

NOTICE TO ELECTRICAL CONTRACTORS

April 25, 2002

CLASS 1 AND CLASS 2 WIRING

Class 1 Circuits

Rule 16-010 identifies a class 1 circuit and clarifies certain minimum standards when safety is involved. For example, a high limit control on a boiler could not be classified as a class 2 circuit because it is too important. Rule 16-010 states, "where the failure to operate of a remote-control circuit to a safety control device will introduce a direct fire or life hazard, the remote-circuit shall be deemed to be a Class 1 circuit". It shall be protected from mechanical injury by being installed as per rule 16-116.

In other words any circuit necessary for the safety of the occupants in a building is a class 1 circuit and is to be protected where subject to mechanical injury. Examples of protection are by installing the circuit in conduit, independent cable supports or by installing the circuit in a remote location where it will not be subject to any possible mechanical injury.

Support of Class 1, Class 2, Communication Circuits, and Signaling Circuits

Rule 2-108 references mechanical arrangement and execution of work in connection with electrical installations. Cable bundling shall be mechanically protected and installed in an acceptable manner. The installation shall be independently supported to parallel building structures.

The inspection department finds it difficult to accept the practice of attaching cable bundling to electrical conduits, sprinkler lines, fixture hangers or to ceiling supports in ceiling spaces. The support conduit spacing requirement under rule 12-1404 and 12-1010 is for the support of the conduit itself and ensures the required electrical continuity of the raceway.

Protection of Exiting Wires and Bonding

The inspection department will accept round throat connectors on the ends of short conduit stubs in walls etc. to protect exiting wires. We will accept the exemption for bonding of protective sleeving of less than 1.5 m in length, where the installation method is such that it is improbable they will become energized.

Open Wiring

Rules 16-210 and 2-108 permit wiring of class 2 circuits to be run along straight building lines, which includes proper strapping to prevent potential damage to the wiring in a plenum. The intent is to have class 2 circuits installed using good wiring practices although Section 16 does not specify that the wiring methods in Section 12 be followed. Conductors shall be of a type listed in Table 19, **except that in smaller sizes than No. 14 AWG, listed as equipment wire in Note 1 to Table 11 (which is REW, SEW, SEWF, TEW, TEWN) are installed in a raceway.**

If you intend to run class 2 circuits as open wiring in the plenum, then take great care in its installation to prevent mechanical damage to the wiring both during and after the installation. **The preferred method of protection in non-combustible and combustible buildings is by isolation, away from possible mechanical injury or by using either approved cable supports or conduit for main runs where large numbers of class 2 circuits are present.**

Note: The mechanical arrangement and execution of the work in connection with any electrical installation shall be acceptable during and after the installation.