LBM Key Compliance Areas of Focus: Wiring Methods; Temporary Wiring

OSHA Standard 1910.305 addresses wiring methods, components, and equipment for general use as one of several parts of 1910 Subpart S, Electrical. Subpart S is organized around general electrical requirements, wiring design and protection, wiring methods, components and equipment for general usage, as well as specific purpose equipment, hazardous locations, and special systems. Subpart S also addresses training, selection and use of work practices, use of equipment, and safeguards for personal protection. OSHA Standard 1910.305 is organized around 1910.305(a), Wiring methods, 1910.305(b), Cabinets, boxes, and fittings, 1910.305(c), Switches, 1910.305(d), Switchboards and panelboards, 1910.305(e), Enclosures for damp and wet locations, 1910.305(f), Conductors for general wiring, 1910.305(g), Flexible cords and cables, 1910.305(h), Portable cables over 600 volts, nominal, 1910.305(i), Fixture wires, and 1910.305(j), Equipment for general use.

Of the requirements specified in Standard 1910.305(a), Wiring methods, the LBM sector has been cited in these areas relative to temporary wiring -

Temporary wiring. Except as specifically modified in this paragraph, all other requirements of this subpart for permanent wiring shall also apply to temporary wiring installations. \[1910.305(a)(2)\]

1. Temporary electrical power and lighting installations of 600 volts, nominal, or less may be used only as follows \[1910.305(a)(2)(i)\]:

   (1) During and for remodeling, maintenance, or repair of buildings, structures, or equipment, and similar activities \[1910.305(a)(2)(i)(A)\];

   (2) For a period not to exceed 90 days for Christmas decorative lighting, carnivals, and similar purposes \[1910.305(a)(2)(i)(B)\]; or

   (3) For experimental or development work, and during emergencies \[1910.305(a)(2)(i)(C)\].

2. Temporary wiring shall be removed immediately upon completion of the project or purpose for which the wiring was installed. \[1910.305(a)(2)(ii)\]

3. Temporary electrical installations of more than 600 volts may be used only during periods of tests, experiments, emergencies, or construction-like activities. \[1910.305(a)(2)(iii)\]

4. The following requirements apply to feeders \[^1\] \[1910.305(a)(2)(iv)\]:

   (1) Feeders shall originate in an approved distribution center. \[1910.305(a)(2)(iv)(A)\]

   (2) Conductors \[^2\] shall be run as multiconductor cord or cable \[^3\] assemblies. However, if installed as permitted in paragraph (a)(2)(i)(C) of this section, and if accessible only to qualified persons, feeders may be run as single insulated conductors. \[1910.305(a)(2)(iv)(B)\]
5. The following requirements apply to branch circuits[^4] [1910.305(a)(2)(v)]:

(1) Branch circuits shall originate in an approved power outlet[^5] or panelboard[^6]. [1910.305(a)(2)(v)(A)]

(2) Conductors shall be multiconductor cord or cable assemblies or open conductors. If run as open conductors, they shall be fastened at ceiling height every 3.05 m (10.0 ft). [1910.305(a)(2)(v)(B)]

(3) No branch-circuit conductor may be laid on the floor. [1910.305(a)(2)(v)(C)]

(4) Each branch circuit that supplies receptacles or fixed equipment shall contain a separate equipment grounding conductor[^7] if run as open conductors. [1910.305(a)(2)(v)(D)]

6. Receptacles[^8] shall be of the grounding type. Unless installed in a continuous grounded metallic raceway[^9] or metallic covered cable, each branch circuit shall contain a separate equipment grounding conductor and all receptacles shall be electrically connected to the grounding conductor. [1910.305(a)(2)(vi)]

7. No bare conductors nor earth returns may be used for the wiring of any temporary circuit. [1910.305(a)(2)(vii)]

8. Suitable disconnecting switches[^10] or plug connectors[^11] shall be installed to permit the disconnection of all ungrounded conductors of each temporary circuit. Multiwire branch circuits shall be provided with a means to disconnect simultaneously all ungrounded conductors at the power outlet or panelboard where the branch circuit originated. [1910.305(a)(2)(viii)]

**Note to paragraph (a)(2)(viii) of this section.** Circuit breakers with their handles connected by approved handle ties are considered a single disconnecting means for the purpose of this requirement.

9. All lamps for general illumination shall be protected from accidental contact or breakage by a suitable fixture or lampholder with a guard[^12]. Brass shell, paper-lined sockets, or other metal-cased sockets may not be used unless the shell is grounded. [1910.305(a)(2)(ix)]

10. Flexible cords and cables shall be protected from accidental damage, as might be caused, for example, by sharp corners, projections, and doorways or other pinch points. [1910.305(a)(2)(x)]

11. Cable assemblies and flexible cords and cables shall be supported in place at intervals that ensure that they will be protected from physical damage. Support shall be in the form of staples, cables ties, straps, or similar type fittings installed so as not to cause damage. [1910.305(a)(2)(xi)]
**Endnotes**

1 **Feeder**: A circuit, such as conductors in conduit or a busway run, which carries a large block of power from the service equipment to a sub-feeder panel or a branch circuit panel or to some point at which the block power is broken into smaller circuits.

2 **Conductor**: A wire or combination of wires not insulated from one another, suitable for carrying electric current.

   **Conductor -- (1) Bare.** A conductor having no covering or electrical insulation whatsoever. (2) **Covered.** A conductor encased within material of composition or thickness that is not recognized by this subpart as electrical insulation. (3) **Insulated.** A conductor encased within material of composition and thickness that is recognized by this subpart as electrical insulation.

3 **Cable**: A conductor with insulation, or a stranded conductor with or without insulation and other coverings (single-conductor cable), or a combination of conductors insulated from one another (multiple-conductor cable).

4 **Circuit**: A conductor or system of conductors through which an electric current is intended to flow.

5 **Outlet**: A point on the wiring system at which current is taken to supply utilization equipment.

6 **Panelboard**: A single panel or group of panel units designed for assembly in the form of a single panel; including buses, automatic overcurrent devices, and with or without switches for the control of light, heat, or power circuits; designed to be placed in a cabinet or cutout box placed in or against a wall or partition and accessible only from the front. (See **Switchboard**: A large single panel, frame, or assembly of panels on which are mounted, on the face or back, or both, switches, overcurrent and other protective devices, buses, and (usually) instruments. Switchboards are generally accessible from the rear as well as from the front and are not intended to be installed in cabinets.)

7 **Grounding Conductor**: A conductor used to connect metal equipment enclosures and/or the system grounded conductor to a grounding electrode, such as the ground wire run to the water pipe at a service; also may be a bare or insulated conductor used to ground motor frames, panel boxes, and other metal equipment enclosures used throughout electrical systems. In most conduit systems, the conduit is used as the ground conductor.

   **Grounding conductor**: A conductor used to connect equipment or the grounded circuit of a wiring system to a grounding electrode or electrodes.

8 **Receptacle**: A receptacle is a contact device installed at the outlet for the connection of an attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is two or more contact devices on the same yoke.
Raceway. An enclosed channel of metal or nonmetallic materials designed expressly for holding wires, cables, or busbars, with additional functions as permitted in this standard. Raceways include, but are not limited to, rigid metal conduit, rigid nonmetallic conduit, intermediate metal conduit, liquidtight flexible conduit, flexible metallic tubing, flexible metal conduit, electrical metallic tubing, electrical nonmetallic tubing, underfloor raceways, cellular concrete floor raceways, cellular metal floor raceways, surface raceways, wireways, and busways.

Disconnecting (or Isolating) switch. (Over 600 volts, nominal.) A mechanical switching device used for isolating a circuit or equipment from a source of power.

Connector: A device providing electrical connection/disconnections. It consists of a mating plug and receptacle. Various types of connectors include DIP, card edge, two-piece, hermaphroditic and wire-wrapping configurations. Multiple contact connectors join two or more conductors with others in one mechanical assembly.

Guarded: Covered, fenced, enclosed, or otherwise protected, by means of suitable covers or casings, barrier rails or screens, mats, or platforms, designed to minimize the possibility, under normal conditions, of approach or accidental contact by persons or objects. Note: Wires which are insulated, but not otherwise protected, are not considered as guarded.

Guarded. Covered, shielded, fenced, enclosed, or otherwise protected by means of suitable covers, casings, barriers, rails, screens, mats, or platforms to remove the likelihood of approach to a point of danger or contact by persons or objects.