



TECHNICAL SERVICES DEPARTMENT

BULLETIN

No. 110
September 16, 2015
(Rev December 15, 2016)
(Rev March 17, 2021)

Drain openings in boxes and conduit bodies listed for damp or wet locations

NEC[®] Section 314.15 includes the following:

"Approved drainage openings not smaller than 3 mm (1/8 in.) and not larger than 6 mm (1/4 in.) in diameter shall be permitted to be installed in the field in boxes or conduit bodies listed for use in damp or wet locations. For installations of listed drain fittings, larger openings are permitted to be installed in the field in accordance with manufacturer's instructions."

This change recognized a common field practice found necessary to address accumulation of moisture due to condensation effects.

The following are general guidelines for field drilling for a drainage opening as permitted by *NEC* Section 314.15:

1. Only a single drainage opening, not larger than 6 mm (1/4 in.) nor smaller than 3 mm (1/8 in.), is to be drilled in a box or conduit body unless instructed by the manufacturer. Where a box is divided by tightly fitted partitions, one drainage opening may be drilled in each partitioned section. Raceways shall not be drilled for a drainage opening.
2. A drainage opening should only be drilled in a surface mounted, pedestal mounted or pendant mounted box that is listed for a damp or wet location. A drainage hole should not be drilled in a flush mounted box.
3. A drainage opening should only be drilled in the underside and at the lowest point of a box or conduit body when mounted for use. Openings should not be drilled within 6 mm (1/4 in.) of an edge or corner of a box or conduit body, or a knockout or formed conduit hub, or any formed screw boss or raised area inside the box or conduit body.
4. A drainage opening should never be drilled in a box or conduit body classified for use in a hazardous (classified) location.

5. A drainage opening should never be drilled in a box or conduit body where such an opening could jeopardize Enclosure Type ratings for which the box or conduit body is rated.

6. Prior to drilling a drainage opening, the raceway system including outlet boxes, conduit bodies, or fittings shall not have any conductors or cables installed. Conductors or cables can be damaged if installed during the drilling of drainage openings.

Important:

Boxes and conduit bodies marked as Type 3R and 3RX enclosures must comply with the following requirements of NEMA Standard 250 and UL Standard UL 50E:

“Drainage openings shall not be less than 3.2 mm in diameter (1/8 inch in diameter) or more than 6.4 mm in diameter (1/4 inch in diameter) unless baffled or provided with a drainage fitting.”

Distribution List:

Standards and Conformity Assessment Policy Committee

Codes and Standards Committee

NEMA Operations Department

Disclaimer

The standards or guidelines presented in a NEMA standards publication are considered technically sound at the time they are approved for publication. They are not a substitute for a product seller's or user's own judgment with respect to the particular product referenced in the standard or guideline, and NEMA does not undertake to guarantee the performance of any individual manufacturer's products by virtue of this standard or guide. Thus, NEMA expressly disclaims any responsibility for damages arising from the use, application, or reliance by others on the information contained in these standards or guidelines.