Key Takeaways: OSHA Citation Data for Wiring Methods, Components, and Equipment for General Use

OSHA Standard 1910.305 sets out requirements regarding wiring methods, components and equipment for general use. As part of our annual review of the most recent OSHA citation data for the LBM sector, here are some key takeaways to help focus you on compliance and safety. The data are generating by OSHA for NLBMDA based on the NAICS code for lumber and building material dealers, including home centers, hardware stores and lumber yards.


Top Citations Takeaways

1. Conductors entering cutout boxes, cabinets, or fittings must be protected from abrasion, and openings through which conductors enter must be effectively closed. Unused openings must be closed. There are special rules regarding securement where cables are used. See 1910.305(b)(1), Conductors entering boxes, cabinets, and fittings. Of all the 1910.305 citations from the most current data, violations of this requirement received the largest penalties, with an average penalty of just under $1,000.

2. Pull boxes, junction boxes and fittings must be covered, outlet boxes through which cord pendants pass must have bushings, and noncombustible material must be used between a fixture canopy or pan and combustible wall or ceiling finishes. See 1910.305(b)(2), Covers and canopies.

3. Flush-mounted snap switches must have faceplates that completely cover the opening and seat against any finished surface. See 1910.305(c)(4).

4. Use the right flexible cords and cables for the job and location. Do not use flexible cords or cables as substitutes for fixed wiring of a structure. This was the top violation for the LBM sector in the most current data, with home centers receiving the largest number of citations. See 1910.305(g)(1).
5. As a general rule, flexible cords may be used only in continuous lengths without splice or tap. Flexible cords and cables must be connected to devices and fittings so that strain relief will prevent pull from being directly transmitted to joints or terminal screws. See 1910.305(g)(2), Identification, splices and terminations.

6. Fixtures, lampholders, lamps, rosettes, and receptacles may have no live parts exposed to employee contact. There are exceptions based on location, such as 8 feet above the floor and out of reach. Also, fixtures installed in wet or damp locations must be identified for that purpose. Violation of this requirement saw that highest penalties per violation of all the 1910.305 data for the LBM sector, with an average penalty of close to $1,500 for home centers. See 1910.305(j)(1).

7. Non-grounding-type receptacles and connectors may not be used for grounding-type attachment plugs. See 1910.305(j)(2), Receptacles, cord connectors, and attachment plugs (caps).

8. In general, a receptacle installed in a wet or damp location must be suitable for the location. A receptacle installed outdoors in a location protected from weather must have an enclosure that is weatherproof when the receptacle cap is closed. The weatherproofing requirement differs for receptacles installed in wet locations depending on whether it will be used attended or unattended. If the product plugged into the receptacle will be attended while in use, such as a power tool, the weatherproofing must be effective when the plug cap is removed. See 1910.305(j)(2), Receptacles, cord connectors, and attachment plugs (caps).

**Full Text of OSHA Standards**

1910.305(b)(2) **Covers and canopies.** (i) All pull boxes, junction boxes, and fittings shall be provided with covers identified for the purpose. If metal covers are used, they shall be grounded. In completed installations, each outlet box shall have a cover, faceplate, or fixture canopy. Covers of outlet boxes having holes through which flexible cord pendants pass shall be provided with bushings designed for the purpose or shall have smooth, well-rounded surfaces on which the cords may bear. (ii) Where a fixture canopy or pan is used, any combustible wall or ceiling finish exposed between the edge of the canopy or pan and the outlet box shall be covered with noncombustible material.

1910.305(c)(4) **Faceplates for flush-mounted snap switches.** Snap switches mounted in boxes shall have faceplates installed so as to completely cover the opening and seat against the finished surface.

1910.305(g)(1) **Use of flexible cords and cables.**

(i) Flexible cords and cables shall be approved for conditions of use and location.

(ii) Flexible cords and cables may be used only for: (A) Pendants; (B) Wiring of fixtures; (C) Connection of portable lamps or appliances; (D) Portable and mobile signs; (E) Elevator cables; (F) Wiring of cranes and hoists; (G) Connection of stationary equipment to facilitate their frequent interchange; (H) Prevention of the transmission of noise or vibration; (I) Appliances where the fastening means and mechanical connections are designed to permit removal for maintenance and repair; (J) Data processing cables approved as a part of the data processing system; (K) Connection of moving parts; and (L) Temporary wiring as permitted in paragraph (a)(2) of this section.
1910.305(g)(1)(iii) If used as permitted in paragraphs (g)(1)(ii)(C), (g)(1)(ii)(G), or (g)(1)(ii)(I) of this section, the flexible cord shall be equipped with an attachment plug and shall be energized from an approved receptacle outlet.

1910.305(g)(1)(iv) Unless specifically permitted otherwise in paragraph (g)(1)(ii) of this section, flexible cords and cables may not be used: (A) As a substitute for the fixed wiring of a structure; (B) Where run through holes in walls, ceilings, or floors; (C) Where run through doorways, windows, or similar openings; (D) Where attached to building surfaces; (E) Where concealed behind building walls, ceilings, or floors; or (F) Where installed in raceways, except as otherwise permitted in this subpart.

1910.305(g)(1)(v) Flexible cords used in show windows and showcases shall be Type S, SE, SEO, SJO, SJ, SJE, SJE0, SJEO, SJO, SJE0, SJO, SJE0, SJO, SJTO, SJTO0, SO, SOO, ST, STO, or STOO, except for the wiring of chain-supported lighting fixtures and supply cords for portable lamps and other merchandise being displayed or exhibited.

1910.305(g)(2) Identification, splices, and terminations.

(i) A conductor of a flexible cord or cable that is used as a grounded conductor or an equipment grounding conductor shall be distinguishable from other conductors. Types S, SC, SCE, SCT, SE, SEO, SEO0, SJ, SJE, SJE0, SJEO, SJO, SJ0, SJE0, SJO, SJTO, SJTO0, SO, SOO, ST, STO, and STOO flexible cords and Types G, G-GC, PPE, and W flexible cables shall be durably marked on the surface at intervals not exceeding 610 mm (24 in.) with the type designation, size, and number of conductors.

(ii) Flexible cords may be used only in continuous lengths without splice or tap. Hard-service cord and junior hard-service cord No. 14 and larger may be repaired if spliced so that the splice retains the insulation, outer sheath properties, and usage characteristics of the cord being spliced.

(iii) Flexible cords and cables shall be connected to devices and fittings so that strain relief is provided that will prevent pull from being directly transmitted to joints or terminal screws.

1910.305(j)(1) Lighting fixtures, lampholders, lamps, and receptacles.

(i) Fixtures, lampholders, lamps, rosettes, and receptacles may have no live parts normally exposed to employee contact. However, rosettes and cleat-type lampholders and receptacles located at least 2.44 m (8.0 ft) above the floor may have exposed terminals.

(ii) Handlamps of the portable type supplied through flexible cords shall be equipped with a handle of molded composition or other material identified for the purpose, and a substantial guard shall be attached to the lampholder or the handle. Metal shell, paper-lined lampholders may not be used.

(iii) Lampholders of the screw-shell type shall be installed for use as lampholders only. Where supplied by a circuit having a grounded conductor, the grounded conductor shall be connected to the screw shell. Lampholders installed in wet or damp locations shall be of the weatherproof type.

(iv) Fixtures installed in wet or damp locations shall be identified for the purpose and shall be so constructed or installed that water cannot enter or accumulate in wireways, lampholders, or other electrical parts.
1910.305(b)(1) Conductors entering boxes, cabinets, or fittings.

1910.305(b)(1)(i) Conductors entering cutout boxes, cabinets, or fittings shall be protected from abrasion, and openings through which conductors enter shall be effectively closed.

1910.305(b)(1)(ii) Unused openings in cabinets, boxes, and fittings shall be effectively closed.

1910.305(b)(1)(iii) Where cable is used, each cable shall be secured to the cabinet, cutout box, or meter socket enclosure. However, where cable with an entirely nonmetallic sheath enters the top of a surface-mouted enclosure through one or more nonflexible raceways not less than 457 mm (18 in.) or more than 3.05 m (10.0 ft) in length, the cable need not be secured to the cabinet, box, or enclosure provided all of the following conditions are met: (A) Each cable is fastened within 305 mm (12 in.) of the outer end of the raceway, measured along the sheath; (B) The raceway extends directly above the enclosure and does not penetrate a structural ceiling; (C) A fitting is provided on each end of the raceway to protect the cable from abrasion, and the fittings remain accessible after installation; (D) The raceway is sealed or plugged at the outer end using approved means so as to prevent access to the enclosure through the raceway; (E) The cable sheath is continuous through the raceway and extends into the enclosure not less than 6.35 mm (0.25 in.) beyond the fitting; (F) The raceway is fastened at its outer end and at other points as necessary; and (G) Where installed as conduit or tubing, the allowable cable fill does not exceed that permitted for complete conduit or tubing systems.

1910.305(j)(2) Receptacles, cord connectors, and attachment plugs (caps).

(i) All 15- and 20-ampere attachment plugs and connectors shall be constructed so that there are no exposed current-carrying parts except the prongs, blades, or pins. The cover for wire terminations shall be a part that is essential for the operation of an attachment plug or connector (dead-front construction). Attachment plugs shall be installed so that their prongs, blades, or pins are not energized unless inserted into an energized receptacle. No receptacles may be installed so as to require an energized attachment plug as its source of supply.

(ii) Receptacles, cord connectors, and attachment plugs shall be constructed so that no receptacle or cord connector will accept an attachment plug with a different voltage or current rating than that for which the device is intended. However, a 20-ampere T-slot receptacle or cord connector may accept a 15-ampere attachment plug of the same voltage rating.

(iii) Nongrounding-type receptacles and connectors may not be used for grounding-type attachment plugs.

(iv) A receptacle installed in a wet or damp location shall be suitable for the location.

(v) A receptacle installed outdoors in a location protected from the weather or in other damp locations shall have an enclosure for the receptacle that is weatherproof when the receptacle is covered (attachment plug cap not inserted and receptacle covers closed).

Note to paragraph (j)(2)(v) of this section. A receptacle is considered to be in a location protected from the weather when it is located under roofed open porches, canopies, marquees, or the like and where it will not be subjected to a beating rain or water runoff.
(vi) A receptacle installed in a wet location where the product intended to be plugged into it is not attended while in use (for example, sprinkler system controllers, landscape lighting, and holiday lights) shall have an enclosure that is weatherproof with the attachment plug cap inserted or removed.

(vii) A receptacle installed in a wet location where the product intended to be plugged into it will be attended while in use (for example, portable tools) shall have an enclosure that is weatherproof when the attachment plug cap is removed.