

WAC 296-46B-300 Wiring methods and materials—Wiring methods.

(1) Cables and raceways for power limited, NEC Class 2 and Class 3 conductors must be installed in compliance with Chapter 3 NEC unless other methods are specifically required elsewhere in the NEC, chapter 19.28 RCW, or this chapter.

005 Underground installations.

(2) Induction loops.

See WAC 296-46B-010(18) for induction detection loops that are made in a public roadway and regulated by a governmental agency.

Other induction loops must comply with the following requirements:

(a) General:

(i) A preformed direct burial induction loop is designed to be installed within the road surface base (e.g., concrete or asphalt) or below the road surface of a road with an unpaved surface (e.g., gravel or brick pavers);

(ii) A saw-cut induction detection loop is designed to be installed into a groove saw-cut into an existing paved road surface (e.g., concrete or asphalt);

(iii) The loop system includes the loop and the lead-in conductor;

(iv) The loop system must be:

(A) Tested to assure that at 500 volts DC, the resistance between the conductor and ground equals or exceeds 50 megohms; and

(B) Without splice; or

(C) If spliced, the splice must be soldered and appropriately insulated;

(v) The lead-in conductor must comply with the following:

(A) Must be stranded and have a lay (i.e., twist) of two turns per foot; and

(B) If installed in an electrical raceway;

• Are not required to be listed or suitable for wet locations; and

• Must have a burial cover of at least 6 inches; or

(C) If direct buried;

• Must be listed for the use; and

• Must have a burial cover of at least 18 inches.

(b) Preformed direct burial induction detection loops must conform with the following:

(i) The loop conductor must be rated for direct burial and be a minimum of No. 16 AWG;

(ii) The loop design must not allow movement of the loop conductor within the outer jacket. The outer jacket containing the loop conductor is not required to be listed;

(iii) The loop yoke casing (i.e., the location where the lead-in conductor is connected to the loop):

(A) Includes any device used to house the "loop to lead-in splice" or to otherwise couple the loop with the lead-in electrical raceway;

(B) Is not required to be listed; and

(C) Must have a coupler that will create a waterproof bond with the electrical raceway, containing the lead-in conductor, or a direct buried lead-in conductor.

(c) Saw-cut induction detection loops:

(i) The loop conductor must be cross-linked polyethylene or EPR Type USE insulation and be a minimum of No. 18 AWG stranded;

(ii) The saw-cut groove must not cut into rebar installed within the roadway.

011 Support of raceways, cables, or boxes in suspended ceilings.

(3) NEC power limited, Class 2, and Class 3 cables must be secured in compliance with NEC 334.30 and must be secured to boxes in compliance with NEC 314.17.

(4) Telecommunications cables must be secured in a manner that will not cause damage to the cables and at intervals not exceeding five feet. Cables are considered adequately supported when run through holes in building structural elements or other supporting elements. Telecommunications cables may be fished into inaccessible hollow spaces of finished buildings. Clamps or fittings are not required where telecommunications cables enter boxes.

(5) Optical fiber cables must be secured in a manner that will not cause damage to the cables and at intervals not exceeding five feet. Cables are considered adequately supported when run through holes in building structural elements or other supporting elements. Optical fiber cables may be fished into inaccessible hollow spaces of finished buildings. Supports must allow a bending radius that will not cause damage to the cables.

(6) Where not restricted by the building code official or Article 300 NEC, the wires required in NEC 300.11(B) may support raceways, cables, or boxes under the following conditions:

(a) Raceways and/or cables are not larger than three-quarter-inch trade size;

(b) No more than two raceways or cables are supported by a support wire. The two-cable limitation does not apply to telecommunications cables, Class 2 cables, or Class 3 cables on support wires installed exclusively for such cables. The support wire must be adequate to carry the cable(s) weight and all attached cables must be secured with approved fittings; or

(c) Raceways and cables are secured to the support wires by fittings designed and manufactured for the purpose.

In addition to (a), (b), and (c) of this subsection, the following conditions must be complied with:

(d) The support wires are minimum #12 AWG and are securely fastened to the structural ceiling and to the ceiling grid system; and

(e) The raceways or cables serve equipment that is located within the ceiling cavity or is mounted on or supported by the ceiling grid system. Telecommunications cables, Class 2 cables, or Class 3 cables supported as required by this section, may pass through ceiling cavities without serving equipment mounted on or supported by the ceiling grid system.

017 Conductors in raceway.

(7) Cables will be permitted in all raceway systems if:

(a) The cable is appropriate for the environment; and

(b) The percentage fill does not exceed that allowed in NEC Chapter 9, Table 1.

[Statutory Authority: Chapter 19.28 RCW, RCW 19.28.010 and 19.28.031. WSR 17-12-021, § 296-46B-300, filed 5/30/17, effective 7/1/17. Statutory Authority: Chapter 19.28 RCW. WSR 13-03-128, § 296-46B-300, filed 1/22/13, effective 3/1/13. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.281, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551. WSR 08-24-048, § 296-46B-300, filed 11/25/08,

effective 12/31/08; WSR 06-24-041, § 296-46B-300, filed 11/30/06, effective 12/31/06; WSR 05-10-024, § 296-46B-300, filed 4/26/05, effective 6/30/05. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.271, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551, 2003 c 399, 2003 c 211, 2003 c 78, and 2003 c 242. WSR 04-12-049, § 296-46B-300, filed 5/28/04, effective 6/30/04. Statutory Authority: RCW 19.28.006, 19.28.010, 19.28.031, 19.28.041, 19.28.061, 19.28.101, 19.28.131, 19.28.161, 19.28.171, 19.28.191, 19.28.201, 19.28.211, 19.28.241, 19.28.251, 19.28.271, 19.28.311, 19.28.321, 19.28.400, 19.28.420, 19.28.490, 19.28.551, 2002 c 249, chapters 34.05 and 19.28 RCW. WSR 03-09-111, § 296-46B-300, filed 4/22/03, effective 5/23/03.]