

NEMA OS 3-2016

Standard for Selection and Installation Guidelines for Electrical Outlet Boxes



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Selection and Installation Guidelines for Electrical Outlet Boxes

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Foreword

User input was considered in the development of this standards publication. This standards publication was developed by the NEMA Outlet and Switch Box Section, which periodically reviews it for any revisions necessary to address changing conditions, product listing and installation requirements, and technical progress. Comments for proposed revisions are welcomed and should be submitted to:

Senior Technical Director, Operations
National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

OS 3-2016 revises and supersedes OS 3-2012.

This standards publication was developed and approved by the Outlet and Switch Box Section. At the time it was approved, the Outlet and Switch Box Section was composed of the following members:

2D2C, Inc. (Lincolnshire, IL)
Appleton Group (Rosemont, IL)
Allied Moulded Products, Inc. (Bryan, OH)
Arlington Industries, Inc. (Scranton, PA)
Bridgeport Fittings, Inc. (Stratford, CT)
Eaton's B-Line Business (Highland, IL)
Crouse-Hinds by Eaton (Syracuse, NY)
Hubbell Incorporated (Shelton, CT)
Legrand/Pass & Seymour (Syracuse, NY)
RACO (South Bend, IN)
Pentair Electrical & Fastening Systems (Solon, OH)
Sigma Electric Manufacturing Corporation (Garner, NC)
Southwire Company (Carrollton, GA)
Thomas & Betts, a member of the ABB Group (Memphis, TN)
Wiremold/Legrand (West Hartford, CT)

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Introduction

Scope

This publication covers guidelines for the selection and installation of general-purpose and specialty metallic, nonmetallic, and composite outlet boxes, including device boxes, boxes for luminaires or other products, junction boxes, extension rings, covers, and flush-device cover plates. The boxes addressed in these guidelines are intended for use in ordinary, non-hazardous locations. With the exception of masonry boxes and some multi-gang boxes and floor boxes, the boxes addressed in these guidelines are limited to 1,650 cm³ (100 in³) internal volume per gang.

There may be no other component of our electrical distribution system that serves more purposes than the electrical outlet box.

When installed with a cover, the box:

- a) provides connection to a raceway system and a means to access wiring;
- b) houses and provides a degree of mechanical protection for conductors and wiring devices such as switches and receptacles; and
- c) limits access to live parts; and where applicable, bonds electrically conductive components to the equipment grounding conductor.

When designed and specifically identified for the purpose, a box and other components form an enclosure system that:

- a) provides degrees of protection from external environmental conditions (rain, dust, scrub water, etc.);
- b) preserves the integrity of fire-resistive rated walls, ceilings, floors, partitions, or furniture in which it is installed; and/or
- c) provides independent support for attached products such as luminaires, ceiling-suspended fans, and safety and security devices.

For the most part, boxes within the scope of these guidelines fall into just a few general classifications. Each classification has been adapted over the years to meet market needs.

NEMA has written these guidelines to provide qualified designers, installers, and inspectors with an industry perspective of the appropriate selection and installation criteria based on the designed, intended use of the product. The member companies of the NEMA Outlet and Switch Box Section promote the selection and installation of listed boxes and covers and listed raceways and fittings. The listing of electrical system components qualifies them to minimum performance requirements and provides for ongoing conformity surveillance. Listed boxes and covers can be recognized by the trademark of the qualified electrical testing laboratory on the part or its smallest unit container.

It is our objective to develop a closer liaison with the installers of our products and professional electrical inspectors. Through this liaison, we intend to provide uniform education and understanding as to the intended use and application of our products. Through education, we hope to develop an alliance founded in trust that will ensure that the concerns and challenges we each face are addressed.