
FIRE PREVENTION AND BUILDING SAFETY COMMISSION
Department of Homeland Security**Written Interpretation of the State Building Commissioner****Interpretation #:** ALB-2023-40 [2009 IEC-300.4]**Building or Fire Safety Law Interpreted****(675 IAC 17-1.8) 2009 Indiana Electrical Code, Article 300.4. Protection Against Physical Damage.**

Where subject to physical damage, conductors shall be protected.

(A) Cables and Raceways Through Wood Members.

(1) Bored Holes. In both exposed and concealed locations, where a cable- or raceway-type wiring method is installed through bored holes in joists, rafters, or wood members, holes shall be bored so that the edge of the hole is not less than 32 mm (1-1/4 in.) from the nearest edge of the wood member. Where this distance cannot be maintained, the cable or raceway shall be protected from penetration by screws or nails by a steel plate(s) or bushing(s), at least 1.6 mm (1/16 in.) thick, and of appropriate length and width installed to cover the area of the wiring.

Exception No. 1: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

Exception No. 2: A listed and marked steel plate less than 1.6 mm (1/16 in.) thick that provides equal or better protection against nail or screw penetration shall be permitted.

(2) Notches in Wood. Where there is no objection because of weakening the building structure, in both exposed and concealed locations, cables or raceways shall be permitted to be laid in notches in wood studs, joists, rafters, or other wood members where the cable or raceway at those points is protected against nails or screws by a steel plate at least 1.6 mm (1/16 in.) thick, and of appropriate length and width, installed to cover the area of the wiring. The steel plate shall be installed before the building finish is applied.

Exception No. 1: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

Exception No. 2: A listed and marked steel plate less than 1.6 mm (1/16 in.) thick that provides equal or better protection against nail or screw penetration shall be permitted.

(B) Nonmetallic-Sheathed Cables and Electrical Nonmetallic Tubing Through Metal Framing Members.

[Omitted for lack of relevance to the request.]

(C) Cables Through Spaces Behind Panels Designed to Allow Access. [Omitted for lack of relevance to the request.]

(D) Cables and Raceways Parallel to Framing Members and Furring Strips. In both exposed and concealed locations, where a cable- or raceway-type wiring method is installed parallel to framing members, such as joists, rafters, or studs, or is installed parallel to furring strips, the cable or raceway shall be installed and supported so that the nearest outside surface of the cable or raceway is not less than 32 mm (1-1/4 in.) from the nearest edge of the framing member or furring strips where nails or screws are likely to penetrate. Where this distance cannot be maintained, the cable or raceway shall be protected from penetration by nails or screws by a steel plate, sleeve, or equivalent at least 1.6 mm (1/16 in.) thick.

Exception No. 1: Steel plates, sleeves, or the equivalent shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

Exception No. 2: For concealed work in finished buildings, or finished panels for prefabricated buildings where such supporting is impracticable, it shall be permissible to fish the cables between access points.

Exception No. 3: A listed and marked steel plate less than 1.6 mm (1/16 in.) thick that provides equal or better protection against nail or screw penetration shall be permitted.

(E) Cables and Raceways Installed Under Roof Decking. [Omitted for lack of relevance to the request.]

(F) Cables and Raceways Installed in Shallow Grooves. [Omitted for lack of relevance to the request.]

(G) Insulated Fittings. [Omitted for lack of relevance to the request.]

Issue

Does Article 300.4 of the 2009 Indiana Electrical Code (IEC) require protective concealment of all cable- and raceway-type wiring installed in wood-framed structures where such cable is reachable while standing at floor level?

Interpretation of the State Building Commissioner

No, Article 300.4 of the 2009 IEC does not require protective concealment of all cable- and raceway-type wiring installed in wood-framed structures in locations that are reachable while standing at floor level.

Rationale

The introductory paragraph of Article 300.4 of the 2009 IEC clearly indicates that protective measures are required for conductors that are subject to physical damage. While that paragraph provides nothing more about the nature of the potential damage, the remainder of the article addresses only one type of damage in wood-framed structures – penetration of the conductor by nails or screws during construction. In these structures, the code provides protection by specifying the minimum distance that must be maintained between the conductor and the surface of the framing member. If the installation fails to meet those dimensional requirements, the code describes the minimum type of applied protection that must be installed – namely a plate or bushing of adequate material and thickness to prevent damage from sharp fasteners. Nothing in the article requires the general concealment of the conductor if it is within physical reach of an occupant, whether adult or child. This is confirmed in the code's written commentary, which states repeatedly that the intent of the regulation in wood-framed structures is to prevent nails and screws from being driven into cables and raceways.

It is important to note that the introductory paragraph requiring protection from physical damage does not provide the building official with *carte blanche* authority in determining either the nature/source of damage, or the method of protection employed against it. It is simply a statement of the purpose of the article, which is then followed by the enforceable details.

Interpretation Replaces: New

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