

Chapter E 318

CONTINUOUS RIGID CABLE SUPPORTS

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E 318.01 Definition. (1) A continuous rigid cable support is a unit or an assembly of units or sections, and associated fittings, made of metal or other noncombustible materials forming a continuous rigid structure used to support cables. Continuous rigid cable supports include ladders, troughs, channels, and other similar structures.

(2) It is not the intent of this chapter to require that cables be supported by continuous rigid cable supports or to recognize the use of conductors described in chapter E 310 in continuous rigid cable supports for general wiring.

History: Cr. Register, January, 1968, No. 145, eff. 2-1-68.

E 318.02 Use. (1) Continuous rigid cable supports may be used as the mechanical support for only the following wiring methods under the conditions detailed in the chapter for each wiring method:

(a) Mineral-insulated metal-sheathed cables, (Wis. Adm. Code chapter E 330), (b) Aluminum sheathed cable, (chapter E 331), (c) Metal-clad cable, (chapter E 334), (d) Nonmetallic sheathed cable, (chapter E 336), (e) Service entrance cables, (chapter E 338), (f) Underground feeder and branch circuit cable, (chapter E 339), (g) Any approved conduit or raceway with its contained conductors.

(2) Continuous rigid cable supports may be used as the mechanical support for factory-assembled, multiconductor control, signal, and power cables, which are specifically approved for installation in continuous rigid cable supports in fire-resistive or non-combustible construction, but shall not be used (a) in hoistways, (b) where the cables supported are subject to severe physical damage, (c) in areas having readily combustible contents as determined by the authority enforcing this code. Continuous rigid cable supports may be used to support cables in hazardous locations when the cables are specifically approved for such use. (Refer to Wis. Adm. Code sections E 501.04, E 502.04 and E 503.03.)

History: Cr. Register, January, 1968, No. 145, eff. 2-1-68.

E 318.03 Construction. Continuous rigid cable supports shall be approved for the purpose and shall comply with the following:

(1) Shall have suitable strength and rigidity to provide adequate support for all contained wiring.

(2) Shall not present sharp edges, burrs or projections injurious to the insulation or jackets of the wiring.

(3) If made of metal, shall be adequately protected against corrosion or shall be made of corrosion-resistant material.

(4) Shall have side rails or equivalent structural members.

(5) Shall include fittings for changes in direction and elevation of runs.

History: Cr. Register, January, 1968, No. 145, eff. 2-1-68.

E 318.04 Installation. (1) Continuous rigid cable supports shall be installed as a complete support system.

(2) Each run of continuous rigid cable support shall be complete before the installation of cables.

(3) Continuous rigid cable supports shall be mechanically connected to any enclosure or raceway into which the cables contained in the continuous rigid cable support extend or terminate.

(4) In portions of runs where additional physical protection is required, noncombustible covers or enclosures providing the required protection shall be used.

(5) Installations involving different electrical systems shall comply with section E 300.03 and where separation is required, the separation shall be a solid noncombustible partition or compartment. Where cables, as permitted by section E 318.02 (2) are installed in the same continuous rigid cable support as the cables permitted by section E 318.02 (1), the requirements of this section shall apply.

(6) When continuous rigid cable supports are installed in tiers, the minimum vertical clearance between tiers shall be 12 inches.

(7) Continuous rigid cable supports may extend transversely through partitions or walls, other than fire walls, provided the section of the support within the wall is continuous and unventilated. See section E 300.21.

(8) Continuous rigid cable supports may extend vertically through dry floors and platforms provided the continuous rigid cable support is totally enclosed where it passes through the floor or platform opening and for a distance of 6 feet above the floor or platform to provide protection from physical injury. See section E 300.21.

(9) Continuous rigid cable supports may extend vertically through floors and platforms in wet locations where (a) there are curbs or other suitable means to prevent water flow through the floor or platform opening and (b) the continuous rigid cable support is totally enclosed where it passes through the floor or platform opening and for a distance of 6 feet above the floor or platform to provide protection from physical injury. See section E 300.21.

(10) Cable splices and cable taps shall be made only in junction boxes or fittings approved for the purpose.

(11) In other than horizontal runs, and where side rails do not provide adequate containment of the cables, they shall be fastened securely to transverse members of the continuous rigid cable support.

(12) Where continuous rigid cable supports are located adjacent to one another an adequate working space of 24 inches minimum should be maintained on one side of each continuous rigid cable support, or where grouped in rows adjacent to each other a minimum working space of 32 inches should be maintained over each continuous rigid cable support.

(13) A minimum vertical clearance of 6 inches should be maintained from the top of the continuous rigid cable support to all ceilings, beams, and other obstructions.

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E 318.05 Grounding. All metal sections of continuous rigid cable supports and fittings shall be bonded and effectively grounded to provide a continuous circuit for fault current. A continuous rigid cable support system shall not be used either as a grounded circuit conductor or as an equipment grounding conductor. See Wis. Adm. Code section E 250.033.

History: Cr. Register, January, 1968, No. 145, eff. 2-1-68.

E 318.06 Ampacity. The ampacities of cables installed in continuous rigid cable supports shall be as follows:

(1) Where cables containing not more than three current-carrying conductors are installed in ventilated continuous rigid cable supports and spacing is maintained at from one-quarter to one cable diameter, the factors of table E 318.06 (1) shall be applied to the ampacities of the cables used,

TABLE E 318.06 (1)
FACTORS FOR CABLES WITH MAINTAINED SPACING

Number of Cables	Horizontally					
	1	2	3	4	5	6
Vertically						
1-----	1.00	0.93	0.87	0.84	0.83	0.82
2-----	0.89	0.83	0.79	0.76	0.75	0.74
3-----	0.80	0.76	0.72	0.70	0.69	0.68
4-----	0.77	0.72	0.68	0.67	0.66	0.65
5-----	0.75	0.70	0.66	0.65	0.64	0.63
6-----	0.74	0.69	0.64	0.63	0.62	0.61

(2) The ampacities of cables shall be in accordance with the requirements of note 8 of Notes to tables E 310.12 through E 310.15 where (a) cables are not spaced, (b) spacing is maintained between cables of more than three current-carrying conductors, or (c) unventilated continuous rigid cable supports are used.

History: Cr. Register, January, 1968, No. 145, eff. 2-1-68.