft) of the cold water inlet.

(2) Connected to an interior branch circuit, other than a small-appliance branch circuit. It shall be permitted to use a bathroom receptacle circuit for this purpose.

(3) On a circuit where all of the outlets are on the load side of the ground-fault circuit interrupter.

(4) This outlet shall not be considered as the receptacle required by 505.30(B)(2).

(F) Receptacle Outlets Not Permitted.

Receptacle outlets shall not be permitted in the following locations:

(1) Receptacle outlets shall not be installed within or directly over a bathtub or shower space.

(2) A receptacle shall not be installed in a face-up position in any countertop.

(3) Receptacle outlets shall not be installed above electric baseboard heaters, unless provided for in the listing or manufacturer's instructions.

(G) Receptacle Outlets Not Required.

Receptacle outlets shall not be required in the following locations:

(1) In the wall space occupied by built-in kitchen or wardrobe cabinets

(2) In the wall space behind doors that can be opened fully against a wall surface

(3) In room dividers of the lattice type that are less than 2.5 m (8 ft) long, not solid, and within 150 mm (6 in.) of the floor

(4) In the wall space afforded by bar-type counters

550.14 Luminaires and Appliances.

(A) Fasten Appliances in Transit.

Means shall be provided to securely fasten appliances when the mobile home is in transit. (See 550.16 for provisions on grounding.)

(B) Accessibility.

Every appliance shall be accessible for inspection, service, repair, or replacement without removal of permanent construction.

(C) Pendants.

Listed pendant-type luminaires or pendant cords shall be permitted.

(D) Bathtub and Shower Luminaires.

Where a luminaire is installed over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type listed for wet locations.

550.15 Wiring Methods and Materials.

Except as specifically limited in this section, the wiring methods and materials included in this *Code* shall be used in mobile homes. Where conductors are terminated, they shall be used with equipment listed and identified for the conductor materials.

(A) Nonmetallic Boxes.

Nonmetallic boxes shall be permitted only with nonmetallic cable or nonmetallic raceways.

(B) Nonmetallic Cable Protection.

Nonmetallic cable located 380 mm (15 in.) or less above the floor, if exposed, shall be protected from physical damage by covering boards, guard strips, or raceways. Cable likely to be damaged by stowage shall be so protected in all cases.

(C) Metal-Covered and Nonmetallic Cable Protection.

Metal-covered and nonmetallic cables shall be permitted to pass through the centers of the wide side of 2 by 4 studs. However, they shall be protected where they pass through 2 by 2 studs or at other studs or frames where the cable or armor would be less than 32 mm (1¼ in.) from the inside or outside surface of the studs where the wall covering materials are in contact with the studs. Steel plates on each side of the cable, or a tube, with not less than 1.35 mm (0.053 in.) wall thickness shall be required to protect the cable. These plates or tubes shall be securely held in place.

(D) Metal Faceplates.

Where metal faceplates are used, the installation shall comply with 406.40(B) and 406.16(B).

(E) Installation Requirements.

Where a range, clothes dryer, or other appliance is connected by metal-covered cable or flexible metal conduit, a length of not less than 900 mm (3 ft) of unsupported cable or conduit shall be provided to service the appliance. The cable or flexible metal conduit shall be secured to the wall. Type NM or Type SE cable shall not be used to connect a range or dryer. This shall not prohibit the use of Type NM or Type SE cable between the branch-circuit overcurrent protective device and a junction box or range or dryer receptacle.

(F) Raceways.

All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges. Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a locknut and bushing connection, two locknuts shall be provided, one inside and one outside of the enclosure.

(G) Switches.

Switches shall be rated as follows:

(1) For lighting circuits, switches shall be rated not less than 10 amperes, 120 to 125 volts, and in no case less than the connected load.

(2) Switches for motor or other loads shall comply with 406.46.

(H) Under-Chassis Wiring (Exposed to Weather).

(1)

Where outdoor or under-chassis line-voltage (120 volts, nominal, or higher) wiring is exposed, it shall be protected by a conduit or raceway identified for use in wet locations. The conductors shall be listed for use in wet locations.

(2)

Where wiring is exposed to physical damage, it shall be protected by a raceway, conduit, or other means.

(I) Boxes, Fittings, and Cabinets.

Boxes, fittings, and cabinets shall be securely fastened in place and shall be supported from a structural member of the home, either directly or by using a substantial brace.

Exception: Snap-in-type boxes. Boxes provided with special wall or ceiling brackets and wiring devices with integral enclosures that securely fasten to walls or ceilings and are identified for the use shall be permitted without support from a structural member or brace. The testing and approval shall include the wall and ceiling construction systems for which the boxes and devices are intended to be used.

(J) Appliance Terminal Connections.

Appliances having branch-circuit terminal connections that operate at temperatures higher than 60°C (140°F) shall have circuit conductors as described in the following:

(1) Branch-circuit conductors having an insulation suitable for the temperature encountered shall be permitted to be run directly to the appliance.

(2) Conductors having an insulation suitable for the temperature encountered shall be run from the appliance terminal connection to a readily accessible outlet box placed at least 300 mm (1 ft) from the appliance. These conductors shall be in a suitable raceway or Type AC or MC cable of at least 450 mm (18 in.) but not more than 1.8 m (6 ft) in length.

(K) Component Interconnections.

Fittings and connectors that are intended to be concealed at the time of assembly shall be listed and identified for the interconnection of building components. Such fittings and connectors shall be equal to the wiring method employed in insulation, temperature rise, and fault-current withstanding and shall be capable of enduring the vibration and shock occurring in mobile home transportation.

Informational Note: See 550.19 for interconnection of multiple section units.

550.16 Grounding.

Grounding of both electrical and nonelectrical metal parts in a mobile home shall be through connection to a grounding bus in the mobile home panelboard and shall be connected through the green-colored insulated conductor in the supply cord or the feeder wiring to the grounding bus in the service-entrance equipment located adjacent to the mobile home location. Neither the frame of the mobile home nor the frame of any appliance shall be connected to the grounded circuit conductor in the mobile home. Where the panelboard is the service equipment as permitted by 550.32(B), the neutral conductors and the equipment grounding bus shall be connected.

(A) Grounded Conductor.

(1) Insulated.

The grounded circuit conductor shall be insulated from the equipment grounding conductors and from equipment enclosures and other grounded parts. The grounded circuit conductor terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the panelboard or in appliances shall be removed and discarded. Where the panelboard is the service equipment as permitted by 550.32(B), the neutral conductors and the equipment grounding bus shall be connected.

(2) Connections of Ranges and Clothes Dryers.

Connections of ranges and clothes dryers with 120/240-volt, 3-wire ratings shall be made with 4-conductor cord and 3-pole, 4-wire, grounding-type plugs or by Type AC cable, Type MC cable, or conductors enclosed in flexible metal conduit.

(B) Equipment Grounding Means.

(1) Supply Cord or Permanent Feeder.

The green-colored insulated grounding wire in the supply cord or permanent feeder wiring shall be connected to the grounding bus in the panelboard or disconnecting means.

(2) Electrical System.

In the electrical system, all exposed metal parts, enclosures, frames, luminaire canopies, and so forth, shall be effectively bonded to the grounding terminal or enclosure of the panelboard.

(3) Cord-Connected Appliances.

Cord-connected appliances, such as washing machines, clothes dryers, and refrigerators, and the electrical system of gas ranges and so forth, shall be grounded by means of a cord with an equipment grounding conductor and grounding-type attachment plug.

(C) Bonding of Non-Current-Carrying Metal Parts.

(1) Exposed Non-Current-Carrying Metal Parts.

All exposed non-current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboard. A bonding conductor shall be connected between the panelboard and an accessible terminal on the chassis. Chassis of multiple mobile home sections shall be bonded together with a solid copper, 8 AWG minimum, insulated or bare, bonding conductor with terminations in accordance with 250.8 and 250.12.

(2) Grounding Terminals.

Grounding terminals shall be of the solderless type and listed as pressure-terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be 8 AWG copper minimum, or equivalent. The bonding conductor shall be routed so as not to be exposed to physical damage.

(3) Metallic Piping and Ducts.

Metallic gas, water, and waste pipes and metallic air-circulating ducts shall be considered bonded if they are connected to the terminal on the chassis [see 550.16(C)(1)] by clamps, solderless connectors, or by suitable grounding-type straps.

(4) Metallic Roof and Exterior Coverings.

Any metallic roof and exterior covering shall be considered bonded if the following conditions are met:

(1) The metal panels overlap one another and are securely attached to the wood or metal frame parts by metallic fasteners.

(2) The lower panel of the metallic exterior covering is secured by metallic fasteners at a cross member of the chassis by two metal straps per mobile home unit or section at opposite ends.

The bonding strap material shall be a minimum of 100 mm (4 in.) in width of material equivalent to the skin or a material of equal or better electrical conductivity. The straps shall be fastened with paint-penetrating fittings such as screws and starwashers or equivalent.

550.17 Testing.

(A) Dielectric Strength Test.

The wiring of each mobile home shall be subjected to a 1-minute, 900-volt, dielectric strength test (with all switches closed) between live parts (including neutral conductor) and the mobile home ground. Alternatively, the test shall be permitted to be performed at 1080 volts for 1 second. This test shall be performed after branch circuits are complete and after luminaires or appliances are installed.

Exception: Listed luminaires or appliances shall not be required to withstand the dielectric strength test.

(B) Continuity and Operational Tests and Polarity Checks.

Each mobile home shall be subjected to all of the following:

(1) An electrical continuity test to ensure that all exposed electrically conductive parts are properly bonded

(2) An electrical operational test to demonstrate that all equipment, except water heaters and electric furnaces, is connected and in working order

(3) Electrical polarity checks of permanently wired equipment and receptacle outlets to determine that connections have been properly made

550.18 Calculations.

The method detailed in 550.18(A) through 550.18(C) shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article 120, Parts I through IV, and be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

(A) Lighting, Small-Appliance, and Laundry Load.

(1) Lighting Volt-Amperes.

Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2)— for example, length × width × 3 = lighting volt-amperes.

(2) Small-Appliance Volt-Amperes.

Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

(3) Laundry Area Circuit Volt-Amperes.

1500 volt-amperes.

(4) Total Volt-Amperes.

Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

(5) Net Volt-Amperes.

First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

(B) Total Load for Determining Power Supply.

Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.18(A)(5).

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere power-supply cord is provided, allow 15 amperes per leg for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.18(B)(2).

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.18(B).

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D, Example D11, for an illustration of the application of this calculation.

Table 550.18(B) Freestanding Range Load

Nameplate Rating (watts)	Use (volt-amperes)
0–10,000	80 percent of rating
Over 10,000–12,500	8,000
Over 12,500–13,500	8,400
Over 13,500–14,500	8,800
Over 14,500–15,500	9,200
Over 15,500–16,500	9,600
Over 16,500–17,500	10,000

(C) Optional Method of Calculation for Lighting and Appliance Load.

The optional method for calculating lighting and appliance load shown in 120.82 shall be permitted.

550.19 Interconnection of Multiple-Section Mobile or Manufactured Home Units.

(A) Wiring Methods.

Approved and listed fixed-type wiring methods shall be used to join portions of a circuit that must be electrically joined and are located in adjacent sections after the home is installed on its support foundation. The circuit's junction shall be accessible for disassembly when the home is prepared for relocation.

Informational Note: See 550.15(K) for component interconnections.

(B) Disconnecting Means.

Expandable or multiunit manufactured homes, not having permanently installed feeders, that are to be moved from one location to another shall be permitted to have disconnecting means with branch-circuit protective equipment in each unit when so located that after assembly or joining together of units, the requirements of 550.10 will be met.

550.20 Outdoor Outlets, Luminaires, Air-Cooling Equipment, and So Forth.

(A) Listed for Outdoor Use.

Outdoor luminaires and equipment shall be listed for wet locations or outdoor use. Outdoor receptacles shall comply with 406.9. Where located on the underside of the home or located under roof extensions or similarly protected locations, outdoor luminaires and equipment shall be listed for use in damp locations.

(B) Outside Heating Equipment, Air-Conditioning Equipment, or Both.

A mobile home provided with a branch circuit designed to energize outside heating equipment, air-conditioning equipment, or both, located outside the mobile home, other than room air conditioners, shall have such branch-circuit conductors terminate in a listed outlet box, or disconnecting means, located on the outside of the mobile home. A label shall be permanently affixed adjacent to the outlet box and shall contain the following information:

THIS CONNECTION IS FOR HEATING
AND/OR AIR-CONDITIONING EQUIPMENT.
THE BRANCH CIRCUIT IS RATED AT NOT MORE THAN
_____ AMPERES, AT _____ VOLTS, 60 HERTZ,
_____ CONDUCTOR AMPACITY.
A DISCONNECTING MEANS SHALL BE LOCATED
WITHIN SIGHT OF THE EQUIPMENT.

The correct voltage and ampere rating shall be given. The tag shall be not less than 0.51 mm (0.020 in.) thick etched brass, stainless steel, anodized or alclad aluminum, or equivalent. The tag shall not be less than 75 mm by 45 mm (3 in. by 1¾ in.) minimum size.

550.25 Arc-Fault Circuit-Interrupter Protection.

All 120-volt, single-phase, 15- and 20-ampere branch circuits supplying outlets or devices installed in mobile homes and manufactured homes shall comply with 210.12

Part III. Services and Feeders

550.30 Distribution System.

The mobile home park secondary electrical distribution system to mobile home lots shall be single-phase, 120/240 volts, nominal.

550.31 Allowable Demand Factors.

Park electrical wiring systems shall be calculated (at 120/240 volts) on the larger of the following:

(1) 16,000 volt-amperes for each mobile home lot

(2) The load calculated in accordance with 550.18 for the largest typical mobile home that each lot will accept

It shall be permissible to calculate the feeder or service load in accordance with Table 550.31. No demand factor shall be allowed for any other load, except as provided in this *Code*.

Table 550.31 Demand Factors for Services and Feeders

Number of Mobile Homes	Demand Factor (%)
1	100
2	55
3	44
4	39
5	33
6	29
7–9	28
10–12	27
13–15	26
16–21	25
22–40	24
41–60	23
61 and over	22

550.32 Service Equipment.

(A) Mobile Home Service Equipment.

Mobile home service equipment shall not be mounted in or on mobile homes. The service equipment shall be rated not less than that required by 550.32(C) and mounted within sight from the mobile home it serves. The installation of the service equipment shall comply with Article 230, Part I through Part VII. The mobile home service disconnect shall be permitted to be used as the emergency disconnect in accordance with 230.70(A)(2) and 230.70(B)(2).

(B) Manufactured Home Service Equipment.

Manufactured home service equipment shall be permitted to be installed in or on manufactured homes if all of the following conditions are met:

(1) The manufacturer shall include, in its written installation instructions, information requiring that the home be secured in place by an anchoring system or installed on and secured to a permanent foundation.

(2) The installation of the service shall comply with Article 230, Part I through Part VII.

(3) Means shall be provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure.

(4) Bonding and grounding of the service shall comply with Article 250, Part I through Part V.

(5) The manufacturer shall include, in its written installation instructions, one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250.

(6) The minimum size grounding electrode conductor shall be specified in the instructions.

(7) A warning label, meeting the requirements in 110.21(B) and stating the following, shall be mounted on or adjacent to the service equipment:

WARNING
DO NOT PROVIDE ELECTRICAL POWER
UNTIL THE GROUNDING ELECTRODE(S)
IS INSTALLED AND CONNECTED
(SEE INSTALLATION INSTRUCTIONS).

Where the service equipment is not installed in or on the unit, the installation shall comply with the other requirements of this section.

(C) Rating.

Mobile home service equipment shall be rated at not less than 100 amperes at 120/240 volts, and provisions shall be made for connecting a mobile home feeder assembly by a permanent wiring method. Power outlets used as mobile home service equipment shall also be permitted to contain receptacles rated up to 50 amperes with appropriate overcurrent protection. Fifty-ampere receptacles shall conform to the configuration shown in Figure 550.10(C).

> Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

(D) Additional Outside Electrical Equipment.

Means for connecting a mobile home accessory building or structure or additional electrical equipment located outside a mobile home by a fixed wiring method shall be provided in either the mobile home service equipment or the local external disconnecting means permitted in 550.32(A).

(E) Replacement Home.

When existing service equipment is reconnected to a replacement mobile or manufactured home, the service shall be provided with a surge protective device in accordance with 230.67.

(F) Additional Receptacles on Service Equipment.

Receptacles located outside mobile or manufactured homes shall be provided with ground-fault circuit-interrupter protection as specified by 210.8(A). Where receptacles provide power to mobile or manufactured homes in accordance with 550.10, ground-fault circuit-interrupter protection shall not be required.

(G) Mounting Height.

Outdoor mobile home disconnecting means shall be installed so the bottom of the enclosure containing the disconnecting means is not less than 600 mm (2 ft) above finished grade or working platform. The disconnecting means shall be installed so that the center of the grip of the operating handle, when in the highest position, is not more than 2.0 m (6 ft 7 in.) above the finished grade or working platform.

(H) Marking.

Where a 125/250-volt receptacle is used in mobile home service equipment, the service equipment shall be marked as follows:

TURN DISCONNECTING SWITCH OR
CIRCUIT BREAKER OFF BEFORE INSERTING
OR REMOVING PLUG. PLUG MUST BE FULLY
INSERTED OR REMOVED.

The marking shall be located on the service equipment adjacent to the receptacle outlet.

550.33 Feeder.

(A) Feeder Equipment.

The feeder assembly, including the disconnecting means, shall not be mounted in or on the mobile home. A manufactured home feeder disconnecting means shall be permitted to be installed in or on the manufactured home in accordance with the requirements of 550.32(B). The feeder equipment shall be rated not less than that required in 550.32(C), mounted in a readily accessible outdoor location, and within sight from the mobile home or manufactured home it serves. Grounding of the disconnecting means shall be in accordance with 250.32.

(B) Feeder Conductors.

Feeder conductors shall comply with the following:

(1) Feeder conductors shall consist of either a listed cord, factory installed in accordance with 550.10(B), or a permanently installed feeder consisting of four insulated, color-coded conductors that shall be identified by the factory or field marking of the conductors in compliance with 310.6. Equipment grounding conductors shall not be identified by stripping the insulation.

(2) Feeder conductors shall be installed in compliance with 250.32(B).

Exception: An existing feeder installed without an equipment grounding conductor shall be permitted to comply with 250.32(B)(1) Exception No. 1.

(C) Feeder Capacity.

Mobile home and manufactured home feeder circuit conductors shall have a capacity not less than the loads supplied, shall have an ampacity of not less than 100 amperes, and shall be permitted to be sized in accordance with 310.12.

Additional Proposed Changes

File Name	Description	Approved
CN_275.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 275 appeared in the First Draft Report.

The Correlating Committee directs CMP-7 to create a task group during the Public Comment period to develop public comments to complete the revisions to Article 550. A member of the Correlating Committee Usability Task Group is to be appointed to the
task group.

Related Item

- Correlating Committee Note No. 275

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:07:10 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Correlating Committee Note No. 275-NFPA 70-2024 [Article 550]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 21:50:21 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP-7 to create a task group during the Public Comment period to develop public comments to complete the revisions to Article 550. A member of the Correlating Committee Usability Task Group is to be appointed to the task group.

Ballot Results

This item has passed ballot

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 588-NFPA 70-2024 [Section No. 550.1]

550.1 Scope.

This article covers electrical conductors and equipment installed within or on mobile and manufactured homes, conductors that connect mobile and manufactured homes to a supply of electricity, and installation of electrical wiring, luminaires, equipment, and appurtenances related to electrical installations within a mobile home park up to the mobile home service-entrance conductors or, if none, the mobile home service equipment.

Informational Note: See 24 CFR 3280, *Manufactured Home Construction and Safety Standards*, of the Federal Department of Housing and Urban Development for additional information on manufactured housing.

Additional Proposed Changes

File Name	Description	Approved
CN_285.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 285 appeared in the First Draft Report on First Revision No. 8444.

The Correlating Committee directs that CMP-7 to review FR 8444 and consider removal of general requirements, such as “qualified testing agency” and “connected in an approved manner when installed”.

Related Item

• First Revision No. 8444 •

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 01 20:14:07 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Correlating Committee Note No. 285-NFPA 70-2024 [New Section after 550.1]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:22:02 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs that CMP-7 to review FR 8444 and consider removal of general requirements, such as “qualified testing agency” and “connected in an approved manner when installed”.

First Revision No. 8444-NFPA 70-2024 [New Section after 550.1]

Ballot Results

This item has passed ballot

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 561-NFPA 70-2024 [Section No. 550.10]

550.10 Power Supply.

(A) Feeder.

The power supply to the mobile home shall be a feeder assembly consisting of not more than one listed 50-ampere mobile home power-supply cord or a permanently installed feeder.

Exception No. 1: A mobile home that is factory equipped with gas or oil-fired central heating equipment and cooking appliances shall be permitted to be provided with a listed mobile home power-supply cord rated 40 amperes.

Exception No. 2: A feeder assembly shall not be required for manufactured homes constructed in accordance with 550.32(B).

(B) Power-Supply Cord.

If the mobile home has a power-supply cord, it shall be permanently attached to the panelboard's enclosure, or to a junction box permanently connected to the panelboard, with the free end terminating in an attachment plug cap.

Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, mobile homes.

A suitable clamp or the equivalent shall be provided at the panelboard knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.

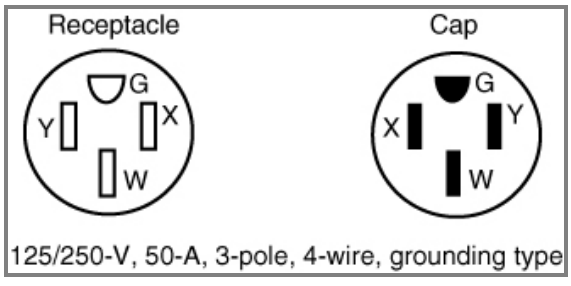
Cords shall be a listed type with four conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the equipment grounding conductor.

(C) Attachment Plug Cap.

The attachment plug cap shall be a 3-pole, 4-wire, grounding type, rated 50 amperes, 125/250 volts with a configuration as shown in Figure 550.10(C) and intended for use with the 50-ampere, 125/250-volt receptacle configuration shown in Figure 550.10(C). It shall be listed, by itself or as part of a power-supply cord assembly, for the purpose and shall be molded to or installed on the flexible cord so that it is secured tightly to the cord at the point where the cord enters the attachment plug cap. If a right-angle cap is used, the configuration shall be oriented so that the grounding member is farthest from the cord.

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

Figure 550.10(C) 50-Ampere, 125/250-Volt Receptacle and Attachment Plug Cap Configurations, 3-Pole, 4-Wire, Grounding-Types, Used for Mobile Home Supply Cords and Mobile Home Parks.



(D) Overall Length of a Power-Supply Cord.

The overall length of a power-supply cord, measured from the end of the cord, including bared leads, to the face of the attachment plug cap shall not be less than 6.4 m (21 ft) and shall not exceed 11 m (36½ ft). The length of the cord from the face of the attachment plug cap to the point where the cord enters the mobile home shall not be less than 6.0 m (20 ft).

(E) Marking.

The power-supply cord shall bear the following marking:

FOR USE WITH MOBILE HOMES — 40 AMPERES

or

FOR USE WITH MOBILE HOMES — 50 AMPERES

(F) Point of Entrance.

The point of entrance of the feeder assembly to the mobile home shall be in the exterior wall, floor, or roof.

(G) Protected.

Where the cord passes through walls or floors, it shall be protected by means of conduits and bushings or equivalent. The cord shall be permitted to be installed within the mobile home walls, provided a continuous raceway having a maximum size of 32 mm (1¼ in.) is installed from the branch-circuit panelboard to the underside of the mobile home floor.

(H) Protection Against Corrosion and Mechanical Damage.

Permanent provisions shall be made for the protection of the attachment plug cap of the power-supply cord and any connector cord assembly or receptacle against corrosion and mechanical damage if such devices are in an exterior location while the mobile home is in transit.

(I) Mast Weatherhead or Raceway.

Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of either of the following:

(1) One mast weatherhead installation, installed in accordance with Article 230, Part II, containing four continuous, insulated, color-coded feeder conductors, one of which shall be an equipment grounding conductor.

(2) Raceways from the disconnecting means in the mobile home to the underside of the mobile home, with provisions for attachment to a suitable junction box or fitting to the raceway on the underside of the mobile home [with or without conductors as in 550.10(I)(1)], which shall be one of the following:

   a. Rigid metal conduit

   b. Intermediate metal conduit

   c. Rigid polyvinyl chloride conduit

   d. Other raceways identified for the location

The manufacturer shall provide written installation instructions stating the proper feeder conductor sizes for the raceway and the size of the junction box to be used.

Additional Proposed Changes

File Name	Description	Approved
CN_276.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 276 appeared in the First Draft Report on First Revision No. 8461.

The Correlating Committee directs CMP 7 to review FR 8461 and reconsider the use of the parenthetical phrase “(with or without conductors as in 550.10(I)(1))” as parenthetical expressions create confusion and misunderstanding and shall be avoided. Refer to NEC Style Manual Section 3.5.1.1. In addition, review the use of the terms
“suitable” and “proper”.

Related Item

• First Revision No. 8461

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:08:33 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Correlating Committee Note No. 276-NFPA 70-2024 [Section No. 550.10(I)]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 21:52:59 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review FR 8461 and reconsider the use of the parenthetical phrase “(with or without conductors as in 550.10(I)(1))” as parenthetical expressions create confusion and misunderstanding and shall be avoided. Refer to NEC Style Manual Section 3.5.1.1. In addition, review the use of the terms “suitable” and “proper”.

First Revision No. 8461-NFPA 70-2024 [Section No. 550.10(I)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 562-NFPA 70-2024 [Section No. 550.13(B)]

(B) Ground-Fault Circuit Interrupters (GFCIs).

Ground-fault circuit-interrupter protection shall be provided as required in 210.8.

Additional Proposed Changes

File Name	Description	Approved
CN_277.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 277 appeared in the First Draft Report on First Revision No. 8465.

The Corelating Committee directs CMP-7 to review this first revision and consider the deletion of the section in accordance with NEC Style Manual Section 4.1.1 because 210.8 already applies and is not being modified by this section.

Related Item

• First Revision No. 8465

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:09:53 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Correlating Committee Note No. 277-NFPA 70-2024 [Section No. 550.13(B)]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 21:54:56 EDT 2024

Committee Statement

Committee Statement: The Corelating Committee directs CMP-7 to review this first revision and consider the deletion of the section in accordance with NEC Style Manual Section 4.1.1 because 210.8 already applies and is not being modified by this section.

First Revision No. 8465-NFPA 70-2024 [Section No. 550.13(B)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 1726-NFPA 70-2024 [Section No. 550.18]

550.18 Calculations.

The method detailed in 550.18(A) through 550.18(C) shall be employed in calculating the supply-cord and distribution-panelboard load for each feeder assembly for each mobile home in lieu of the procedure shown in Article 120 , Parts I through IV, and be based on a 3-wire, 120/240-volt ac only supply with 120-volt loads balanced between the two ungrounded conductors of the 3-wire system.

(A) Lighting, Small-Appliance, and Laundry Load.

(1) Lighting Volt-Amperes.

Length times width of mobile home floor (outside dimensions) times 33 volt-amperes/m ^{2} (3 VA/ft ^{2}) — for example, length × width × 3 = lighting volt-amperes.

(2) Small-Appliance Volt-Amperes.

Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit — for example, number of circuits × 1500 = small-appliance volt-amperes.

(3) Laundry Area Circuit Volt-Amperes.

1500 volt-amperes.

(4) Total Volt-Amperes.

Lighting volt-amperes plus small-appliance volt-amperes plus laundry area volt-amperes equals total volt-amperes.

(5) Net Volt-Amperes.

First 3000 total volt-amperes at 100 percent plus remainder at 35 percent equals volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

(B) Total Load for Determining Power Supply.

Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 550.18(A)(5) .

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 40-ampere power-supply cord is provided, allow 15 amperes per leg for air conditioning.

(3) Twenty-five percent of current of largest motor in 550.18(B)(2) .

(4) Total of nameplate amperes for waste disposer, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 550.18(B) .

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D , Example D11, for an illustration of the application of this calculation.

Table 550.18(B) Freestanding Range Load

~~Nameplate Rating~~

~~(watts)~~ ~~Use~~

~~(volt-amperes)~~ ~~0–10,000~~ ~~80 percent of rating~~ ~~Over 10,000–12,500~~ ~~8,000~~ ~~Over 12,500–13,500~~ ~~8,400~~ ~~Over 13,500–14,500~~ ~~8,800~~ ~~Over 14,500–15,500~~ ~~9,200~~ ~~Over 15,500–16,500~~ ~~9,600~~ ~~Over 16,500–17,500~~ ~~10,000~~

~~**(C)**~~ ~~Optional Method of Calculation for Lighting and Appliance Load.~~

~~The optional method for calculating lighting and appliance load shown in~~ ~~120.82~~ ~~shall be permitted.~~

Statement of Problem and Substantiation for Public Comment

This public comment is being submitted by a CMP-7 task group consisting of Ryan Hyer, David Smith, and Dean Hunter, to relocate Article 550, Part III, Mobile and Manufactured Home calculations to Article 120, Part IX, titled Mobile and Manufactured Home Calculations. The relocation is consistent with all the calculations being in one article in accordance with section 2.3.1 of the NEC Style manual.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 1725-NFPA 70-2024 [Section No. 550.31]	

Related Item

- CI-8794-NFPA 70-2024 • CCN- 275

Submitter Information Verification

Submitter Full Name: Dean Hunter
Organization: Minnesota Department of Labor
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 26 17:12:05 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8484-NFPA 70-2024
Statement: Former 550.18 has been moved to Article 120 Part IX for calculations.

Public Comment No. 586-NFPA 70-2024 [Section No. 550.30]

550.30 Distribution System.

The mobile home park secondary electrical distribution system to mobile home lots shall be single-phase, 120/240 volts, nominal.

Additional Proposed Changes

File Name	Description	Approved
CN_283.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 283 appeared in the First Draft Report on First Revision No. 8333.

The Correlating Committee directs CMP 7 to review FR 8333 and reconsider the use of the parenthetical phrase (excluding wiring methods) as parenthetical expressions create confusion and misunderstanding and shall be avoided. Refer to NEC Style Manual Section 3.5.1.1.

Related Item

- First Revision No. 8333

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 01 20:06:39 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected

Resolution: The parenthetical in this case is appropriate to differentiate between the components and parts within the listed electrical equipment (excluding wiring methods) that are installed below the 12” threshold which are listed for the environment.

Correlating Committee Note No. 283-NFPA 70-2024 [Section No. 555.30]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:16:03 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review FR 8333 and reconsider the use of the parenthetical phrase (excluding wiring methods) as parenthetical expressions create confusion and misunderstanding and shall be avoided. Refer to NEC Style Manual Section 3.5.1.1.

First Revision No. 8333-NFPA 70-2024 [Section No. 555.30]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 1725-NFPA 70-2024 [Section No. 550.31]

~~**550.31** Allowable Demand Factors.~~

~~Park electrical wiring systems shall be calculated (at 120/240 volts) on the larger of the following:~~

(1) ~~16,000 volt-amperes for each mobile home lot~~

(2) ~~The load calculated in accordance with 550.18 for the largest typical mobile home that each lot will accept~~

~~It shall be permissible to calculate the feeder or service load in accordance with Table 550.31 . No demand factor shall be allowed for any other load, except as provided in this *Code* .~~

~~Table 550.31 Demand Factors for Services and Feeders~~

~~Number of~~

~~Mobile Homes Demand~~

~~Factor (%) 1 100 2 55 3 44 4 39 5 33 6 29 7–9 28 10–12 27 13–15 26 16–21 25 22–40 24 41–60 23 61 and over 22~~

Statement of Problem and Substantiation for Public Comment

Substantiation: This public comment is being submitted by a CMP-7 task group consisting of Ryan Hyer, David Smith, and Dean Hunter. This comment relocates section 550.51 to a subpart for “Demand Factor Calculations for Services and Feeders” at mobile home parks – in Article 120, Part IX. The relocation is consistent with all the calculations being in one article in accordance with section 2.3.1 of the NEC Style manual.

Related Public Comments for This Document

Related Comment	Relationship
Public Comment No. 1726-NFPA 70-2024 [Section No. 550.18]	

Related Item

• CI-8794-NFPA 70-2024 • CCN- 275

Submitter Information Verification

Submitter Full Name: Dean Hunter
Organization: Minnesota Department of Labor
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 26 17:09:41 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8485-NFPA 70-2024

Statement: Former 550.31 has been moved to Article 120 Part IX for calculations.

Public Comment No. 563-NFPA 70-2024 [Section No. 550.32]

550.32 Service Equipment.

(A) Mobile Home Service Equipment.

Mobile home service equipment shall not be mounted in or on mobile homes. The service equipment shall be rated not less than that required by 550.32(C) and mounted within sight from the mobile home it serves. The installation of the service equipment shall comply with Article 230, Part I through Part VII. The mobile home service disconnect shall be permitted to be used as the emergency disconnect in accordance with 230.70(A)(2) and 230.70(B)(2).

(B) Manufactured Home Service Equipment.

Manufactured home service equipment shall be permitted to be installed in or on manufactured homes if all of the following conditions are met:

(1) The manufacturer shall include, in its written installation instructions, information requiring that the home be secured in place by an anchoring system or installed on and secured to a permanent foundation.

(2) The installation of the service shall comply with Article 230, Part I through Part VII.

(3) Means shall be provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure.

(4) Bonding and grounding of the service shall comply with Article 250, Part I through Part V.

(5) The manufacturer shall include, in its written installation instructions, one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250.

(6) The minimum size grounding electrode conductor shall be specified in the instructions.

(7) A warning label, meeting the requirements in 110.21(B) and stating the following, shall be mounted on or adjacent to the service equipment:

WARNING
DO NOT PROVIDE ELECTRICAL POWER
UNTIL THE GROUNDING ELECTRODE(S)
IS INSTALLED AND CONNECTED
(SEE INSTALLATION INSTRUCTIONS).

Where the service equipment is not installed in or on the unit, the installation shall comply with the other requirements of this section.

(C) Rating.

Mobile home service equipment shall be rated at not less than 100 amperes at 120/240 volts, and provisions shall be made for connecting a mobile home feeder assembly by a permanent wiring method. Power outlets used as mobile home service equipment shall also be permitted to contain receptacles rated up to 50 amperes with appropriate overcurrent protection. Fifty-ampere receptacles shall conform to the configuration shown in Figure 550.10(C).

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of the 50-ampere plug and receptacle configuration.

(D) Additional Outside Electrical Equipment.

Means for connecting a mobile home accessory building or structure or additional electrical equipment located outside a mobile home by a fixed wiring method shall be provided in either the mobile home service equipment or the local external disconnecting means permitted in 550.32(A).

(E) Replacement Home.

When existing service equipment is reconnected to a replacement mobile or manufactured home, the service shall be provided with a surge protective device in accordance with 230.67.

(F) Additional Receptacles on Service Equipment.

Receptacles located outside mobile or manufactured homes shall be provided with ground-fault circuit-interrupter protection as specified by 210.8(A). Where receptacles provide power to mobile or manufactured homes in accordance with 550.10, ground-fault circuit-interrupter protection shall not be required.

(G) Mounting Height.

Outdoor mobile home disconnecting means shall be installed so the bottom of the enclosure containing the disconnecting means is not less than 600 mm (2 ft) above finished grade or working platform. The disconnecting means shall be installed so that the center of the grip of the operating handle, when in the highest position, is not more than 2.0 m (6 ft 7 in.) above the finished grade or working platform.

(H) Marking.

Where a 125/250-volt receptacle is used in mobile home service equipment, the service equipment shall be marked as follows:

TURN DISCONNECTING SWITCH OR
CIRCUIT BREAKER OFF BEFORE INSERTING
OR REMOVING PLUG. PLUG MUST BE FULLY
INSERTED OR REMOVED.

The marking shall be located on the service equipment adjacent to the receptacle outlet.

Additional Proposed Changes

File Name	Description	Approved
CN_278.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 278 appeared in the First Draft Report on First Revision No. 8518.

The Correlating Committee directs CMP-7 to correct the reference to Article 230, Part I through Part VII. There are only VII parts to this article and the reference is not complaint with NEC Style Manual Section 4.1.4, “references to all parts of an article shall not be permitted”.

Related Item

• First Revision No. 8518

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:

State:

Zip:

Submittal Date: Wed Jul 31 17:11:25 EDT 2024

Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Correlating Committee Note No. 278-NFPA 70-2024 [Section No. 550.32]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 21:56:42 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP-7 to correct the reference to Article 230, Part I through Part VII. There are only VII parts to this article and the reference is not complaint with NEC Style Manual Section 4.1.4, “references to all parts of an article shall not be permitted”.

First Revision No. 8518-NFPA 70-2024 [Section No. 550.32(A)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 564-NFPA 70-2024 [Section No. 550.32(B)]

(B) Manufactured Home Service Equipment.

Manufactured home service equipment shall be permitted to be installed in or on manufactured homes if all of the following conditions are met:

(1) The manufacturer shall include, in its written installation instructions, information requiring that the home be secured in place by an anchoring system or installed on and secured to a permanent foundation.

(2) The installation of the service shall comply with Article 230, Part I through Part VII.

(3) Means shall be provided for the connection of a grounding electrode conductor to the service equipment and routing it outside the structure.

(4) Bonding and grounding of the service shall comply with Article 250, Part I through Part V.

(5) The manufacturer shall include, in its written installation instructions, one method of grounding the service equipment at the installation site. The instructions shall clearly state that other methods of grounding are found in Article 250.

(6) The minimum size grounding electrode conductor shall be specified in the instructions.

(7) A warning label, meeting the requirements in 110.21(B) and stating the following, shall be mounted on or adjacent to the service equipment:

WARNING
DO NOT PROVIDE ELECTRICAL POWER
UNTIL THE GROUNDING ELECTRODE(S)
IS INSTALLED AND CONNECTED
(SEE INSTALLATION INSTRUCTIONS).

Where the service equipment is not installed in or on the unit, the installation shall comply with the other requirements of this section.

Additional Proposed Changes

File Name	Description	Approved
CN_279.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 279 appeared in the First Draft Report on First Revision No. 8523.

The Correlating Committee directs CMP-7 to correct the reference to Article 230, Part I through Part VII. There are only VII parts to this article and the reference is not complaint with NEC Style Manual Section 4.4.4, “references to all parts of an article shall not be permitted”.

Related Item

• First Revision No. 8523

Submitter Information Verification

Submitter Full Name: CC Notes

Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:13:12 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8255-NFPA 70-2024 PC-562 & PC-564: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive PC-561: The parenthetical was retained as mobile and manufactured homes may be constructed with or without feeder conductors installed during the manufacturing process.

Statement: Article “parts” are revised to separate requirements and sections were relocated and renumbered as necessary.

The term “power-supply cord” is changed to “feeder assembly” throughout the article to be consistent with the defined term.

New 660.13(C): Relocated from 550.25.

New 550.13(D): The requirement is relocated from former 550.20(A).

New 550.15(C): Relocated from former 550.20(A).

New 550.16: Equipment requirements relocated from former 550.20(B).

New 550.16(A): Relocated from former 550.20(B).

Former 550.18 has been moved to Article 120 Part IX for calculations.

Former 550.31 has been moved to Article 120 Part IX for calculations.

550.51(former 550.32): The text is revised for clarity and an informational note added to aid code user in applying this section.

Correlating Committee Note No. 279-NFPA 70-2024 [Section No. 550.32(B)]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 21:58:03 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP-7 to correct the reference to Article 230, Part I through Part VII. There are only VII parts to this article and the reference is not complaint with NEC Style Manual Section 4.4.4, “references to all parts of an article shall not be permitted”.

First Revision No. 8523-NFPA 70-2024 [Section No. 550.32(B)]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 243-NFPA 70-2024 [Section No. 551.20]

551.20 Combination Electrical Systems.

(A) General.

Vehicle wiring suitable for connection to a battery or dc supply source shall be permitted to be connected to a 120-volt source, provided the entire wiring system and equipment are rated and installed in full conformity with the requirements of Article 551, Parts I, II, III, IV, and V, covering 120-volt electrical systems. Circuits fed from ac transformers shall not supply dc appliances.

(B) Voltage Converters (120-Volt Alternating Current to Low-Voltage Direct Current).

The 120-volt ac side of the voltage converter shall be wired in full conformity with the requirements of Article 551, Parts I, II, and IV, for 120-volt electrical systems.

Exception: Converters supplied as an integral part of a listed appliance shall not be subject to 551.20(B).

All converters and transformers shall be listed for use in recreational vehicles and designed or equipped to provide overtemperature protection.

Exception: A low-voltage appliance that is controlled by a momentary switch (normally open) that has no means for holding in the closed position or refrigerators with a 120-volt function shall not be considered a connected load when determining the required converter rating. Momentarily energized appliances shall be limited to those used to prepare the vehicle for occupancy or travel.

(C) Bonding Voltage Converter Enclosures.

The non–current-carrying metal enclosure of the voltage converter shall be connected to the frame of the vehicle with a minimum 8 AWG copper conductor. The voltage converter shall be provided with a separate chassis bonding conductor that shall not be used as a current-carrying conductor.

(D) Dual-Voltage Fixtures, Including Luminaires or Appliances.

Fixtures, including luminaires, or appliances having both 120-volt and low-voltage connections shall be listed for dual voltage.

(E) Autotransformers.

Autotransformers shall not be used.

(F) Receptacles and Plug Caps.

Where a recreational vehicle is equipped with an ac system, a low-voltage system, or both, receptacles and plug caps of the low-voltage system shall differ in configuration from those of the ac system. Where a vehicle equipped with a battery or other low-voltage system has an external connection for low-voltage power, the connector shall have a configuration that will not accept ac power.

Statement of Problem and Substantiation for Public Comment

Following text should be added back to the section regarding converter sizing.

The first 20 amperes of load at 100 percent plus
The second 20 amperes of load at 50 percent plus
All loads above 40 amperes at 25 percent.

This text is needed for sizing of a converter.

Related Item

- FR 8552

Submitter Information Verification

Submitter Full Name: Curt Richardson
Organization: Recreation Vehicle Industry As
Street Address:
City:
State:
Zip:
Submittal Date: Thu Jul 25 10:51:57 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8225-NFPA 70-2024

Statement: The second sentence in (B) was deleted since new 551.2 addresses listing of equipment.

Item (C) text was inadvertently deleted during the first draft.

Public Comment No. 1624-NFPA 70-2024 [Section No. 551.40(D)]

(D) Grounding Monitor Interrupter.

Recreational vehicles with a 30- or 50-ampere feeder assembly shall have ~~a listed~~ a permanently installed grounding monitor interrupter~~- permanently installed between the feeder assembly connection to the vehicle and before either a~~ with Listing to monitor the grounding circuit, detecting the potential between the grounded current carrying conductors and the non-current carrying grounded conductor and when greater than 30 volts rms, shall inhibit or interrupt the current carrying conductors of the feeder assembly connection into either the vehicle transfer switch if installed or the panelboard. This requirement shall become effective January 1, 2026.

Statement of Problem and Substantiation for Public Comment

Section No. 551.40(D) needs allowance of the GMI to be incorporated in a panel board or transfer switch as well as specify the principal requirement of the GMI. The newly published UL2299 Outline of Investigation of GMI Issue Number 1 dated January 26, 2024 contains Grounding integrity requirements that are not consistent with the safety basis or the intention of 551.40(D) and compliance would prohibit the operation of recreational vehicles on GFCI protected receptacles.

The proposed Section No. 551.40(D) language above concisely defines requirements for GMIs with implementations being a standalone device or integrated into existing RV components, requiring Listing and means compatible for RVs to plug-in and operate from GFCI protected receptacles and providing Grounding protection. This proposed language above is consistent with proven Ground protection implementations of existing products that have been used for over 20 years without incidence.

The UL2299 Outline currently contains the addition of a Ground integrity requirement with an unestablished impedance value and Ground reference point that does not add absolute protection from “Hot Skin” in either Type I or Type II GMI devices, for example the hazard that occurs with a non-compliant conversion of a three-wire dryer outlet is used to power RVs. Extremely important, the Outline Ground integrity requirement further make RVs incompatible with GFCI protected receptacles on all 15- and 20-amp exterior mounted residential, commercial and industrial receptacles where RVs are commonly plugged in to, that do protect from Hot Skin. If 551.40(D) dictates to the UL2299 Outline and future Standard to use 30 Vrms for Ground performance metric, then RVs will be Grounding protected and compatible with GFCIs.

Related Item

• First Draft Report

Submitter Information Verification

Submitter Full Name: David Bailey
Organization: dB Technologies Inc
Street Address:
City:
State:
Zip:

Submittal Date: Sun Aug 25 12:01:50 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action:	Rejected
Resolution:	This public comment is appropriate for the UL 2299 standard rather than for Section 551.40(D)

Public Comment No. 716-NFPA 70-2024 [Section No. 551.40(D)]

(D) Grounding Monitor Interrupter.

Recreational vehicles with a 30- or 50-ampere feeder assembly shall have a listed ~~grounding~~ Type II grounding monitor interrupter permanently installed between the feeder assembly connection to the vehicle and before either of the following:

1. The panelboard if not provided with a transfer switch ~~if installed or~~ ahead of the panelboard. ~~This requirement shall become effective January 1, 2026.~~

2. The transfer switch ahead of the panelboard, if provided.

Alternatively, the grounding monitor interrupter shall be permitted to be integral to the utility supply side of the transfer switch.

Informational Note: A Type II grounding monitor interrupter (GMI) Listed in accordance with UL 2299, the Outline of Investigation for Grounding Monitor Interrupters, meets the requirements of a Type I GMI that monitors and interrupts the ungrounded conductors if grounding is lost, and additionally monitors and interrupts the grounding conductor if a potential is present on the grounding conductor.

Statement of Problem and Substantiation for Public Comment

Many recreational vehicle parks are wired with each campsite pedestal connected to a feeder that is daisy chained from one site to the next. In this configuration, if there is a loss in continuity of the EGC back to the service panel, then a line -to-chassis fault (hot skin condition) in one RV will be "reflected" to other RVs connected to the feeder on that daisy chained loop. A Type II grounding monitor interrupter Listed in accordance with UL 2299 the Outline of Investigation for Grounding Monitor Interrupters, is provided with a switched equipment grounding interrupter that meets the requirements of a Type I GMI, and additionally monitors and interrupts the grounding conductor if a potential is present on the grounding conductor. This will open the circuit including the ground, and deny power to the RV if a potential is present on the grounding conductor preventing a reflective hot skin condition on the other RV's connected to the feeder circuit loop.

Related Item

• FR 8565

Submitter Information Verification

Submitter Full Name: Thomas Lichtenstein
Organization: UL Solutions
Street Address:
City:
State:
Zip:

Submittal Date: Fri Aug 02 18:20:59 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action:	Rejected but see related SR
Resolution:	SR-8234-NFPA 70-2024
Statement:	A type II GMI provides protection against a reflected hot skin condition. The location of the GMI is more clearly defined and allows for incorporation into already existing devices. The effective date is removed as it is not needed.

Public Comment No. 793-NFPA 70-2024 [Section No. 551.40(D)]

(D) Grounding Monitor Interrupter.

Recreational vehicles with a 30- or 50-ampere feeder assembly shall have a listed grounding monitor interrupter permanently installed between the feeder assembly connection to the vehicle and before either a transfer switch if installed or the panelboard. ~~This requirement shall become effective January 1, 2026.~~

Statement of Problem and Substantiation for Public Comment

The 2026 edition of the NEC is not likely to be adopted before January 1, 2026.

Related Item

• FR 8565

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 05 12:29:44 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8234-NFPA 70-2024
Statement: A type II GMI provides protection against a reflected hot skin condition. The location of the GMI is more clearly defined and allows for incorporation into already existing devices. The effective date is removed as it is not needed.

Public Comment No. 794-NFPA 70-2024 [Section No. 551.47(A)]

(A) Wiring Systems.

Except as otherwise specified in this article, only the following wiring methods shall be permitted to be installed within a recreational vehicle:

(1) Type AC
(2) Type FC
(3) Type MC
(4) Type UF
(5) Type IMC
(6) Type ENT
(7) Surface metal raceways
(8) Surface nonmetallic raceways

The wiring method shall include an equipment grounding conductor in accordance with 250.118.

Statement of Problem and Substantiation for Public Comment

The phrase "shall be permitted" is permissive, not mandatory. Section 110.8 allows any wiring method in any building unless otherwise prohibitted. This section makes no such prohibition, as it is written permissively. See 90.5(A) and (B). Adding the word "only" solves this problem.

Related Item

• FR 8583

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:

Submittal Date: Mon Aug 05 12:32:39 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected

Resolution: The phrase "shall be permitted" indicates a permissive rather than a mandatory requirement; adding the word "only" would restrict the use of additional acceptable wiring methods.

Public Comment No. 565-NFPA 70-2024 [Section No. 551.71]

551.71 Type Receptacles Provided.

(A) Recreational Vehicle Sites.

Every recreational vehicle site with electrical supply shall be equipped with recreational vehicle site supply equipment containing receptacles conforming to the configurations identified in Figure 551.46(C)(1). These receptacles shall meet the weather-resistant requirements in accordance with 406.9(B)(1) and 406.9(B)(2). These receptacles, when used in recreational vehicle site electrical equipment, shall not be required to be tamper-resistant in accordance with 406.26.

Receptacles shall be listed to meet the following:

(1) A 20-ampere, 125-volt receptacle at all sites

(2) A 30-ampere, 125-volt receptacle at a minimum of 70 percent of the sites

(3) A 50-ampere, 125/250-volt receptacle at a minimum of 40 percent of new sites and 20 percent of existing sites

Every recreational vehicle site equipped with a 50-ampere receptacle shall also be equipped with a 30-ampere, 125-volt receptacle.

Additional receptacles in accordance with 551.81 shall be permitted to be added.

(B) Tent Sites.

Dedicated tent sites with a 15- or 20-ampere electrical supply shall be permitted to be excluded when determining the percentage of recreational vehicle sites with 30- or 50-ampere receptacles.

(C) Additional Receptacles.

Additional receptacles within the recreational vehicle park shall be permitted for the connection of electrical equipment outside of recreational vehicles.

(D) GFCI Protection.

(1) Receptacles Installed in Other Than Recreational Vehicle Site Equipment.

GFCI protection shall be provided as required in 210.8(B).

(2) Receptacles Installed in Recreational Vehicle Site Equipment.

GFCI protection shall only be required for 125-volt, single-phase, 15- and 20-ampere receptacles.

Informational Note No. 1: Appliances used within recreational vehicles can create leakage current levels at the supply receptacle(s) that could exceed the limits of a Class A GFCI device.

Informational Note No. 2: The definition of *feeder assembly* clarifies that power supply cords to recreational vehicles are considered feeders.

Additional Proposed Changes

File Name	Description	Approved
CN_280.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 280 appeared in the First Draft Report on First Revision No. 8657.

The Correlating Committee directs CMP 7 to review FR 8657 and identify where the words “AC only” were added in 551.71 as described in the committee statement for
Global PI 4287. Revise the requirement accordingly.

Related Item

• First Revision No. 8657

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:27:31 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8243-NFPA 70-2024
Statement: The title was revised to reflect the fact the requirements in this section apply to AC only.

Correlating Committee Note No. 280-NFPA 70-2024 [Section No. 551.71]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:00:40 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review FR 8657 and identify where the words “AC only” were added in 551.71 as described in the committee statement for Global PI 4287. Revise the requirement accordingly.

First Revision No. 8657-NFPA 70-2024 [Section No. 551.71]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 795-NFPA 70-2024 [Section No. 551.71(A)]

(A) Recreational Vehicle Sites.

Every recreational vehicle site with electrical supply shall be equipped with recreational vehicle site supply equipment containing receptacles conforming to the configurations identified in Figure 551.46(C)(1). These receptacles shall meet the weather-resistant requirements in accordance with 406.9(B)(1) and 406.9(B)(2). These receptacles, when used in recreational vehicle site electrical equipment, shall not be required to be tamper-resistant in accordance with 406.26.

Receptacles shall be ~~listed to meet~~ provided in accordance with the following:

(1) A 20-ampere, 125-volt receptacle at all sites

(2) A 30-ampere, 125-volt receptacle at a minimum of 70 percent of the sites

(3) A 50-ampere, 125/250-volt receptacle at a minimum of 40 percent of new sites and 20 percent of existing sites

Every recreational vehicle site equipped with a 50-ampere receptacle shall also be equipped with a 30-ampere, 125-volt receptacle.

Additional receptacles in accordance with 551.81 shall be permitted to be added.

Statement of Problem and Substantiation for Public Comment

The word "listed" is misused in this section. Receptacles are not "listed to meet the following," they are listed in accordance with a product standard. I am thinking that the intent is that this section indactes the types of receptacle(s) that must be installed.

Related Item

• FR 8657

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 05 12:37:31 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8244-NFPA 70-2024 The phrase "provided in accordance with" implies that every recreational vehicle site would require a 50-amp receptacle, which is not the intent of this section.

Statement:	The reference to Section 406.9 is deleted since the receptacles need to be listed as weather resistant. The requirement for the percentage of receptacles has been clarified to indicate which sites require the receptacles.

Public Comment No. 566-NFPA 70-2024 [Section No. 551.74]

551.74 Overcurrent Protection.

Overcurrent protection shall be provided as required elsewhere in this code.

Additional Proposed Changes

File Name	Description	Approved
CN_281.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 281 appeared in the First Draft Report on First Revision No. 8592.

The Corelating Committee directs CMP-7 to review this revision and consider the deletion of the section in accordance with NEC Style Manual Section 4.1.1 because Chapters 1 through 4 of the NEC already apply and are not being modified by this requirement.

Related Item

- First Revision No. 8592

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:28:53 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected

Resolution: Although it is true that the requirements of Chapters 1-4 apply to this article implicitly, the users of this article find value in the requirement being explicit, even though it may be repetitive.

Correlating Committee Note No. 281-NFPA 70-2024 [Section No. 551.74]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:02:10 EDT 2024

Committee Statement

Committee Statement: The Corelating Committee directs CMP-7 to review this revision and consider the deletion of the section in accordance with NEC Style Manual Section 4.1.1 because Chapters 1 through 4 of the NEC already apply and are not being modified by this requirement.

First Revision No. 8592-NFPA 70-2024 [Section No. 551.74]

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 589-NFPA 70-2024 [Article 552]

Article 552 Park Trailers

Part I. General

552.1 Scope.

This article covers the electrical conductors and equipment installed within or on park trailers not covered fully under Articles 550 and 551.

552.4 General Requirements.

A park trailer is intended for seasonal use. It is not intended as a permanent dwelling unit or for commercial uses such as banks, clinics, offices, or similar. Units designed for such purposes are classified as relocatable structures and are covered in Article 545, Part II.

552.5 Labels.

Labels required by this article shall be made of etched, metal-stamped, or embossed brass or stainless steel; plastic laminates not less than 0.13 mm (0.005 in.) thick; or anodized or alclad aluminum not less than 0.5 mm (0.020 in.) thick or the equivalent.

Informational Note: See ANSI Z535.4-2011, *Product Safety Signs and Labels*, for guidance on other label criteria used in the park trailer industry.

Part II. Low-Voltage Systems

552.10 Low-Voltage Systems.

(A) Low-Voltage Circuits.

Low-voltage circuits furnished and installed by the park trailer manufacturer, other than those related to braking, shall be subject to this *Code*. Circuits supplying lights subject to federal or state regulations shall comply with applicable government regulations and this *Code*.

(B) Low-Voltage Wiring.

(1) Material.

Copper conductors shall be used for low-voltage circuits.

Exception: A metal chassis or frame shall be permitted as the return path to the source of supply.

(2) Conductor Types.

Conductors shall conform to the requirements for Type GXL, HDT, SGT, SGR, or Type SXL or shall have insulation in accordance with Table 310.4(1) or the equivalent. Conductor sizes 6 AWG through 18 AWG or SAE shall be listed. Single-wire, low-voltage conductors shall be of the stranded type.

Informational Note: See SAE J1128-2015, *Low Voltage Primary Cable,* for Types GXL, HDT, and SXL, and SAE J1127-2015, *Low Voltage Battery Cable,* for Types SGT and SGR.

(3) Marking.

All insulated low-voltage conductors shall be surface marked at intervals not greater than 1.2 m (4 ft) as follows:

(1) Listed conductors shall be marked as required by the listing agency.

(2) SAE conductors shall be marked with the name or logo of the manufacturer, specification designation, and wire gauge.

(3) Other conductors shall be marked with the name or logo of the manufacturer, temperature rating, wire gauge, conductor material, and insulation thickness.

(C) Low-Voltage Wiring Methods.

(1) Physical Protection.

Conductors shall be protected against physical damage and shall be secured. Where insulated conductors are clamped to the structure, the conductor insulation shall be supplemented by an additional wrap or layer of equivalent material, except that jacketed cables shall not be required to be so protected. Wiring shall be routed away from sharp edges, moving parts, or heat sources.

(2) Splices.

Conductors shall be spliced or joined with splicing devices that provide a secure connection or by brazing, welding, or soldering with a fusible metal or alloy. Soldered splices shall first be spliced or joined to be mechanically and electrically secure without solder, and then soldered. All splices, joints, and free ends of conductors shall be covered with an insulation equivalent to that on the conductors.

(3) Separation.

Battery and other low-voltage circuits shall be physically separated by at least a 13-mm (½-in.) gap or other approved means from circuits of a different power source. Acceptable methods shall be by clamping, routing, or equivalent means that ensure permanent total separation. Where circuits of different power sources cross, the external jacket of the nonmetallic-sheathed cables shall be deemed adequate separation.

(4) Ground Connections.

Ground connections to the chassis or frame shall be made in an accessible location and shall be mechanically secure. Ground connections shall be by means of copper conductors and copper or copper-alloy terminals of the solderless type identified for the size of wire used. The surface on which ground terminals make contact shall be cleaned and be free from oxide or paint or shall be electrically connected through the use of a cadmium, tin, or zinc-plated internal/external-toothed lockwasher or locking terminals. Ground terminal attaching screws, rivets or bolts, nuts, and lockwashers shall be cadmium, tin, or zinc-plated except rivets shall be permitted to be unanodized aluminum where attaching to aluminum structures.

The chassis-grounding terminal of the battery shall be connected to the unit chassis with a minimum 8 AWG copper conductor. In the event the unbonded lead from the battery exceeds 8 AWG, the bonding conductor size shall be not less than that of the unbonded lead.

(D) Battery Installations.

Storage batteries subject to this *Code* shall be securely attached to the unit and installed in an area vaportight to the interior and ventilated directly to the exterior of the unit. Where batteries are installed in a compartment, the compartment shall be ventilated with openings having a minimum area of 1100 mm^2 (1.7 $in.^2$) at both the top and at the bottom. Where compartment doors are equipped for ventilation, the openings shall be within 50 mm (2 in.) of the top and bottom. Batteries shall not be installed in a compartment containing spark- or flame-producing equipment.

(E) Overcurrent Protection.

(1) Rating.

Low-voltage circuit wiring shall be protected by overcurrent protective devices rated not in excess of the ampacity of copper conductors, in accordance with Table 552.10(E)(1).

Table 552.10(E)(1) Low-Voltage Overcurrent Protection

Wire Size (AWG)	Ampacity	Wire Type
18	6	Stranded only
16	8	Stranded only
14	15	Stranded or solid
12	20	Stranded or solid
10	30	Stranded or solid

(2) Type.

Circuit breakers or fuses shall be of an approved type, including automotive types. Fuseholders shall be clearly marked with maximum fuse size and shall be protected against shorting and physical damage by a cover or equivalent means.

> Informational Note: See ANSI/SAE J554-1987, *Standard for Electric Fuses (Cartridge Type)*; SAE J1284-1988, *Standard for Blade Type Electric Fuses*; and UL 275-2005, *Standard for Automotive Glass Tube Fuses*, for further information.

(3) Appliances.

Appliances such as pumps, compressors, heater blowers, and similar motor-driven appliances shall be installed in accordance with the manufacturer's instructions.

Motors that are controlled by automatic switching or by latching-type manual switches shall be protected in accordance with 430.32(B).

(4) Location.

The overcurrent protective device shall be installed in an accessible location on the unit within 450 mm (18 in.) of the point where the power supply connects to the unit circuits. If located outside the park trailer, the device shall be protected against weather and physical damage.

Exception: External low-voltage supply shall be permitted to have the overcurrent protective device within 450 mm (18 in.) after entering the unit or after leaving a metal raceway.

(F) Switches.

Switches shall have a dc rating not less than the connected load.

(G) Luminaires.

All low-voltage interior luminaires rated more than 4 watts, employing lamps rated more than 1.2 watts, shall be listed.

Part III. Combination Electrical Systems

552.20 Combination Electrical Systems.

(A) General.

Unit wiring suitable for connection to a battery or other low-voltage supply source shall be permitted to be connected to a 120-volt source, provided that the entire wiring system and equipment are rated and installed in full conformity with the requirements of Article 552, Parts I, III, IV, and V, covering 120-volt electrical systems. Circuits fed from ac transformers shall not supply dc appliances.

(B) Voltage Converters (120-Volt Alternating Current to Low-Voltage Direct Current).

The 120-volt ac side of the voltage converter shall be wired in full conformity with the requirements of Article 552, Parts I and IV, for 120-volt electrical systems.

Exception: Converters supplied as an integral part of a listed appliance shall not be subject to 552.20(B).

All converters and transformers shall be listed for use in recreation units and designed or equipped to provide over-temperature protection. To determine the converter rating, the following percentages shall be applied to the total connected load, including average battery-charging rate, of all 12-volt equipment:

The first 20 amperes of load at 100 percent plus

The second 20 amperes of load at 50 percent plus

All load above 40 amperes at 25 percent

Exception: A low-voltage appliance that is controlled by a momentary switch (normally open) that has no means for holding in the closed position shall not be considered as a connected load when determining the required converter rating. Momentarily energized appliances shall be limited to those used to prepare the unit for occupancy or travel.

(C) Bonding Voltage Converter Enclosures.

The non–current-carrying metal enclosure of the voltage converter shall be connected to the frame of the unit with an 8 AWG copper conductor minimum. The equipment grounding conductor for the battery and the metal enclosure shall be permitted to be the same conductor.

(D) Dual-Voltage Fixtures Including Luminaires or Appliances.

Fixtures, including luminaires, or appliances having both 120-volt and low-voltage connections shall be listed for dual voltage.

(E) Autotransformers.

Autotransformers shall not be used.

(F) Receptacles and Plug Caps.

Where a park trailer is equipped with a 120-volt or 120/240-volt ac system, a low-voltage system, or both, receptacles and plug caps of the low-voltage system shall differ in configuration from those of the 120-volt or 120/240-volt system. Where a unit equipped with a battery or dc system has an external connection for low-voltage power, the connector shall have a configuration that will not accept 120-volt power.

Part IV. Nominal 120-Volt or 120/240-Volt Systems

552.40 120-Volt or 120/240-Volt, Nominal, Systems.

(A) General Requirements.

The electrical equipment and material of park trailers indicated for connection to a wiring system rated 120 volts, nominal, 2-wire with an equipment grounding conductor, or a wiring system rated 120/240 volts, nominal, 3-wire with an equipment grounding conductor, shall be listed and installed in accordance with Article 552, Parts I, III, IV, and V.

(B) Materials and Equipment.

Electrical materials, devices, appliances, fittings, and other equipment installed, intended for use in, or attached to the park trailer shall be listed. All products shall be used only in the manner in which they have been tested and found suitable for the intended use.

552.41 Receptacle Outlets Required.

(A) Spacing.

Receptacle outlets shall be installed at wall spaces 600 mm (2 ft) wide or more so that no point along the floor line is more than 1.8 m (6 ft), measured horizontally, from an outlet in that space.

Exception No. 1: Bath and hallway areas shall not be required to comply with 552.41(A).

Exception No. 2: Wall spaces occupied by kitchen cabinets, wardrobe cabinets, built-in furniture; behind doors that could open fully against a wall surface; or similar facilities.

(B) Location.

Receptacle outlets shall be installed as follows:

(1) Adjacent to countertops in the kitchen [at least one on each side of the sink if countertops are on each side and are 300 mm (12 in.) or over in width and depth]

(2) Adjacent to the refrigerator and gas range space, except where a gas-fired refrigerator or cooking appliance, requiring no external electrical connection, is factory-installed

(3) Adjacent to countertop spaces of 300 mm (12 in.) or more in width and depth that cannot be reached from a receptacle required in 552.41(B)(1) by a cord of 1.8 m (6 ft) without crossing a traffic area, cooking appliance, or sink

(C) Ground-Fault Circuit-Interrupter Protection.

Each 125-volt, single-phase, 15- or 20-ampere receptacle shall have ground-fault circuit-interrupter protection for personnel in the following locations:

(1) Where the receptacles are installed to serve kitchen countertop surfaces

(2) Within 1.8 m (6 ft) of any lavatory or sink

Exception: Receptacles installed for appliances in dedicated spaces, such as for dishwashers, disposals, refrigerators, freezers, and laundry equipment.

(3) In the area occupied by a toilet, shower, tub, or any combination thereof

(4) On the exterior of the unit

Exception: Receptacles that are located inside of an access panel that is installed on the exterior of the unit to supply power for an installed appliance shall not be required to have ground-fault circuit-interrupter protection.

The receptacle outlet shall be permitted in a listed luminaire. A receptacle outlet shall not be installed in a tub or combination tub–shower compartment.

(D) Pipe Heating Cable Outlet.

Where a pipe heating cable outlet is installed, the outlet shall be as follows:

(1) Located within 600 mm (2 ft) of the cold water inlet

(2) Connected to an interior branch circuit, other than a small-appliance branch circuit

(3) On a circuit where all of the outlets are on the load side of the ground-fault circuit-interrupter protection for personnel

(4) Mounted on the underside of the park trailer and shall not be considered to be the outdoor receptacle outlet required in 552.41(E)

(E) Outdoor Receptacle Outlets.

At least one receptacle outlet shall be installed outdoors. A receptacle outlet located in a compartment accessible from the outside of the park trailer shall be considered an outdoor receptacle. Outdoor receptacle outlets shall be protected as required in 552.41(C)(4).

(F) Receptacle Outlets Not Permitted.

(1) Shower or Bathtub Space.

Receptacle outlets shall not be installed in or within reach [750 mm (30 in.)] of a shower or bathtub space.

(2) Face-Up Position.

A receptacle shall not be installed in a face-up position in any countertop or other similar horizontal surface.

552.42 Branch-Circuit Protection.

(A) Rating.

The branch-circuit overcurrent devices shall be rated as follows:

(1) Not more than the circuit conductors

(2) Not more than 150 percent of the rating of a single appliance rated 13.3 amperes or more and supplied by an individual branch circuit

(3) Not more than the overcurrent protection size marked on an air conditioner or other motor-operated appliances.

(B) Protection for Smaller Conductors.

A 20-ampere fuse or circuit breaker shall be permitted for protection for fixtures, including luminaires, leads, cords, or small appliances, and 14 AWG tap conductors, not over 1.8 m (6 ft) long for recessed luminaires.

(C) Fifteen-Ampere Receptacle Considered Protected by 20 Amperes.

If more than one receptacle or load is on a branch circuit, 15-ampere receptacles shall be permitted to be protected by a 20-ampere fuse or circuit breaker.

552.43 Power Supply.

(A) Feeder.

The power supply to the park trailer shall be a feeder assembly consisting of not more than one listed 30-ampere or 50-ampere park trailer power-supply cord, with an integrally molded or securely attached cap, or a permanently installed feeder.

(B) Power-Supply Cord.

If the park trailer has a power-supply cord, it shall be permanently attached to the panelboard's enclosure, or to a junction box permanently connected to the panelboard's enclosure, with the free end terminating in a molded-on attachment plug cap.

Cords with adapters and pigtail ends, extension cords, and similar items shall not be attached to, or shipped with, park trailers.

A suitable clamp or the equivalent shall be provided at the panelboard's enclosure knockout to afford strain relief for the cord to prevent strain from being transmitted to the terminals when the power-supply cord is handled in its intended manner.

Cords shall be a listed type with 3-wire, 120-volt or 4-wire, 120/240-volt conductors, one of which shall be identified by a continuous green color or a continuous green color with one or more yellow stripes for use as the equipment grounding conductor.

(C) Mast Weatherhead or Raceway.

Where the calculated load exceeds 50 amperes or where a permanent feeder is used, the supply shall be by means of one of the following:

(1) One mast weatherhead installation, installed in accordance with Article 230, Part II, containing four continuous, insulated, color-coded feeder conductors, one of which is an equipment grounding conductor

(2) A rigid metal conduit, intermediate metal conduit, rigid polyvinyl chloride conduit, or other raceways identified for the location from the disconnecting means in the park trailer to the underside of the park trailer

552.44 Cord.

(A) Permanently Connected.

Each feeder assembly shall be factory supplied or factory installed and connected directly to the terminals of the panelboard or conductors within a junction box and provided with means to prevent strain from being transmitted to the terminals. The ampacity of the conductors between each junction box and the terminals of each panelboard shall be at least equal to the ampacity of the feeder cord. The supply end of the assembly shall be equipped with an attachment plug of the type described in 552.44(C). Where the cord passes through the walls or floors, it shall be protected by means of conduit and bushings or equivalent. The cord assembly shall have permanent provisions for protection against corrosion and mechanical damage while the unit is in transit.

(B) Cord Length.

The cord-exposed usable length shall be measured from the point of entrance to the park trailer or the face of the flanged surface inlet (motor-base attachment plug) to the face of the attachment plug at the supply end.

The cord-exposed usable length, measured to the point of entry on the unit exterior, shall be a minimum of 7.0 m (23 ft) where the point of entrance is at the side of the unit, or shall be a minimum 8.5 m (28 ft) where the point of entrance is at the rear of the unit. The maximum length shall not exceed 11 m (36½ ft).

Where the cord entrance into the unit is more than 900 mm (3 ft) above the ground, the minimum cord lengths above shall be increased by the vertical distance of the cord entrance heights above 900 mm (3 ft).

(C) Attachment Plugs.

(1) Units with Two to Five 15- or 20-Ampere Branch Circuits.

Park trailers wired in accordance with 552.46(A) shall have an attachment plug that shall be 2-pole, 3-wire grounding type, rated 30 amperes, 125 volts, conforming to the configuration shown in Figure 552.44(C)(1) intended for use with units rated at 30 amperes, 125 volts.

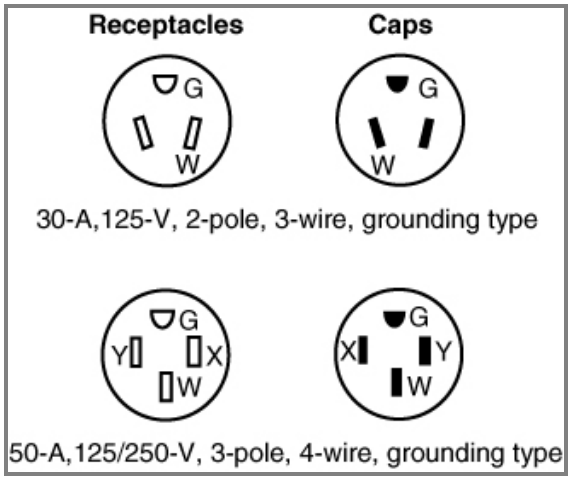
> Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure TT, for complete details of this configuration.

(2) Units with 50-Ampere Feeder Assembly.

Park trailers having a feeder assembly rated 50 amperes as permitted by 552.43(B) shall have a 3-pole, 4-wire grounding-type attachment plug rated 50 amperes, 125/250 volts, conforming to the configuration shown in Figure 552.44(C)(1).

> Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, Figure 14-50, for complete details of this configuration.

Figure 552.44(C)(1) Attachment Cap and Receptacle Configurations.



(D) Labeling at Electrical Entrance.

Each park trailer shall have a safety label with the signal word WARNING in minimum 6 mm (¼ in.) high letters and body text in minimum 3 mm (⅛ in.) high letters on a contrasting background. The safety label shall be affixed to the exterior skin, at or near the point of entrance of the feeder assembly and shall read, as appropriate:

WARNING:
THIS CONNECTION IS FOR 110–125-VOLT AC,
60 HZ, 30-AMPERE SUPPLY

or

WARNING:
THIS CONNECTION IS FOR 208Y/120-VOLT OR 120/240-VOLT AC, 3-POLE, 4-WIRE, 60 HZ, _____-AMPERE SUPPLY.

followed by

DO NOT EXCEED THE CIRCUIT RATING. EXCEEDING THE CIRCUIT RATING CAN CAUSE A FIRE AND RESULT IN DEATH OR SERIOUS INJURY.

The correct ampere rating shall be marked in the blank space and the label shall meet the requirements in 110.21(B).

(E) Location.

The point of entrance of a feeder assembly shall be located on either side or the rear, within 450 mm (18 in.), of an outside wall.

552.45 Panelboard.

(A) Listed and Appropriately Rated.

A listed and appropriately rated panelboard shall be used. The grounded conductor termination bar shall be insulated from the enclosure as provided in 552.55(C). An equipment grounding terminal bar shall be attached inside the metal enclosure of the panelboard.

(B) Location.

The panelboard shall be installed in a readily accessible location. Working clearance for the panelboard shall be not less than 600 mm (24 in.) wide and 750 mm (30 in.) deep.

Exception: Where the panelboard cover is exposed to the inside aisle space, one of the working clearance dimensions shall be permitted to be reduced to a minimum of 550 mm (22 in.). A panelboard shall be considered exposed where the panelboard cover is within 50 mm (2 in.) of the aisle's finished surface or not more than 25 mm (1 in.) from the backside of doors that enclose the space.

(C) Dead-Front Type.

The panelboard shall be of the dead-front type. A main disconnecting means shall be provided where fuses are used or where more than two circuit breakers are employed. A main overcurrent protective device not exceeding the feeder assembly rating shall be provided where more than two branch circuits are employed.

552.46 Branch Circuits.

Branch circuits shall be determined in accordance with 552.46(A) and 552.46(B).

(A) Two to Five 15- or 20-Ampere Circuits.

A maximum of five 15- or 20-ampere circuits to supply lights, receptacle outlets, and fixed appliances shall be permitted. Such park trailers shall be permitted to be equipped with panelboards rated at 120 volts maximum or 120/240 volts maximum and listed for a 30-ampere-rated feeder assembly. Not more than two 120-volt thermostatically controlled appliances shall be installed in such systems unless appliance isolation switching, energy management systems, or similar methods are used.

Exception No. 1: Additional 15- or 20-ampere circuits shall be permitted where a listed energy management system rated at 30 amperes maximum is employed within the system.

Exception No. 2: Six 15- or 20-ampere circuits shall be permitted without employing an energy management system, provided that the added sixth circuit serves only the power converter, and the combined load of all six circuits does not exceed the allowable load that was designed for use by the original five circuits.

Informational Note: See 210.23(B) for permissible loads. See 552.45(C) for main disconnect and overcurrent protection requirements.

(B) More Than Five Circuits.

Where more than five circuits are needed, they shall be determined in accordance with 552.46(B)(1), 552.46(B)(2), and 552.46(B)(3).

(1) Lighting.

Based on 33 volt-amperes/m^2 (3 VA/ft^2) multiplied by the outside dimensions of the park trailer (coupler excluded) divided by 120 volts to determine the number of 15- or 20-ampere lighting area circuits, for example,

$$\frac{3 \times \text{length} \times \text{width}}{120 \times 15 \text{ (or } 20)} = \text{No. of 15- (or 20-) ampere circuits} \quad \textbf{[552.46(B)(1)}$$

The lighting circuits shall be permitted to serve listed cord-connected kitchen waste disposers and to provide power for supplemental equipment and lighting on gas-fired ranges, ovens, or counter-mounted cooking units.

(2) Small Appliances.

Small-appliance branch circuits shall be installed in accordance with 210.11(C)(1).

(3) General Appliances.

For general appliances, including furnaces, water heaters, space heaters, ranges, and central or room air conditioners, an individual branch circuit shall be permitted to supply any load for which it is rated. There shall be one or more circuits of adequate rating in accordance with 552.46(B)(3)(a) through 552.46(B)(3)(d).

Informational Note No. 1: See 210.11(C)(2) for laundry branch circuits.

Informational Note No. 2: See Article 440, Parts I through VI, for central air conditioning.

(a) The total rating of fixed appliances shall not exceed 50 percent of the circuit rating if lighting outlets, general-use receptacles, or both are also supplied.

(b) For fixed appliances with a motor(s) larger than ⅛ horsepower, the total calculated load shall be based on 125 percent of the largest motor plus the sum of the other loads. Where a branch circuit supplies a continuous load(s) or any combination of continuous and noncontinuous loads, the branch-circuit conductor size shall comply with 210.19(A).

(c) The rating of a single cord- and plug-connected appliance supplied by other than an individual branch circuit shall not exceed 80 percent of the circuit rating.

(d) The rating of a range branch circuit shall be based on the range demand as specified for ranges in 552.47(B)(5).

552.47 Calculations.

The following method shall be employed in computing the supply-cord and distribution-panelboard load for each feeder assembly for each park trailer in lieu of the procedure shown in Article 120 and shall be based on a 3-wire, 208Y/120-volt or 120/240-volt supply with 120-volt loads balanced between the two phases of the 3-wire system.

(A) Lighting and Small-Appliance Load.

Lighting Volt-Amperes: Length times width of park trailer floor (outside dimensions) times 33 volt-amperes/m^2 (3 VA/ft^2). For example,

Length × width × 3 = lighting volt-amperes

Small-Appliance Volt-Amperes: Number of circuits times 1500 volt-amperes for each 20-ampere appliance receptacle circuit (see definition of *Appliance, Portable* with fine print note) including 1500 volt-amperes for laundry circuit. For example,

No. of circuits × 1500 = small-appliance volt-amperes

Total: Lighting volt-amperes plus small-appliance volt-amperes = total volt-amperes

First 3000 total volt-amperes at 100 percent plus remainder at 35 percent = volt-amperes to be divided by 240 volts to obtain current (amperes) per leg.

(B) Total Load for Determining Power Supply.

Total load for determining power supply is the sum of the following:

(1) Lighting and small-appliance load as calculated in 552.47(A).

(2) Nameplate amperes for motors and heater loads (exhaust fans, air conditioners, electric, gas, or oil heating). Omit smaller of the heating and cooling loads, except include blower motor if used as air-conditioner evaporator motor. Where an air conditioner is not installed and a 50-ampere power-supply cord is provided, allow 15 amperes per phase for air conditioning.

(3) Twenty-five percent of current of largest motor in 552.47(B)(2).

(4) Total of nameplate amperes for disposal, dishwasher, water heater, clothes dryer, wall-mounted oven, cooking units. Where the number of these appliances exceeds three, use 75 percent of total.

(5) Derive amperes for freestanding range (as distinguished from separate ovens and cooking units) by dividing the following values by 240 volts as shown in Table 552.47(B).

(6) If outlets or circuits are provided for other than factory-installed appliances, include the anticipated load.

Informational Note: See Informative Annex D, Example D12, for an illustration of the application of this calculation.

Table 552.47(B) Minimum Loads for Freestanding Electric Ranges

Nameplate Rating (watts)	Use (volt-amperes)
0–10,000	80 percent of rating
Over 10,000–12,500	8,000
Over 12,500–13,500	8,400
Over 13,500–14,500	8,800
Over 14,500–15,500	9,200
Over 15,500–16,500	9,600
Over 16,500–17,500	10,000

(C) Optional Method of Calculation for Lighting and Appliance Load.

For park trailers, the optional method for calculating lighting and appliance load shown in 120.82 shall be permitted.

552.48 Wiring Methods.

(A) Wiring Systems.

Cables and raceways installed in accordance with Articles 320, 322, 330 through 340, 342 through 362, 386, and 388 shall be permitted in accordance with their applicable article, except as otherwise specified in this article. An equipment grounding means shall be provided in accordance with 250.118.

(B) Conduit and Tubing.

Where rigid metal conduit or intermediate metal conduit is terminated at an enclosure with a locknut and bushing connection, two locknuts shall be provided, one inside and one outside of the enclosure. All cut ends of conduit and tubing shall be reamed or otherwise finished to remove rough edges.

(C) Nonmetallic Boxes.

Nonmetallic boxes shall be acceptable only with nonmetallic-sheathed cable or nonmetallic raceways.

(D) Boxes.

In walls and ceilings constructed of wood or other combustible material, boxes and fittings shall be flush with the finished surface or project therefrom.

(E) Mounting.

Wall and ceiling boxes shall be mounted in accordance with 314.23.

Exception No. 1: Snap-in-type boxes or boxes provided with special wall or ceiling brackets that securely fasten boxes in walls or ceilings shall be permitted.

Exception No. 2: A wooden plate providing a 38-mm (1½-in.) minimum width backing around the box and of a thickness of 13 mm (½ in.) or greater (actual) attached directly to the wall panel shall be considered as approved means for mounting outlet boxes.

(F) Cable Sheath.

The sheath of nonmetallic-sheathed cable, and the armor of metal-clad cable and Type AC cable, shall be continuous between outlet boxes and other enclosures.

(G) Protected.

Metal-clad, Type AC, or nonmetallic-sheathed cables and electrical nonmetallic tubing shall be permitted to pass through the centers of the wide side of 2 by 4 wood studs. However, they shall be protected where they pass through 2 by 2 wood studs or at other wood studs or frames where the cable or tubing would be less than 32 mm (1¼ in.) from the inside or outside surface. Steel plates on each side of the cable or tubing, or a steel tube, with not less than 1.35 mm (0.053 in.) wall thickness, shall be installed to protect the cable or tubing. These plates or tubes shall be securely held in place. Where nonmetallic-sheathed cables pass through punched, cut, or drilled slots or holes in metal members, the cable shall be protected by bushings or grommets securely fastened in the opening prior to installation of the cable.

(H) Cable Supports.

Where connected with cable connectors or clamps, cables shall be secured and supported within 300 mm (12 in.) of outlet boxes, panelboards, and splice boxes on appliances. Supports and securing shall be provided at intervals not exceeding 1.4 m (4½ ft) at other places.

(I) Nonmetallic Box Without Cable Clamps.

Nonmetallic-sheathed cables shall be secured and supported within 200 mm (8 in.) of a nonmetallic outlet box without cable clamps. Where wiring devices with integral enclosures are employed with a loop of extra cable to permit future replacement of the device, the cable loop shall be considered as an integral portion of the device.

(J) Physical Damage.

Where subject to physical damage, exposed nonmetallic cable shall be protected by covering boards, guard strips, raceways, or other means.

(K) Receptacle Faceplates.

Metal faceplates shall comply with 406.16(A). Nonmetallic faceplates shall comply with 406.16(C).

(L) Metal Faceplates Grounded.

Where metal faceplates are used, they shall be grounded.

(M) Moisture or Physical Damage.

Where outdoor or under-chassis wiring is 120 volts, nominal, or over and is exposed to moisture or physical damage, the wiring shall be protected by rigid metal conduit, by intermediate metal conduit, by electrical metallic tubing, by rigid polyvinyl chloride conduit, by other raceways identified for the location, or by Type MI cable that is closely routed against frames and equipment enclosures or other raceway or cable identified for the application.

(N) Component Interconnections.

Fittings and connectors that are intended to be concealed at the time of assembly shall be listed and identified for the interconnection of building components. Such fittings and connectors shall be equal to the wiring method employed in insulation, temperature rise, and fault-current withstanding, and shall be capable of enduring the vibration and shock occurring in park trailers.

(O) Method of Connecting Expandable Units.

The method of connecting expandable units to the main body of the park trailer shall comply with 552.48(O)(1) and 552.48(O)(2) as applicable.

(1) Cord- and Plug-Connected.

Cord and plug connections shall comply with 552.48(O)(1)(a) through 552.48(O)(1)(d).

(a) The portion of a branch circuit that is installed in an expandable unit shall be permitted to be connected to the portion of the branch circuit in the main body of the vehicle by means of an attachment plug and cord listed for hard usage. The cord and its connections shall comply with Article 400, Parts I and II, and be considered as a permitted use under 400.10. Where the attachment plug and cord are located within the park trailer's interior, use of plastic thermoset or elastomer parallel cord Type SPT-3, Type SP-3, or Type SPE shall be permitted.

(b) Where the receptacle provided for connection of the cord to the main circuit is located on the outside of the park trailer, it shall be protected with a ground-fault circuit interrupter for personnel and be listed for wet locations. A cord located on the outside of a park trailer shall be identified for outdoor use.

(c) Unless removable or stored within the park trailer interior, the cord assembly shall have permanent provisions for protection against corrosion and mechanical damage while the park trailer is in transit.

(d) The attachment plug and cord shall be installed so as not to permit exposed live attachment plug pins.

(2) Direct Wires Connected.

That portion of a branch circuit that is installed in an expandable unit shall be permitted to be connected to the portion of the branch circuit in the main body of the park trailer by means of flexible cord installed in accordance with 552.48(O)(2)(a) through 552.48(O)(2)(f) or other approved wiring method.

(a) The flexible cord shall be listed for hard usage and for use in wet locations.

(b) The flexible cord shall be permitted to be exposed on the underside of the vehicle.

(c) The flexible cord shall be permitted to pass through the interior of a wall or floor assembly or both a maximum concealed length of 600 mm (24 in.) before terminating at an outlet or junction box.

(d) Where concealed, the flexible cord shall be installed in nonflexible conduit or tubing that is continuous from the outlet or junction box inside the park trailer to a weatherproof outlet box, junction box, or strain relief fitting listed for use in wet locations that is located on the underside of the park trailer. The outer jacket of flexible cord shall be continuous into the outlet or junction box.

(e) Where the flexible cord passes through the floor to an exposed area inside of the park trailer, it shall be protected by means of conduit and bushings or equivalent.

(f) Where subject to physical damage, the flexible cord shall be protected with RMC, IMC, Schedule 80 PVC, reinforced thermosetting resin conduit (RTRC) listed for exposure to physical damage, or other approved means and shall extend at least 150 mm (6 in.) above the floor. A means shall be provided to secure the flexible cord where it enters the park trailer.

(P) Prewiring for Air-Conditioning Installation.

Prewiring installed for the purpose of facilitating future air-conditioning installation shall comply with the applicable portions of this article and the following:

(1) An overcurrent protective device with a rating compatible with the circuit conductors shall be installed in the panelboard and wiring connections completed.

(2) The load end of the circuit shall terminate in a junction box with a blank cover or other listed enclosure. Where a junction box with a blank cover is used, the free ends of the conductors shall be adequately capped or taped.

(3) A safety label with the word WARNING in minimum 6 mm (¼ in.) high letters and body text in minimum 3 mm (⅛ in.) high letters on a contrasting background shall be affixed on or adjacent to the junction box and shall read as follows:

WARNING
AIR-CONDITIONING CIRCUIT.
THIS CONNECTION IS FOR AIR CONDITIONERS
RATED 110–125-VOLT AC, 60 HZ,
____ AMPERES MAXIMUM.
DO NOT EXCEED CIRCUIT RATING.
EXCEEDING THE CIRCUIT RATING MAY
CAUSE A FIRE AND RESULT IN
DEATH OR SERIOUS INJURY

An ampere rating not to exceed 80 percent of the circuit rating shall be legibly marked in the blank space.

(4) The circuit shall serve no other purpose.

(Q) Prewiring for Other Circuits.

Prewiring installed for the purpose of installing other appliances or devices shall comply with the applicable portions of this article and the following:

(1) An overcurrent protection device with a rating compatible with the circuit conductors shall be installed in the panelboard with wiring connections completed.

(2) The load end of the circuit shall terminate in a junction box with a blank cover or a device listed for the purpose. Where a junction box with blank cover is used, the free ends of the conductors shall be adequately capped or taped.

(3) A safety label with the signal word WARNING in minimum 6 mm (¼ in.) high letters and body text in minimum 3 mm (⅛ in.) high letters on a contrasting background shall be affixed on or adjacent to the junction box or device listed for the purpose and shall read as follows:

WARNING
THIS CONNECTION IS FOR _____ RATED _____ VOLT AC, 60 HZ, _____ AMPERES MAXIMUM. DO NOT EXCEED CIRCUIT RATING. EXCEEDING THE CIRCUIT RATING MAY CAUSE A FIRE AND RESULT IN DEATH OR SERIOUS INJURY.

An ampere rating not to exceed 80 percent of the circuit rating shall be legibly marked in the blank space.

552.49 Maximum Number of Conductors in Boxes.

The maximum number of conductors permitted in boxes shall be in accordance with 314.16.

552.50 Grounded Conductors.

The identification of grounded conductors shall be in accordance with 200.7.

552.51 Connection of Terminals and Splices.

Conductor splices and connections at terminals shall be in accordance with 110.14.

552.52 Switches.

Switches shall be rated as required by 552.52(A) and 552.52(B).

(A) Lighting Circuits.

For lighting circuits, switches shall be rated not less than 10 amperes, 120/125 volts, and in no case less than the connected load.

(B) Motors or Other Loads.

For motors or other loads, switches shall have ampere or horsepower ratings, or both, adequate for loads controlled. (An ac general-use snap switch shall be permitted to control a motor 2 hp or less with full-load current not over 80 percent of the switch ampere rating.)

(C) Location.

Switches shall not be installed within wet locations in tub or shower spaces unless installed as part of a listed tub or shower assembly.

552.53 Receptacles.

All receptacle outlets shall be of the grounding type and installed in accordance with 210.21 and 406.12.

552.54 Luminaires.

(A) General.

Any combustible wall or ceiling finish exposed between the edge of a canopy or pan of a luminaire or ceiling suspended (paddle) fan and the outlet box shall be covered with noncombustible material or a material identified for the purpose.

(B) Shower Luminaires.

If a luminaire is provided over a bathtub or in a shower stall, it shall be of the enclosed and gasketed type and listed for the type of installation, and it shall be ground-fault circuit-interrupter protected.

(C) Outdoor Outlets, Luminaires, Air-Cooling Equipment, and So On.

Outdoor luminaires and other equipment shall be listed for outdoor use or wet locations.

552.55 Grounding.

(See also 552.57 on bonding of non–current-carrying metal parts.)

(A) Power-Supply Grounding.

The equipment grounding conductor in the supply cord or feeder shall be connected to the equipment grounding bus or other approved equipment grounding means in the panelboard.

(B) Panelboard.

The panelboard shall have an equipment grounding bus with sufficient terminals for all equipment grounding conductors or other approved grounding means.

(C) Insulated Grounded Conductor.

The grounded circuit conductor shall be insulated from the equipment grounding conductors and from equipment enclosures and other grounded parts. The grounded circuit conductor terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and wall-mounted ovens shall be insulated from the equipment enclosure. Bonding screws, straps, or buses in the panelboard or in appliances shall be removed and discarded. Connection of electric ranges and electric clothes dryers utilizing a grounded conductor, if cord-connected, shall be made with 4-conductor cord and 3-pole, 4-wire, grounding-type plug caps and receptacles.

552.56 Interior Equipment Grounding.

(A) Exposed Metal Parts.

In the electrical system, all exposed metal parts, enclosures, frames, luminaire canopies, and so forth, shall be effectively bonded to the grounding terminals or enclosure of the panelboard.

(B) Equipment Grounding Conductors.

Bare conductors or conductors with insulation or individual covering that is green or green with one or more yellow stripes shall be used for equipment grounding conductors only.

(C) Grounding of Electrical Equipment.

Where grounding of electrical equipment is specified, it shall be permitted as follows:

(1) Connection of metal raceway (conduit or electrical metallic tubing), the sheath of Type MC and Type MI cable where the sheath is identified for grounding, or the armor of Type AC cable to metal enclosures.

(2) A connection between the one or more equipment grounding conductors and a metal box by means of a grounding screw, which shall be used for no other purpose, or a listed grounding device.

(3) The equipment grounding conductor in nonmetallic-sheathed cable shall be permitted to be secured under a screw threaded into the luminaire canopy other than a mounting screw or cover screw or attached to a listed grounding means (plate) in a nonmetallic outlet box for luminaire mounting (grounding means shall also be permitted for luminaire attachment screws).

(D) Grounding Connection in Nonmetallic Box.

A connection between the one or more grounding conductors brought into a nonmetallic outlet box shall be arranged so that a connection can be made to any fitting or device in that box that requires grounding.

(E) Grounding Continuity.

Where more than one equipment grounding conductor of a branch circuit enters a box, all such conductors shall be in good electrical contact with each other, and the arrangement shall be such that the disconnection or removal of a receptacle, fixture, including a luminaire, or other device fed from the box will not interfere with or interrupt the grounding continuity.

(F) Cord-Connected Appliances.

Cord-connected appliances, such as washing machines, clothes dryers, refrigerators, and the electrical system of gas ranges, and so on, shall be grounded by means of an approved cord with equipment grounding conductor and grounding-type attachment plug.

552.57 Bonding of Non–Current-Carrying Metal Parts.

(A) Required Bonding.

All exposed non–current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboard.

(B) Bonding Chassis.

A bonding conductor shall be connected between any panelboard and an accessible terminal on the chassis. Bonding terminations shall be suitable for the environment in which the conductors and terminations are installed.

Exception: Any park trailer that employs a unitized metal chassis-frame construction to which the panelboard is securely fastened with a bolt(s) and nut(s) or by welding or riveting shall be considered to be bonded.

(C) Bonding Conductor Requirements.

Grounding terminals shall be of the solderless type and listed as pressure terminal connectors recognized for the wire size used. The bonding conductor shall be solid or stranded, insulated or bare, and shall be 8 AWG copper minimum or equivalent.

(D) Metallic Roof and Exterior Bonding.

The metal roof and exterior covering shall be considered bonded where both of the following conditions apply:

(1) The metal panels overlap one another and are securely attached to the wood or metal frame parts by metal fasteners.

(2) The lower panel of the metal exterior covering is secured by metal fasteners at each cross member of the chassis, or the lower panel is connected to the chassis by a metal strap.

(E) Gas, Water, and Waste Pipe Bonding.

The gas, water, and waste pipes shall be considered grounded if they are bonded to the chassis.

(F) Furnace and Metal Air Duct Bonding.

Furnace and metal circulating air ducts shall be bonded.

552.58 Appliance Accessibility and Fastening.

Every appliance shall be accessible for inspection, service, repair, and replacement without removal of permanent construction. Means shall be provided to securely fasten appliances in place when the park trailer is in transit.

552.59 Outdoor Outlets, Fixtures, Including Luminaires, Air-Cooling Equipment, and So On.

(A) Listed for Outdoor Use.

Outdoor fixtures, including luminaires, and equipment shall be listed for outdoor use. Outdoor receptacle outlets shall be in accordance with 406.9(A) and 406.9(B). Switches and circuit breakers installed outdoors shall comply with 404.6.

(B) Outside Heating Equipment, Air-Conditioning Equipment, or Both.

A park trailer provided with a branch circuit designed to energize outside heating equipment or air-conditioning equipment, or both, located outside the park trailer, other than room air conditioners, shall have such branch-circuit conductors terminate in a listed outlet box or disconnecting means located on the outside of the park trailer. A safety label with the word WARNING in minimum 6 mm (¼ in.) high letters and body text in minimum 3 mm (⅛ in.) high letters on a contrasting background shall be affixed within 150 mm (6 in.) from the listed box or disconnecting means and shall read as follows:

WARNING
THIS CONNECTION IS FOR HEATING
AND/OR AIR-CONDITIONING EQUIPMENT.
THE BRANCH CIRCUIT IS RATED AT NOT MORE THAN _____ AMPERES, AT _____ VOLTS, 60 HZ, _____ CONDUCTOR AMPACITY.
A DISCONNECTING MEANS SHALL BE
LOCATED WITHIN SIGHT OF THE EQUIPMENT.
EXCEEDING THE CIRCUIT RATING MAY CAUSE A FIRE AND RESULT IN DEATH OR SERIOUS INJURY.

The correct voltage and ampere rating shall be given.

Part V. Factory Tests

552.60 Factory Tests (Electrical).

Each park trailer shall be subjected to the tests required by 552.60(A) and 552.60(B).

(A) Circuits of 120 Volts or 120/240 Volts.

Each park trailer designed with a 120-volt or a 120/240-volt electrical system shall withstand the applied voltage without electrical breakdown of a 1 minute, 900-volt dielectric strength test, or a 1 second, 1080-volt dielectric strength test, with all switches closed, between ungrounded and grounded conductors and the park trailer ground. During the test, all switches and other controls shall be in the “on” position. Fixtures, including luminaires, and permanently installed appliances shall not be required to withstand this test.

Each park trailer shall be subjected to the following:

(1) A continuity test to ensure that all metal parts are properly bonded

(2) Operational tests to demonstrate that all equipment is properly connected and in working order

(3) Polarity checks to determine that connections have been properly made

(4) Receptacles requiring GFCI protection shall be tested for correct function by the use of a GFCI testing device

(B) Low-Voltage Circuits.

An operational test of low-voltage circuits shall be conducted to demonstrate that all equipment is connected and in electrical working order. This test shall be performed in the final stages of production after all outer coverings and cabinetry have been secured.

Additional Proposed Changes

File Name	Description	Approved
CN_286.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 286 appeared in the First Draft Report.

The Correlating Committee directs CMP 7 to review Article 552 regarding equipment required to be

listed that is unique to this Article and consider creation of a Section 552.2 in accordance with Section 2.2.1 of the NEC Style Manual.

Related Item

• Correlating Committee Note No. 286

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 01 20:18:17 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8247-NFPA 70-2024
Statement: All electrical materials, devices, appliances, fittings, and other equipment must be listed and labeled. This moves the listing requirements to XXX.2 section in compliance with the NEC Style Manual.

Correlating Committee Note No. 286-NFPA 70-2024 [Global Input]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:36:34 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review Article 552 regarding equipment required to be listed that is unique to this Article and consider creation of a Section 552.2 in accordance with Section 2.2.1 of the NEC Style Manual.

Ballot Results

This item has passed ballot

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 567-NFPA 70-2024 [Section No. 552.1]

552.1 Scope.

This article covers the electrical conductors and equipment installed within or on park trailers not covered fully under Articles 550 and 551.

Additional Proposed Changes

File Name	Description	Approved
CN_282.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 282 appeared in the First Draft Report on First Revision No. 8595.

The Correlating Committee directs CMP 7 to review FR 8595 with respect to clarifying the scope section and specify what is covered under Articles 550 and 551 or, remove the reference(s) as applicable or, verify why it is necessary for context.

Related Item

- First Revision No. 8595

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 31 17:30:07 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8250-NFPA 70-2024
Statement: This article covers the electrical conductors and equipment installed within or on park trailers. It does not cover the distribution system that supplies the park trailer.

Correlating Committee Note No. 282-NFPA 70-2024 [Section No. 552.1]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:05:49 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review FR 8595 with respect to clarifying the scope section and specify what is covered under Articles 550 and 551 or, remove the reference(s) as applicable or, verify why it is necessary for context.

First Revision No. 8595-NFPA 70-2024 [Section No. 552.1]

Ballot Results

This item has passed ballot

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 587-NFPA 70-2024 [Section No. 552.45]

552.45 Panelboard.

(A) Listed and Appropriately Rated.

A listed and appropriately rated panelboard shall be used. The grounded conductor termination bar shall be insulated from the enclosure as provided in 552.55(C). An equipment grounding terminal bar shall be attached inside the metal enclosure of the panelboard.

(B) Location.

The panelboard shall be installed in a readily accessible location. Working clearance for the panelboard shall be not less than 600 mm (24 in.) wide and 750 mm (30 in.) deep.

Exception: Where the panelboard cover is exposed to the inside aisle space, one of the working clearance dimensions shall be permitted to be reduced to a minimum of 550 mm (22 in.). A panelboard shall be considered exposed where the panelboard cover is within 50 mm (2 in.) of the aisle's finished surface or not more than 25 mm (1 in.) from the backside of doors that enclose the space.

(C) Dead-Front Type.

The panelboard shall be of the dead-front type. A main disconnecting means shall be provided where fuses are used or where more than two circuit breakers are employed. A main overcurrent protective device not exceeding the feeder assembly rating shall be provided where more than two branch circuits are employed.

Additional Proposed Changes

File Name	Description	Approved
CN_284.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 284 appeared in the First Draft Report.

The Correlating Committee directs CMP-7 to review all the listing requirements in Article 552 for relocation to 552.2 to comply with the NEC Style Manual Section 2.2.1for parallel numbering. In addition, review the use of "appropriately".

Related Item

• Correlating Committee Note No. 284

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 01 20:11:47 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action:	Rejected but see related SR
Resolution:	SR-8251-NFPA 70-2024
Statement:	Listing requirements have been moved to XXX.2 section in compliance with the NEC Style Manual. The grounding terminal bar requirements are redundant with the grounding section of the article.

Correlating Committee Note No. 284-NFPA 70-2024 [Section No. 552.45]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:17:59 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP-7 to review all the listing requirements in Article 552 for relocation to 552.2 to comply with the NEC Style Manual Section 2.2.1 for parallel numbering. In addition, review the use of “appropriately”.

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 590-NFPA 70-2024 [Article 555]

Article 555 Marinas, Boatyards, Floating Buildings, and Docking Facilities

Part I. General

555.1 Scope.

This article covers the installation of wiring and equipment in the areas comprising fixed or floating piers, wharves, docks, floating buildings, and other areas in marinas, boatyards, boat basins, boathouses, yacht clubs, boat condominiums, docking facilities associated with one-family dwellings, two-family dwellings, multifamily dwellings, and residential condominiums; any multiple docking facility or similar occupancies; and facilities that are used, or intended for use, for the purpose of repair, berthing, launching, storage, or fueling of small craft and the moorage of floating buildings.

Informational Note No. 1: See NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards,* for additional information.

Informational Note No. 2: Where boats, floating buildings, docks, and similar structures are connected to an electrical source or a supply of electricity, hazardous voltages and currents may create serious safety concerns.

555.5 Maximum Voltage — ac Only.

Pier power distribution systems shall not exceed 600 volts phase to phase.

555.6 Load Calculations for Service and Feeder Conductors.

General lighting and other loads shall be calculated in accordance with Article 120, Part III. The demand factors set forth in 120.120 shall be permitted for each service and/or feeder circuit supplying receptacles that provide shore power for boats.

555.7 Transformers.

(A) General.

Transformers and enclosures shall be identified for wet locations. The bottom of transformer enclosures shall not be located below the electrical datum plane.

(B) Replacements.

Transformers and enclosures shall be identified for wet locations where replacements are made.

555.8 Marine Hoists, Railways, Cranes, and Monorails.

Motors and controls for marine hoists, railways, cranes, and monorails shall not be located below the electrical datum plane. Where it is necessary to provide electric power to a mobile crane or hoist in the yard and a trailing cable is utilized, it shall be a listed portable power cable rated for the conditions of use and be provided with an outer jacket of distinctive color for safety.

555.9 Engineered Design.

Documentation of the engineered electrical design of the pier distribution system shall be provided upon request of the AHJ.

555.10 Signage.

Permanent safety signs shall be installed to give notice of electrical shock hazard risks to persons using or swimming near a docking facility, boatyard, or marina and shall comply with all of the following:

(1) The signage shall comply with 110.21(B)(1) and be of sufficient durability to withstand the environment.

(2) The signs shall be clearly visible from all approaches to a marina, docking facility, or boatyard facility.

(3) The signs shall state “WARNING — POTENTIAL SHOCK HAZARD — ELECTRICAL CURRENTS MAY BE PRESENT IN THE WATER.”

555.11 Motor Fuel Dispensing Stations — Hazardous (Classified) Locations.

Electrical wiring and equipment located at or serving motor fuel dispensing locations shall comply with Article 514 in addition to the requirements of this article.

555.12 Repair Facilities — Hazardous (Classified) Locations.

Electrical wiring and equipment located at facilities for the repair of marine craft containing flammable or combustible liquids or gases shall comply with Article 511 in addition to the requirements of this article.

555.13 Bonding of Non-Current-Carrying Metal Parts.

All metal parts in contact with the water, all metal piping, and all non-current-carrying metal parts that are likely to become energized shall be connected to one of the following:.

(1) The branch circuit or feeder equipment grounding conductor

(2) The grounding bus in the panelboard using solid copper conductors; insulated, covered, or bare; not smaller than 8 AWG

Connections to bonded parts shall be made in accordance with 250.8.

555.14 Equipotential Planes and Bonding of Equipotential Planes.

Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water where the following conditions exist:

(1) Where the system voltage exceeds 250 volts to ground

(2) Where the equipment is located within 3 m (10 ft) of the body of water

(A) Equipotential Plane Construction.

Equipotential planes shall encompass the area around outdoor service equipment and extend from the area directly below the equipment out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment. Bonding to equipotential planes shall be provided as specified in 555.14(A)(1) or 555.14(A)(2) and be attached to metallic enclosures that are likely to become energized with a solid copper conductor, insulated, covered or bare, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel.

Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) Copper Grid.

Copper grid shall comply with the following requirements:

(1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing in accordance with 250.8 or other approved means

(2) Be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

(3) Only listed splicing devices or exothermic welding permitted to be used

(B) Areas Not Requiring Equipotential Planes.

Equipotential planes shall not be required for the controlled utilization equipment on the docking facility or floating building supplied by the service equipment or disconnecting means.

555.15 Servicing and Replacing of Equipment.

Servicing or replacing of electrical enclosures, devices, or wiring methods shall be done in accordance with 555.15(A) or 555.15(B).

(A) Servicing.

Equipment that has been damaged shall be recognized, documented, and serviced by a qualified person to the edition of this code to which it was originally installed.

(B) Replacing.

When replacement of equipment is necessary, a qualified person shall document and replace the equipment in accordance with the requirements of this code. The installation shall require an inspection of the circuit. Any servicing necessary to address issues discovered during the inspection shall be done in accordance with 555.15(A).

> Informational Note: NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards*, is a resource for guiding the electrical inspection of a marina.

555.16 Electrical Datum Plane Distances.

(A) Floating Piers.

The electrical datum plane for floating piers and boat landing stages that is (1) installed to permit rise and fall response to water level and without lateral movement, and (2) so equipped that piers and landing stages can rise to the datum plane established for 555.16(B) or 555.16(C), shall be a horizontal plane 762 mm (30 in.) above the water level at the floating pier or boat landing stage and a minimum of 305 mm (12 in.) above the level of the deck.

(B) Areas Subject to Tidal Fluctuations.

In land areas subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane that is 606 mm (2 ft) above the highest tide level for the area occurring under normal circumstances, based on the highest high tide.

(C) Areas Not Subject to Tidal Fluctuations.

In land areas not subject to tidal fluctuation, the electrical datum plane shall be a horizontal plane that is 606 mm (2 ft) above the highest water level for the area occurring under normal circumstances.

555.17 Location of Service Equipment.

The service equipment for a floating building, dock, or marina shall be located on land no closer than 1.5 m (5 ft) horizontally from and adjacent to the structure served, but not on or in the structure itself or any other floating structure. Service equipment shall be elevated a minimum of 300 mm (12 in.) above the electrical datum plane.

Part II. Marinas, Boatyards, and Docking Facilities

555.30 Electrical Equipment and Connections.

(A) General.

(1) Location.

All electrical components within electrical equipment (excluding wiring methods) and connections not intended for operation while submerged shall be located at least 305 mm (12 in.) above the deck of a fixed or floating structure, but not below the electrical datum plane.

(2) Wiring Connectors.

Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required for floating structures where located above the waterline but below the electrical datum plane.

(B) Replacements.

(1) Location.

Replacement electrical connections shall be located at least 305 mm (12 in.) above the deck of a floating or fixed structure.

(2) Wiring Connectors.

Conductor splices, within junction boxes identified for wet locations, utilizing sealed wire connector systems listed and identified for submersion shall be required where located above the waterline but below the electrical datum plane.

555.31 Electrical Equipment Enclosures.

(A) Securing and Supporting.

Electrical equipment enclosures installed on piers above deck level shall be securely and substantially supported by structural members, independent of any conduit connected to them. If enclosures are not attached to mounting surfaces by means of external ears or lugs, the internal screw heads shall be sealed to prevent seepage of water through mounting holes.

(B) Location.

Electrical equipment enclosures on piers shall be located so as not to interfere with mooring lines.

555.32 Circuit Breakers, Switches, Panelboards, and Marina Power Outlets.

Circuit breakers and switches installed in gasketed enclosures shall be arranged to permit required manual operation without exposing the interior of the enclosure. All such enclosures shall be arranged with a weep hole to discharge condensation.

555.33 ac Only Receptacles.

Receptacles shall be mounted not less than 305 mm (12 in.) above the deck surface of the pier and not below the electrical datum plane on a fixed pier.

(A) Shore Power Receptacles.

(1) Enclosures.

Receptacles intended to supply shore power to boats shall be enclosed in listed marina power outlets, enclosures listed for wet locations, or be installed in listed enclosures protected from the weather. The integrity of the assembly shall not be affected when the receptacles are in use with any type of booted or nonbooted attachment plug/cap inserted.

(2) Strain Relief.

Means shall be provided where necessary to reduce the strain on the plug and receptacle caused by the weight and catenary angle of the shore power cord.

(3) Branch Circuits.

Each single receptacle that supplies shore power to boats shall be supplied from a marina power outlet or panelboard by an individual branch circuit of the voltage class and rating corresponding to the rating of the receptacle.

> Informational Note: Supplying receptacles at voltages other than the voltages marked on the receptacle may cause overheating or malfunctioning of connected equipment, for example, supplying single-phase, 120/240-volt, 3-wire loads from a 208Y/120-volt, 3-wire source.

(4) Ratings.

Shore power for boats shall be provided by single receptacles rated not less than 30 amperes.

Informational Note: See NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards*, for locking- and grounding-type receptacles for auxiliary power to boats.

(a) Receptacles rated 30 amperes and 50 amperes shall be the locking and grounding type.

Informational Note: See ANSI/NEMA WD 6-2016, *Wiring Devices — Dimensional Specifications*, for various configurations and ratings of locking- and grounding-type receptacles and caps.

(b) Receptacles rated 60 amperes or higher shall be the pin and sleeve type.

Informational Note: See ANSI/UL 1686, *UL Standard for Safety Pin and Sleeve Configurations*, for various configurations and ratings of pin and sleeve receptacles.

(B) Other Than Shore Power.

Receptacles other than those supplying shore power to boats shall be permitted to be enclosed in marina power outlets with the receptacles that provide shore power to boats if the receptacles are marked to clearly indicate that they are not to be used to supply power to boats.

(C) Replacement Receptacles.

The requirements in 555.33 shall apply to the replacement of marina receptacles.

555.34 Wiring Methods and Installation.

(A) Wiring Methods.

(1) General.

Wiring methods of Chapter 3 shall be permitted where identified for use in wet locations and shall contain a wire-type insulated equipment grounding conductor.

(2) Portable Power Cables.

Extra-hard usage cord and extra-hard usage portable power cables rated not less than 75°C (167°F) and 600 volts, listed for use in the environment within which it is installed, shall be permitted as follows:

(1) As permanent wiring on the underside of piers (floating or fixed)

(2) Where flexibility is necessary as on piers composed of floating sections

(B) Installation.

(1) Overhead Wiring.

Overhead wiring shall be installed to avoid possible contact with masts and other parts of boats being moved in the yard.

Conductors and cables shall be routed to avoid wiring closer than 6.0 m (20 ft) from the outer edge or any portion of the yard that can be used for moving vessels or stepping or unstepping masts.

(2) Outdoor Branch Circuits and Feeders.

Multiple feeders and branch circuits shall be permitted and clearances for overhead branch-circuit and feeder wiring in locations of the boatyard other than those described in 555.34(B)(1) shall be located not less than 5.49 m (18 ft) above grade. Only Article 225, Part I, shall apply to marina installations.

(3) Portable Power Cables.

(a) Where portable power cables are permitted by 555.34(A)(2), the installation shall comply with the following:

(1) Cables shall be properly supported.

(2) Cables shall be located on the underside of the pier.

(3) Cables shall be securely fastened by nonmetallic clips to structural members other than the deck planking.

(4) Cables shall not be installed where subject to physical damage.

(5) Where cables pass through structural members, they shall be protected against chafing by a permanently installed oversized sleeve of nonmetallic material.

(b) Where portable power cables are used as permitted in 555.34(A)(2)(2), there shall be a junction box of corrosion-resistant construction with permanently installed terminal blocks on each pier section to which the feeders and feeder extensions are to be connected. A listed marina power outlet employing terminal blocks/bars shall be permitted in lieu of a junction box. Metal junction boxes and covers, and metal screws and parts that are exposed externally to the boxes, shall be of corrosion-resistant materials or protected by material resistant to corrosion.

(4) Protection.

Rigid metal conduit, intermediate metal conduit, reinforced thermosetting resin conduit (RTRC) listed for aboveground use, or rigid polyvinyl chloride (PVC) conduit suitable for the location shall be used to protect wiring to a point at least 2.5 m (8 ft) above docks, decks of piers, and landing stages. The conduit shall be connected to the enclosure by full standard threads or fittings listed for use in damp or wet locations, as applicable.

555.35 Ground-Fault Protection of Equipment (GFPE) and Ground-Fault Circuit Interrupters (GFCIs).

Ground-fault protection of equipment (GFPE) serving docking facilities and piers shall be provided in accordance with 555.35(A) through 555.35(E).

(A) Feeders and Branch Circuits.

Feeders and branch circuits shall be provided with listed GFPE rated not more than 100 milliamperes (mA).

Exception No. 1: The load side conductors of a separately derived system and circuit supplying ground-fault monitoring equipment that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

Exception No. 2: Feeders for fire pumps shall be permitted to use ground-fault monitoring without disconnecting power to the fire pump in accordance with the following:

(1) The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.

(2) The alarm shall be audible and visual.

(3) The alarm shall be located where it can be monitored by qualified personnel.

(B) Receptacles and Outlets.

(1) Receptacles Providing Shore Power.

Listed GFPE, rated not more than 30 mA, shall be provided for receptacles installed in accordance with 555.33(A).

(2) Outlets for Other than Shore Power.

GFCI protection for personnel shall be provided for outlets under the following conditions:

(1) The branch circuit is single-phase, does not exceed 150 volts to ground, and is rated 60 amperes or less.

(2) The branch circuit is 3-phase, does not exceed 150 volts to ground, and is rated 100 amperes or less.

Exception to (1) and (2): Low-voltage circuits not requiring grounding, not exceeding the low-voltage contact limit, and supplied by listed transformers or power supplies that comply with 680.23(A)(2) shall be permitted to be installed without ground-fault protection.

(C) Boat Hoists.

GFCI protection for personnel shall be provided for outlets not exceeding 240 volts that supply boat hoists installed at docking facilities. GFCI-protected receptacles for other than shore power shall be permitted to supply boat hoists.

(D) Leakage Current Measurement Device.

Where more than three receptacles supply shore power to boats, a listed leakage current measurement device for use in marina applications shall be available and be used to determine leakage current from each boat that will use shore power. The listing requirement for the leakage current measurement device for use in marina applications shall become effective January 1, 2026.

Informational Note No. 1: Leakage current measurement will provide the capability to determine when an individual boat has defective wiring or other problems contributing to hazardous voltage and current. The use of a test device will allow the facility operator to identify a boat that is creating problems. In some cases a single boat could cause an upstream GFPE device protecting a feeder to operate even though multiple boats are supplied from the same feeder. The use of a test device will help the facility operator prevent a particular boat from contributing to hazardous voltage and current in the marina area.

Informational Note No. 2: An annual test of each boat with the leakage current measurement device is a prudent step toward determining if a boat has defective wiring that could be contributing hazardous voltage and current. Where the leakage current measurement device reveals that a boat is contributing hazardous voltage and current, repairs should be made to the boat before it is permitted to use shore power.

Exception: Where shore power equipment includes a leakage indicator and leakage alarm, a separate leakage test device shall not be required.

(E) Coordination and Performance Testing.

GFPE protection systems shall be coordinated and performance tested by an approved method when first installed on site. This testing shall be conducted by a qualified person(s) in accordance with the manufacturer's instructions. A written record of this testing shall be made available to the authority having jurisdiction.

555.36 Disconnecting Means for Shore Power Connection(s).

Disconnecting means shall be provided to isolate each boat from its supply connection(s).

(A) Type.

The disconnecting means shall consist of a circuit breaker, switch, or both, and shall be properly identified as to which receptacle it controls.

(B) Location.

The disconnecting means shall be readily accessible, located not more than 762 mm (30 in.) from the receptacle it controls, and located in the supply circuit ahead of the receptacle. Circuit breakers or switches located in marina power outlets complying with this section shall be permitted as the disconnecting means.

(C) Emergency Electrical Disconnects.

Emergency electrical disconnects shall comply with the following:

(1) Each marina power outlet or enclosure that provides shore power to boats shall be provided with a listed emergency shutoff device or electrical disconnect that is clearly marked “Emergency Shutoff” in accordance with 110.22(A).

(2) The emergency shutoff device or electrical disconnect shall be within sight of the marina power outlet or other enclosure that provides shore power to boats, readily accessible, externally operable, manually resettable, and listed for use in wet locations.

(3) The emergency shutoff device or electrical disconnect shall de-energize the power supply to all circuits supplied by the marina power outlet(s) or enclosure(s) that provide shore power to boats. A circuit breaker handle shall not be used for this purpose.

555.37 Equipment Grounding Conductor.

(A) Equipment to Be Connected to Equipment Grounding Conductor.

The following items shall be connected to an equipment grounding conductor run with the circuit conductors in the same raceway, cable, or trench:

(1) Metal boxes, metal cabinets, and all other metal enclosures

(2) Metal frames of utilization equipment

(3) Grounding terminals of grounding-type receptacles

(B) Type of Equipment Grounding Conductor.

An equipment grounding conductor shall be of the wire-type, insulated, and sized in accordance with 250.122 but not smaller than 12 AWG.

(C) Feeder Equipment Grounding Conductor.

Where a feeder supplies a remote enclosed panelboard or other distribution equipment, an insulated equipment grounding conductor shall extend from a grounding terminal in the service to a grounding terminal and busbar in the remote enclosed panelboard or other distribution equipment.

(D) Branch-Circuit Equipment Grounding Conductor.

The insulated equipment grounding conductor for branch circuits shall terminate at a grounding terminal in a remote panelboard, in other distribution equipment, or in the main service equipment.

(E) Cord-and-Plug-Connected Appliances.

Unless double-insulated, cord-and-plug-connected appliances shall be grounded by means of an equipment grounding conductor in the cord and a grounding-type attachment plug.

Exception: An equipment grounding conductor shall be permitted to be uninsulated if a part of a listed cable assembly identified for the environment and not subject to atmospheres or environments such as, but not limited to, storm water basins, sewage treatment ponds, and natural bodies of water containing salt water.

555.38 Luminaires.

(A) General.

Luminaires and their supply connections shall be secured to structural elements of the marina to limit damage from watercraft and prevent entanglement of and interaction with sea life.

Informational Note: See 410.2 for requirements related to listing and retrofit requirements for luminaires.

(B) Underwater Luminaires.

Luminaires installed below the highest high tide level or electrical datum plane and likely to be periodically submersed shall be limited to those luminaires that comply with the following:

(1) Identified as submersible

(2) Operate below the low-voltage contact limit defined in Article 100

(3) Supplied by an isolating transformer or power supply in accordance with 680.23(A)(2)

Part III. Floating Buildings

555.50 Service Conductors.

One set of service conductors shall be permitted to serve more than one set of service equipment.

555.51 Feeder Conductors.

Each floating building shall be supplied by a single set of feeder conductors from its service equipment.

Exception: Where the floating building has multiple occupancy, each occupant shall be permitted to be supplied by a single set of feeder conductors extended from the occupant's service equipment to the occupant's panelboard.

555.52 Installation of Services and Feeders.

(A) Flexibility.

Flexibility of the wiring system shall be maintained between floating buildings and the supply conductors. All wiring shall be installed so that motion of the water surface and changes in the water level will not result in unsafe conditions.

(B) Wiring Methods.

Liquidtight flexible metal conduit or liquidtight flexible nonmetallic conduit with approved fittings shall be permitted for feeders and where flexible connections are required for services. Extra-hard usage portable power cable listed for both wet locations and sunlight resistance shall be permitted for a feeder to a floating building where flexibility is required. Other raceways suitable for the location shall be permitted to be installed where flexibility is not required.

555.53 Ground-Fault Protection.

The main overcurrent protective device that feeds the floating building shall have ground-fault protection not exceeding 100 mA. Ground-fault protection of each individual branch or feeder circuit shall be permitted as a suitable alternative. Outdoor outlets, shore power outlets, and boat hoists located at floating buildings shall comply with 555.35(B) and 555.35(C).

555.54 Grounding.

Grounding at floating buildings shall comply with 555.54(A) through 555.54(D).

(A) Grounding of Electrical and Nonelectrical Parts.

Grounding of both electrical and nonelectrical parts in a floating building shall be through connection to a grounding bus in the building enclosed panelboard.

(B) Installation and Connection of Equipment Grounding Conductor.

The equipment grounding conductor shall be installed with the feeder conductors and connected to a grounding terminal in the service equipment.

(C) Identification of Equipment Grounding Conductor.

The equipment grounding conductor shall be an insulated copper conductor with a continuous outer finish that is either green or green with one or more yellow stripes. For conductors larger than 6 AWG, or where multiconductor cables are used, re-identification of conductors allowed in 250.119(B)(2)b. and (B)(2)c. shall be permitted.

(D) Grounding Electrode Conductor Connection.

The grounding terminal in the service equipment shall be grounded by connection through an insulated grounding electrode conductor to a grounding electrode on shore.

555.55 Insulated Neutral.

The grounded circuit conductor (neutral) shall be an insulated conductor identified in compliance with 200.7. The neutral conductor shall be connected to the equipment grounding terminal in the service equipment, and, except for that connection, it shall be insulated from the equipment grounding conductors, equipment enclosures, and all other grounded parts. The neutral conductor terminals in the panelboard and in ranges, clothes dryers, counter-mounted cooking units, and the like shall be insulated from the enclosures.

555.56 Equipment Grounding.

(A) Electrical Systems.

All enclosures and exposed metal parts of electrical systems shall be connected to the grounding bus.

(B) Cord-Connected Appliances.

Where required to be grounded, cord-connected appliances shall be grounded by means of an equipment grounding conductor in the cord and a grounding-type attachment plug.

Additional Proposed Changes

File Name	Description	Approved
CN_287.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 287 appeared in the First Draft Report.

The Correlating Committee directs CMP 7 to review Article 555 regarding equipment required to be listed that is unique to this Article and consider creation of a Section 555.2 in accordance with Section 2.2.1 of the NEC Style Manual.

Related Item

• Correlating Committee Note No. 287

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Thu Aug 01 20:20:00 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8114-NFPA 70-2024

Statement: Listing language is added in accordance with Section 2.2.1 of the NEC Style Manual. The XXX.2 section of Article 555 will address equipment unique to marina and dock installations that are required to be listed.

Correlating Committee Note No. 287-NFPA 70-2024 [Global Input]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 22:37:06 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review Article 555 regarding equipment required to be listed that is unique to this Article and consider creation of a Section 555.2 in accordance with Section 2.2.1 of the NEC Style Manual.

Ballot Results

This item has passed ballot

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.

Public Comment No. 797-NFPA 70-2024 [Section No. 555.9]

~~**555.9** Engineered Design.~~

~~Documentation of the engineered electrical design of the pier distribution system shall be provided upon request of the AHJ.~~

Statement of Problem and Substantiation for Public Comment

There is no requirement for a design to be engineered, so what is "the" engineered design that this section is refering to? Perhaps a requirement for the design to be engineered is warranted, but without such a requirement the language of 555.9 does not make sense. If the CMP decides to make a requirement for an engineered design, I hope the scope's inclusion of small residential facilities is considered. Requiring an engineered deisgn for a 20A branch circuit in a person's backyard seems excessive.
Language such as "installations excceding 240V nominal shall be designed by a qualified engineer. Documentation of the design shall be available upon the request of the authority having jurisdiction" or similar such language could perhpas satisfy the intent of the CMP.

Related Item

• FR 8382

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:

Submittal Date: Mon Aug 05 13:04:36 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8118-NFPA 70-2024
Statement: The request for a design is excluded for smaller dwelling unit installations.

Public Comment No. 156-NFPA 70-2024 [Section No. 555.13]

555.13 Bonding of Non-Current-Carrying Metal Parts.

All ~~metal parts in contact with the water, all metal piping, and all~~ non-current-carrying metal parts that are likely to become energized shall be connected to one of the following:.

(1) The branch circuit or feeder equipment grounding conductor

(2) The grounding bus in the panelboard using solid or stranded copper conductors; insulated, covered, or bare; not smaller than 8 AWG and sized to the largest overcurrent device associated with the circuit feeding the dock or floating building.

Connections to bonded parts shall be made in accordance with 250.8.

Additional Proposed Changes

File Name	Description	Approved
.1721678518829	Backup material.	
2026_Article_555.13_proposed_change_clarification.pdf		

Statement of Problem and Substantiation for Public Comment

Confusion in the wording of "likely to be energized" in 555.13. Detailed description of the issue is in the attached letter.

Related Item

• Public Input from Mike Holt #3258

Submitter Information Verification

Submitter Full Name: Robert Greco
Organization: Acra Electric Inc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Jul 22 15:35:57 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8178-NFPA 70-2024

Statement: The text removes the reference to “all metal parts in contact with the water, all metal piping” to only require the metal parts that are “likely to become energized” to be bonded using a conductor not larger than a #8 AWG to facilitate the operation of the ground fault devices.

ACRA ELECTRIC INC.

State Certified Electrical Contractors

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July 22, 2024

Proposed change to NEC 555.13

The 2020 NEC changes included the deletion of Article 553 – "Floating Buildings" and integrating Article 553 into Article 555 – "Marinas, Boatyards, **Floating Buildings**, and Commercial and Noncommercial Docking Facilities."

2017 Article 553.11 stated, "All metal parts in contact with the water, all metal piping, and all non-current-carrying metal parts that are likely to become energized shall be connected to the grounding buss in the panelboard." I researched this section and found that it was first seen in the 1987 NEC, when Article 553 Floating Buildings was introduced. My assumption was that a floating building back in '87 was typically a structure built on a steel barge with power from shore feeding a panel in the floating structure. It would make perfect sense to bond all metal parts associated with the floating building to the panelboard in the floating building.

Article 553.11 did not change through 8 code cycles until in 2011 the words "may become energized" changed to "are likely to become energized."

Fast forward to 2020 NEC and 553.11 becomes 555.13, with the addition of the caveat "using solid copper conductors" … "not smaller than #8 AWG."

I have spoken to two members of NEC Code Panel 7 and also a number of electrical engineers who concur that the words "likely to become energized" should apply to all metal parts on a dock, in or out of the water. They agree that items such as ladders, dock hardware and other dock accessories mounted on a wood or composite dock are certainly NOT likely to become energized, and connecting them to the equipment grounding conductor increases the likelihood of them becoming energized and potentially dangerous. These changes have, what I consider to be, unintended consequences when trying to apply the code to residential wood docks, which are the majority of the installations we see on a day-to-day basis.

The confusion is in the structure of the sentence. All metal parts in contact with the water and all metal piping comes before "likely to be energized", and some jurisdictions are interpreting the code to say that All metal parts in the water are to be bonded, even if they are not likely to be energized, as in the case of an aluminum ladder mounted to a wood or composite dock.

There is always a difference of potential voltage between remote earth (the canal) and the electrical ground from the utility. We have observed from .35 volts to over 1 volt AC. It is never 0. This is NEV, Neutral Earth Voltage, and it is caused by voltage drop on the neutral from the

utility. This constant voltage causes the metal to degrade prematurely due to electrolysis, plus increases the possibility of electric shock from someone in the water using the ladder. In the case of a “floating neutral” or lost neutral either in the home or on the utility side, the danger increases dramatically as a potentially lethal amount of current takes all available paths to return to the source.

The overriding issue here is electrical safety on docks. One cannot compare grounding and bonding of metal parts on docks to the requirements in Article 680 for pools. In a swimming pool scenario, the goal is to create an equipotential plane among ALL metal parts including ladders, screen enclosures, lights, pumps, the water, the deck, so that there is no touch potential difference. In the case where the utility had a failed neutral, the entire pool area would rise at the same potential, and you could compare that scenario to a “bird on a wire.” This scenario could not be duplicated on a boat dock since the water will never be at the same potential as the electrical ground, and so the rules that apply to pools cannot be applied to docks. It should also be noted that a GFCI circuit breaker will not save you from any amount of NEV. The breaker will not trip because there is no imbalance in the circuit. This is also why it is important to avoid swimming onto a boat lift from the canal. It is an invisible danger that lurks beyond all safety mechanisms. We don’t want the ladder to be subject to the same danger.

Sincerely,

Robert Greco
President
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Public Comment No. 799-NFPA 70-2024 [Section No. 555.13]

555.13 Bonding of Non-Current-Carrying Metal Parts.

~~All metal parts in contact with the water~~ If they are likely to become energized , all metal ~~piping,~~ parts and all ~~non-current-carrying metal parts that are likely to become energized~~ metal piping shall be connected to one of the following:.

(1) The branch circuit or feeder equipment grounding conductor

(2) The grounding bus in the panelboard using solid copper conductors; insulated, covered, or bare; not smaller than 8 AWG

Connections to bonded parts shall be made in accordance with 250.8.

Statement of Problem and Substantiation for Public Comment

If the current sentence is diagramed, the rule requires every metal object touching water to be bonded, not just those that are likely to become energized. This means that literally hundreds of isolated nuts, bolts, and washers need to be bonded together. This does not increase electrical safety, nor is it warranted.

Related Item

• FR 8315

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:

Submittal Date: Mon Aug 05 13:16:09 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8178-NFPA 70-2024

Statement: The text removes the reference to “all metal parts in contact with the water, all metal piping” to only require the metal parts that are “likely to become energized” to be bonded using a conductor not larger than a #8 AWG to facilitate the operation of the ground fault devices.

Public Comment No. 798-NFPA 70-2024 [Section No. 555.14]

555.14 Equipotential Planes and Bonding of Equipotential Planes.

Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water ~~where~~ if the following conditions exist:

(1) ~~Where the~~ The system voltage exceeds 250 volts to ground

(2) ~~Where the~~ The equipment is located within 3 m (10 ft) of the body of water

(A) Equipotential Plane Construction.

Equipotential planes shall encompass the area around outdoor service equipment or disconnecting means and extend from the area directly below the equipment out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment. Bonding to equipotential planes shall be provided as specified in 555.14(A)(1) or 555.14(A)(2) and be attached to metallic enclosures that are likely to become energized with a solid copper conductor, insulated, covered or bare, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel.

Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) Copper Grid.

Copper grid shall comply with the following requirements:

(1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing in accordance with 250.8 or other approved means

(2) Be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

(3) Only listed splicing devices or exothermic welding permitted to be used

(B) Areas Not Requiring Equipotential Planes.

Equipotential planes shall not be required for the controlled utilization equipment on the docking facility or floating building supplied by the service equipment or disconnecting means.

Statement of Problem and Substantiation for Public Comment

The language in (A), as written, applies only to the service equipment. The charging language in 555.14 and the language in 555.14(B) both refer to other disconnecting means, but the language in (A) does not.
The "where" to "if" language change is just editorial to comply with the style manual.

Related Item

• FR 8321

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:

City:

State:

Zip:

Submittal Date: Mon Aug 05 13:12:16 EDT 2024

Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8142-NFPA 70-2024

Statement: The language in (A), as written, applied only to the service equipment. The charging language in Sections 555.14 and 555.14(B) both refer to other disconnecting means, but the language in (A) did not. The "where" to "if" language change is to comply with the NEC Style Manual. In addition, the reference was changed to include the language for unencapsulated welded wire and nonconductive surfaces added under a separate revision.

555.14(A)(2) Item (3) phrase is corrected.

Public Comment No. 1337-NFPA 70-2024 [New Section after 555.14(A)(2)]

TITLE OF NEW CONTENT

(3) Unencapsulated steel structural welded wire reinforcement, bonded together by steel tie wires or the equivalent and fully embedded within the surface material.

If the structural reinforcing steel is absent, or is encapsulated in a nonconductive compound, or if embedding is not possible, unencapsulated welded wire steel reinforcement or a copper conductor grid shall be provided and shall be secured directly under the paving, and not more than 150 mm (6 in.) below finished grade.

Statement of Problem and Substantiation for Public Comment

This comment is being submitted on behalf of the Minnesota Department of Labor and Industry. Currently, the Department's inspection staff includes 14-office/field staff, 50-state field inspectors, 4-virtual inspectors and 22 plus contract electrical inspectors that complete over 170,000 electrical inspections annually.

Added a new (3) to correlate with the changes in 680.26 regarding pool bonding for consistency. This comment will also be submitted for First Revision No. 8722-NFPA 70-2024 Section No. 547.44, and First Revision No. 8420-NFPA 70-2024 Section No. 682.33.

Related Item

• First Revision No. 8321-NFPA 70-2024 Section No. 555.14

Submitter Information Verification

Submitter Full Name: Dean Hunter
Organization: Minnesota Department of Labor
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 17:19:57 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8143-NFPA 70-2024
Statement: New item (3) is in concert with similar changes in Section 680.26 regarding pool bonding grid. Item (4) was added to address installations where the equipotential plane was never installed, or when there is no surface material to embed the equipotential plane.

Public Comment No. 29-NFPA 70-2024 [Section No. 555.15]

555.15 Servicing and Replacing of Equipment.

Servicing or replacing of ~~electrical enclosures, devices, or wiring methods shall~~ equipment shall be done in accordance with 555.15(A) or 555.15(B).

(A) Servicing.

Equipment that has been damaged shall be recognized, documented, and serviced by a qualified person to the edition of this code to which it was originally installed.

(B) Replacing.

When replacement of equipment is necessary, a qualified person shall document and replace the equipment in accordance with the requirements of this code. The installation shall require an inspection of the circuit. Any servicing necessary to address issues discovered during the inspection shall be done in accordance with 555.15(A).

Informational Note: NFPA 303-2021, *Fire Protection Standard for Marinas and Boatyards*, is a resource for guiding the electrical inspection of a marina.

Statement of Problem and Substantiation for Public Comment

This PC proposes to use the defined term "equipment" in the requirement. This will correlate with the title of the section and the requirements in (A) and (B).

Related Item

• FR 8410

Submitter Information Verification

Submitter Full Name: Vincent Della Croce
Organization: Siemens
Street Address:
City:
State:
Zip:
Submittal Date: Wed Jul 10 18:37:23 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8163-NFPA 70-2024 Wiring methods have been retained since they may not be included in the term equipment.

Statement: The defined term "equipment" as added in the requirement includes enclosures, and devices. The revision correlates with the title of the section and the requirements in (A) and (B).

Public Comment No. 802-NFPA 70-2024 [Section No. 555.35(A)]

(A) Feeders and Branch Circuits.

Feeders and branch circuits shall be provided with listed GFPE rated not more than 100 milliamperes (mA).

Exception No. 1: The load side conductors of a separately derived system and circuit supplying ground-fault monitoring equipment that do not exceed 3 m (10 ft) and are installed in a raceway shall be permitted to be installed without ground-fault protection. This exception shall also apply to the supply terminals of the equipment supplied by the transformer secondary conductors.

Exception No. 2: Feeders for fire pumps shall ~~be permitted to~~ use ground-fault monitoring without disconnecting power to the fire pump in accordance with the following:

(1) The ground-fault monitor alarm shall notify upon ground faults exceeding 100 mA.

(2) The alarm shall be audible and visual.

(3) The alarm shall be located where it can be monitored by qualified personnel.

Statement of Problem and Substantiation for Public Comment

I don't think the added language was substantiated, but if we are going to have it it needs to be right. As written, the language is permissive, not mandatory. Is the intent to require it or just allow it? It was clear beofre (Article 695 prohibits it), but now the CMP has modifed that section with a permission instead of a requirement.

Related Item

• FR 9038

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:
Submittal Date: Mon Aug 05 13:41:25 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8176-NFPA 70-2024
Statement: Many times, if a fire pump is located on a dock, pier, or wharf the fire pump wiring could potentially contribute to leakage current in the water. Ground-fault monitoring alerts personnel in the vicinity.

Public Comment No. 2049-NFPA 70-2024 [Section No. 555.35(B)(1)]

(1) Receptacles Providing Shore Power.

Listed GFPE or EGFPD , rated not more than 30 mA, shall be provided for receptacles installed in accordance with 555.33(A).

Statement of Problem and Substantiation for Public Comment

EGFPDs are different devices than GFPE. While officially they cannot be considered personnel level protection, because of their adjustable settings, they are tested and certified to follow the personnel protection curve of UL 943. These devices ensure that fault currents above 100 mA will react quickly within the personnel protection level. By adding EGFPDs as an option at the shore power receptacle level, it does not interfere with the coordination.

Related Item

- PI4403

Submitter Information Verification

Submitter Full Name: Mark Pollock
Organization: Littelfuse
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 28 16:57:24 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected

Resolution: The proposed technology has merit; however, no substantiation has been provided to validate or confirm that additional protections and faster tripping levels are necessary for protection. There is no prohibition to use a UL 1053 device.

Public Comment No. 803-NFPA 70-2024 [Section No. 555.35(E)]

(E) ~~Coordination and~~ Selective Coordination. GFPE protection systems shall be selectively coordinated

(F) Performance Testing.

~~- GFPE protection systems shall be coordinated and performance tested by an approved method when first installed on site. This testing shall be conducted by a qualified person(s) in accordance with the manufacturer's instructions. A written record of this testing shall be made available to the authority having jurisdiction.~~

Statement of Problem and Substantiation for Public Comment

"Coordination" is not a defined term, "selective coordination" is. If the intent is that the overcurrent protective devices be selectively coordinated, we need to say that.
This comment also breaks up two very different requirements into to subsections, as required by the Style Manual. Performance testing of the GFPE system is not the same as selectively coordinating overcurrent protective devices.

Related Item

• FR 9037

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:

Submittal Date: Mon Aug 05 13:46:12 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected

Resolution: Coordination of overcurrent protection devices is commonly used in healthcare facilities. Selective coordination includes overcurrent protective devices for a full range of available overcurrents, from overloads to the available fault current, and for the full range of overcurrent protective device opening times which would include all the upstream overcurrent protection. Coordination used in this context only includes the coordination of the overcurrent devices back to the distribution system equipment where the feeders or branch circuits originate.

Public Comment No. 1358-NFPA 70-2024 [Sections 604.100(A)(1), 604.100(A)(2)]

Sections 604.100(A)(1), 604.100(A)(2)

(1) Cables.

Cables shall be listed Type AC cables or listed Type MC cables containing nominal 600-volt, 8 AWG to 12 AWG insulated copper conductors or 6 AWG to 10 AWG insulated copper -clad aluminum ~~or copper~~ conductors. .

Other cables specified in 794.135, 800.113, and830.179 shall be permitted in manufactured wiring systems for wiring of equipment within the scope of their respective articles.

(2) Conduits and Tubing.

Conduits and tubing shall comply with the requirements of 604.100(A)(2)(a) and 604.100(A)(2)(b).

(a) Conduits and tubing shall be listed and one of the following types:

(2) Flexible metal conduit (FMC)

(3) Liquidtight flexible metal conduit (LFMC)

(4) Liquidtight flexible nonmetallic conduit (LFNC)

(5) Electrical metallic tubing (EMT)

(f) The wiring method shall contain nominal 600-volt, 8 AWG to 12 AWG insulated copper conductors or 6 AWG to 10 AWG insulated copper -clad aluminum ~~or copper conductors with~~ conductors with a bare or insulated copper-clad aluminum or copper equipment grounding conductor equivalent in size to the ungrounded conductor.

Exception No. 1 to (1) and (2): Tap conductors for a luminaire no longer than 1.8 m (6 ft) and intended for connection to a single luminaire shall be permitted to contain conductors smaller than 12 AWG but not smaller than 18 AWG.

Exception No. 2 to (1) and (2): Listed manufactured wiring assemblies containing conductors smaller than 12 AWG shall be permitted for remote-control, signaling, or communications circuits.

Exception No. 3 to (2): Listed manufactured wiring systems containing unlisted flexible metal conduit of noncircular cross section or trade sizes smaller than permitted by 348.20(A), or both, shall be permitted where the wiring systems are supplied with fittings and conductors at the time of manufacture.

Statement of Problem and Substantiation for Public Comment

To maintain consistency throughout the code, the size range for copper-clad aluminum cables should be set between 6 AWG and 10 AWG to align with the ampacity requirements for copper.

Related Item

• FR 8749

Submitter Information Verification

Submitter Full Name: Sam Muhamed
Organization: The Aluminum Association
Affiliation: The Aluminum Association
Street Address:
City:
State:
Zip:
Submittal Date: Wed Aug 21 12:39:34 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR

Resolution: SR-8295-NFPA 70-2024

Statement: The size of copper clad aluminum conductors should be appropriately sized for the equivalent current carrying capacity of copper to maintain consistency throughout the NEC.

The section references in (A)(1) have been revised due to changes made under separate revisions.

Public Comment No. 1261-NFPA 70-2024 [Section No. 682.33]

682.33 Equipotential Planes and Bonding of Equipotential Planes.

Equipotential planes shall be installed adjacent to all outdoor service equipment or disconnecting means that control equipment in or on water where the following conditions exist:

(1) Where the system voltage exceeds ~~250 volts~~ 120 volts nominal, to ground

(2) Where the equipment is located within 3 m (10 ft) of the body of water

(A) Equipotential Plane Construction.

Equipotential planes shall encompass the area around outdoor service equipment and extend from the area directly below the equipment out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment. Bonding to equipotential planes shall be provided as specified in 682.33(A)(1) or 682.33(A)(2) and be attached to metallic enclosures that are likely to become energized with a solid copper conductor, insulated, covered or bare, and not smaller than 8 AWG.

(1) Structural Reinforcing Steel.

Unencapsulated structural reinforcing steel shall be bonded together by steel tie wires or the equivalent.

(2) Copper Grids.

Copper grids shall comply with the following requirements:

(1) Be constructed of minimum 8 AWG bare solid copper conductors bonded to each other at all points of crossing in accordance with 250.8 or other approved means

(2) Be arranged in a 300 mm (12 in.) by 300 mm (12 in.) network of conductors in a uniformly spaced perpendicular grid pattern with a tolerance of 100 mm (4 in.)

(3) Only listed splicing devices or exothermic welding are permitted to be used

(B) Areas Not Requiring Equipotential Planes.

Equipotential planes shall not be required for the controlled equipment supplied by the service equipment or disconnecting means.

(C) Bonding.

(1) Bonded Parts.

The parts specified in 682.33(C)(1) through 682.33(C)(3) shall be bonded together and to the electrical grounding system. Bonding conductors shall be solid copper, insulated, covered or bare, and not smaller than 8 AWG. Connections shall be made by exothermic welding or by listed pressure connectors or clamps that are labeled as being suitable for the purpose and are stainless steel, brass, copper, or copper alloy.

(2) Outdoor Service Equipment and Disconnects.

Outdoor service equipment or disconnecting means that control equipment in or on water, that have metallic enclosures and controls accessible to personnel, and that are likely to become energized shall be bonded to equipotential planes.

(3) Walking Surfaces.

Surfaces directly below the equipment specified in 682.33(C)(2) but not less than 900 mm (36 in.) in all directions from the equipment from which a person would be able to stand and come in contact with the equipment shall be bonded to equipotential planes with wire mesh or other conductive elements on, embedded in, or placed under the walk surface within 75 mm (3 in.).

Statement of Problem and Substantiation for Public Comment

682.33 (1) Should include systems of 120 volt, nominal to ground as this would include a large number of installations where public safety could be at risk. This would then include 208 volt or 240 volt which are very common.

Related Item

• FR8420

Submitter Information Verification

Submitter Full Name: Clay Carroll
Organization: Ace Electric Inc.
Affiliation: IEC
Street Address:
City:
State:
Zip:
Submittal Date: Sun Aug 18 19:42:21 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected
Resolution: The proposed comment to change the threshold voltage to 120-volts to ground has merit but has not been substantiated by the submitter.

Public Comment No. 1336-NFPA 70-2024 [New Section after 682.33(A)(2)]

TITLE OF NEW CONTENT

(3) Unencapsulated steel structural welded wire reinforcement, bonded together by steel tie wires or the equivalent and fully embedded within the surface material.

If the structural reinforcing steel is absent, or is encapsulated in a nonconductive compound, or if embedding is not possible, unencapsulated welded wire steel reinforcement or a copper conductor grid shall be provided and shall be secured directly under the paving, and not more than 150 mm (6 in.) below finished grade.

Statement of Problem and Substantiation for Public Comment

This comment is being submitted on behalf of the Minnesota Department of Labor and Industry. Currently, the Department's inspection staff includes 14-office/field staff, 50-state field inspectors, 4-virtual inspectors and 22 plus contract electrical inspectors that complete over 170,000 electrical inspections annually.

Added a new (3) to correlate with the changes in 680.26 regarding pool bonding for consistency. This comment will also be submitted for First Revision No. 8722-NFPA 70-2024 Section No. 547.44, and First Revision No. 8321-NFPA 70-2024 Section No. 555.14.

Related Item

• First Revision No. 8420-NFPA 70-2024 Section No. 682.33

Submitter Information Verification

Submitter Full Name: Dean Hunter
Organization: Minnesota Department of Labor
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 20 17:13:46 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8207-NFPA 70-2024
Statement: New item (3) is in concert with similar changes in Section 680.26 regarding pool bonding grid. Item (4) was added to address installations where the equipotential plane was never installed, or when there is no surface material to embed the equipotential plane.

Public Comment No. 836-NFPA 70-2024 [Section No. 682.33(A) [Excluding any Sub-Sections]]

Equipotential planes shall encompass the area around outdoor service equipment and disconnecting means and extend from the area directly below the equipment out not less than 900 mm (36 in.) in all directions from which a person would be able to stand and come in contact with the equipment. Bonding to equipotential planes shall be provided as specified in 682.33(A)(1) or 682.33(A)(2) and be attached to metallic enclosures that are likely to become energized with a solid copper conductor, insulated, covered or bare, and not smaller than 8 AWG.

Statement of Problem and Substantiation for Public Comment

682.33 addresses disconnecting means that are not service equipment, but 682.33(A) only discusses the service equipment.

Related Item

• FR 8420

Submitter Information Verification

Submitter Full Name: Ryan Jackson
Organization: Self-employed
Street Address:
City:
State:
Zip:
Submittal Date: Tue Aug 06 12:09:16 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8211-NFPA 70-2024
Statement: The language in 682.33 addresses disconnecting means that are not service equipment, but existing 682.33(A) only discusses the service equipment. “Bonding” was added to the title of the section. Text for bonding connections was incorporated from (C).555.14(A)(2) Item (3) phrase is corrected.

Public Comment No. 711-NFPA 70-2024 [Part VII.]

Part VII. Marinas, Boatyards, Floating Buildings, and Commercial and Noncommercial Docking Facilities

Additional Proposed Changes

File Name	Description	Approved
CN_214.pdf		

Statement of Problem and Substantiation for Public Comment

NOTE: The following CC Note No. 214 appeared in the First Draft Report.

The Correlating Committee directs CMP 7 to review the title to Article 220 Part VII and Section 220.120. The phrase “commercial and noncommercial” was removed from the title of Article 555 and also should be deleted from these locations.

Related Item

• Correlating Committee Note No. 214

Submitter Information Verification

Submitter Full Name: CC Notes
Organization: NEC Correlating Committee
Street Address:
City:
State:
Zip:
Submittal Date: Fri Aug 02 14:13:26 EDT 2024
Committee: NEC-P07

Committee Statement

Committee Action: Rejected but see related SR
Resolution: SR-8305-NFPA 70-2024
Statement: The deletion of commercial and noncommercial is consistent with the change to the title of Article 555.

Correlating Committee Note No. 214-NFPA 70-2024 [Part VII.]

Submitter Information Verification

Committee: NEC-AAC
Submittal Date: Thu May 09 12:02:46 EDT 2024

Committee Statement

Committee Statement: The Correlating Committee directs CMP 7 to review the title to Article 220 Part VII and Section 220.120. The phrase “commercial and noncommercial” was removed from the title of Article 555 and also should be deleted from these locations.

Ballot Results

✔ **This item has passed ballot**

12 Eligible Voters
1 Not Returned
11 Affirmative All
0 Affirmative with Comments
0 Negative with Comments
0 Abstention

Not Returned

McDaniel, Roger D.

Affirmative All

Ayer, Lawrence S.
Bowmer, Trevor N.
Hickman, Palmer L.
Holub, Richard A.
Jackson, Peter D.
Kendall, David H.
Manche, Alan
Osborne, Robert D.
Porter, Christine T.
Schultheis, Timothy James
Williams, David A.