

WAC 296-307-37403 What requirements apply to systems over 600 volts, nominal? (1) Wiring methods for fixed installations over 600 volts, nominal, must meet the following requirements:

(a) Above-ground conductors must be installed in rigid metal conduit, in intermediate metal conduit, in cable trays, in cablebus, in other suitable raceways, or as open runs of metal-clad cable suitable for the use and purpose. Open runs of nonmetallic-sheathed cable or of bare conductors or busbars must be installed in locations accessible only to qualified persons. Metallic shielding components, such as tapes, wires, or braids for conductors, must be grounded. Open runs of insulated wires and cables with a bare lead sheath or a braided outer covering must be supported to prevent physical damage to the braid or sheath.

(b) Conductors emerging from the ground must be enclosed in approved raceways.

(2) Interrupting and isolating devices must meet the following requirements:

(a) Circuit breaker installations located indoors must consist of metal-enclosed units or fire-resistant cell-mounted units. Circuit breakers must be open mounted only in locations that are accessible only to qualified persons. A means of indicating the open and closed position of circuit breakers must be provided.

(b) Fused cutouts installed in buildings or transformer vaults must be approved for the purpose. They must be readily accessible for fuse replacement.

(c) A means must be provided to completely isolate equipment for inspection and repairs. Isolating means that are not designed to interrupt the load current of the circuit must be either interlocked with an approved circuit interrupter or provided with a sign warning against opening them under load.

(3) Mobile and portable equipment must meet the following requirements:

(a) A metallic enclosure must be provided on the mobile machine for enclosing the terminals of the power cable. The enclosure must include provisions for a solid connection for the ground wire terminal to effectively ground the machine frame. The method of cable termination used must prevent any strain or pull on the cable from stressing the electrical connections. The enclosure must be lockable so only authorized qualified persons may open it and must be marked with a sign warning of the presence of energized parts.

(b) All energized switching and control parts must be enclosed in grounded metal cabinets or enclosures. Circuit breakers and protective equipment must have the operating means projecting through the metal cabinet or enclosure so these units can be reset without opening locked doors. Enclosures and metal cabinets must be locked so that only authorized qualified persons have access and must be marked with a sign warning of the presence of energized parts. Collector ring assemblies on revolving machines (shovels, draglines, etc.,) must be guarded.

(4) Tunnel installations of high-voltage power distribution and utilization equipment that is portable or mobile, such as substations, trailers, cars, mobile shovels, draglines, hoists, drills, dredges, compressors, pumps, conveyors, and underground excavators must meet the following requirements:

(a) Conductors in tunnels must be installed in one or more of the following:

(i) Metal conduit or other metal raceway;

- (ii) Type MC cable; or
- (iii) Other approved multiconductor cable.

Conductors must also be located or guarded to protect them from physical damage. Multiconductor portable cable may supply mobile equipment. An equipment grounding conductor must be run with circuit conductors inside the metal raceway or inside the multiconductor cable jacket. The equipment grounding conductor may be insulated or bare.

(b) Bare terminals of transformers, switches, motor controllers, and other equipment must be enclosed to prevent accidental contact with energized parts. Enclosures used in tunnels must be drip-proof, weatherproof, or submersible as required by environmental conditions.

(c) A disconnecting means that simultaneously opens all ungrounded conductors must be installed at each transformer or motor location.

(d) All nonenergized metal parts of electric equipment and metal raceways and cable sheaths must be effectively grounded and bonded to all metal pipes and rails at the portal and at maximum intervals of 1000 feet throughout the tunnel.

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