connections or splices in an underground installation shall be approved for wet locations.

The inside of all raceways and enclosures installed underground is classified as a wet location. Conductors installed in such underground locations must be listed for use in wet locations and comply with 310.10(C).

(C) Protection from Damage. Conductors emerging from the ground shall be enclosed in listed raceways. Raceways installed on poles shall be of rigid metal conduit, intermediate metal conduit, RTRC-XW, Schedule 80 PVC conduit, or equivalent, extending from the minimum cover depth specified in Table 305.15(A) to a point 2.5 m (8 ft) above finished grade. Conductors entering a building shall be protected by an approved enclosure or raceway from the minimum cover depth to the point of entrance. Where direct-buried conductors, raceways, or cables are subject to movement by settlement or frost, they shall be installed to prevent damage to the enclosed conductors or to the equipment connected to the raceways. Metallic enclosures shall be grounded.

(D) Splices. Direct burial cables shall be permitted to be spliced or tapped without the use of splice boxes if they are installed using materials suitable for the application. The taps and splices shall be watertight and protected from mechanical damage. Where cables are shielded, the shielding shall be continuous across the splice or tap.

Exception: At splices of an engineered cabling system, metallic shields of direct-buried single-conductor cables with maintained spacing between phases shall be permitted to be interrupted and overlapped. Where shields are interrupted and overlapped, each shield section shall be grounded at one point.

(E) Backfill. Backfill containing large rocks, paving materials, cinders, large or sharply angular substances, or corrosive materials shall not be placed in an excavation where materials can damage or contribute to the corrosion of raceways, cables, or other substructures or where it might prevent adequate compaction of fill.

Protection in the form of granular or selected material or suitable sleeves shall be provided to prevent physical damage to the raceway or cable.

Δ **(F) Raceway Seal.** Where a raceway enters from an underground system, the end within the building shall be sealed with an identified compound to prevent the entrance of moisture.

Informational Note: Presence of hazardous gases or vapors might also necessitate sealing of underground conduits or raceways entering buildings.

ARTICLE 310

Conductors for General Wiring

Conductors rated over 2000 volts are now located in Article 315, Medium Voltage Conductors, Cable, Cable Joints, and Cable Terminations.

Part I. General

Δ **310.1 Scope.** This article covers general requirements for conductors rated up to and including 2000 volts and their type designations, insulations, markings, mechanical strengths, ampacity ratings, and uses. These requirements do not apply to conductors that form an integral part of equipment, such as motors, motor controllers, and similar equipment, or to conductors specifically provided for elsewhere in this *Code*.

310.3 Conductors.

(A) Minimum Size of Conductors. The minimum size of conductors for voltage ratings up to and including 2000 volts shall be 14 AWG copper or 12 AWG aluminum or copper-clad aluminum, except as permitted elsewhere in this *Code*.

Δ **(B) Conductor Material.** Conductors in this article shall be of copper, aluminum, or copper-clad aluminum, unless otherwise specified. Aluminum and copper-clad aluminum shall comply with the following:

(1) Solid aluminum conductors 8, 10, and 12 AWG shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.
(2) Stranded aluminum conductors 8 AWG through 1000 kcmil marked as Type RHH, RHW, XHHW, XHHN, XHWN, THW, THHW, THWN, THHN, service-entrance Type SE Style U, and SE Style R shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.
(3) For copper-clad aluminum conductors, the copper shall form a minimum 10 percent of the cross-sectional area of a solid conductor or each strand of a stranded conductor. The aluminum core of a copper-clad aluminum conductor shall be made of an AA-8000 series electrical grade aluminum alloy conductor material.
(4) Copper-clad aluminum conductor material shall be listed.

This section correlates with the UL listing requirements for testing terminations — such as copper-aluminum, revised (CO/ALR) devices and other connectors — suitable for use with aluminum conductors. The electrical industry has developed AA-8000 series aluminum alloy materials and the connectors suitable for use with aluminum conductors to provide for safe and stable connections. Connections suitable for use with aluminum conductors are also generally listed as suitable for use with copper conductors and are marked accordingly, such as AL7CU or