NEiS

NECA/NEMA 105-2015

Standard for

Installing Metal Cable Tray Systems

AN AMERICAN NATIONAL STANDARD

Published by
National Electrical Contractors Association

Jointly developed with
National Electrical Manufacturers Association

NECA/NEMA 105-2015

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Installing Metal Cable Tray Systems

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Cable Tray Institute

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This standard is also published as NEMA VE 2-2013

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OR

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(This introduction is not a part of the standard)

Introduction

National Electrical Installation Standards™ (NEIS®) are designed to improve communication among specifiers, purchasers, and suppliers of electrical construction services. They define a minimum baseline of quality and workmanship for installing electrical products and systems. *NEIS* are intended to be referenced in contract documents for electrical construction projects. The following language is recommended:

> Metal cable tray systems for power communications cabling shall be installed in accordance with NECA/NEMA 105, *Standard for Installing Metal Cable Tray Systems* (ANSI).

NECA/NEMA 105-2015 is an adoption of ANSI/NEMA VE 2-2013, *Metal Cable Tray Installation Guidelines.* The complete text of NEMA's publication is reproduced here, in this *National Electrical Installation Standard.*

Use of *NEIS* is voluntary, and neither the National Electrical Manufacturers Association, the Cable Tray Institute, nor the National Electrical Contractors Association assume any obligation or liability to users of this publication. Existence of a standard shall not preclude any member or non-member of these organizations from specifying or using alternate construction methods permitted by applicable regulations.

Everything in this publication is intended to comply with the edition of the National Electrical Code (NEC)® in effect at the time of publication. *NEIS* are not intended to duplicate NEC requirements. It is the responsibility of users of this standard to comply with state and local electrical codes when installing electrical products and systems.

This standard is also published as ANSI/NEMA VE 2-2013, *Metal Cable Tray Installation Guidelines.*

Suggestions for revisions and improvements to this standard are welcome. They should be addressed to:

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A complete list of *National Electrical Installation Standards* can be found in Appendix B on page 45 of this publication.

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The information in this publication was considered technically sound by a consensus among persons engaged in its development at the time it was approved. Consensus does not necessarily mean there was unanimous agreement among every person participating in the development process.

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FOREWORD

For Cable Tray Installers: NEMA VE 2-2013 (hereinafter referred to as NEMA VE 2) is intended as a practical guide for the proper installation of cable tray systems. Cable tray system design shall comply with *National Electrical Code® (NEC®)* Article 392, NEMA VE 1, and NEMA FG 1 and follow safe work practices as described in NFPA 70E.

NEMA VE 2 guidelines and information do not intend to cover all details or variations in cable tray systems nor provide for every possible installation contingency.

Construction Experience: It is recommended that the work described be performed by qualified persons familiar with standard electrical construction practices, electrical equipment, and safety of electrical wiring systems.

NEMA VE 2 guidelines are useful to engineers, contractors, and maintenance personnel. In future, NEMA VE 2 will be updated periodically to reflect evolving technology and construction techniques.

Comments and suggestions for the improvement of this document are encouraged. They should be sent to:

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

This is the fourth edition of NEMA VE 2.

NEMA VE 2 was developed by the NEMA Cable Tray Section. Section approval does not necessarily imply that all section members voted for approval or participated in development. At the time NEMA VE 2 was approved, the NEMA Cable Tray Section consisted of the following members:

- ABB/Thomas & Betts Corp.—Memphis, TN
- Atkore International/Cope—Harvey, IL
- Chalfant Manufacturing Co.—Brunswick, OH
- Eaton Cooper B-Line—Highland, IL
- Legrand/Cablofil, Inc.—Mascoutah, IL
- MP Husky Corp.—Greenville, SC
- Snake Tray, Inc.—Bay Shore, NY
- Wiremaid Products Division—Coral Springs, FL

Section 1
SCOPE

1.1 SCOPE

NEMA VE 2 addresses shipping, handling, storing, and installing cable tray systems and provides information on maintenance and system modification.

1.2 GENERAL

WARNING! Do not use a cable tray as a walkway, ladder, or support for people; cable tray is a mechanical support system for cables and raceways. Using cable trays as walkways can cause personal injury and can damage cable tray and installed cables.

Hazardous voltages in electrical equipment can cause severe personal injury or death. Safety-related work practices, such as those described in NFPA 70E or CSA Z462, as well as all applicable OSHA regulations should be followed at all times.

Performance of a cable tray wiring system depends on proper installation, including supports and cables. Neglecting installation and maintenance guidelines may lead to personal injury as well as damage to property.

Installation and maintenance of cable tray wiring systems shall be conducted only by qualified personnel. For the purposes of this guideline, a qualified person is one who is familiar with electrical construction. In addition, that person is:

a) Trained and authorized to test, energize, clear, ground, tag, and lock out circuits, in accordance with established safety practices, and
b) Trained in the proper care and use of protective equipment, such as insulated rubber gloves, hard hats, safety glasses or face shields, dust masks, and flash-resistant clothing, in accordance with established safety practices.

1.3 DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

The following definitions, abbreviations, and acronyms appear in NEMA VE 2 or NEMA VE 1.

accessory: Components used to supplement the function of a straight section or fitting. Examples include, but are not limited to, dropout, cover, conduit adapter, hold-down device, and divider.

cable tray support span: The distance between the centerlines of supports.

cable tray system: A section or assembly of sections, and associated fittings, forming a mechanical system used to support cables and raceways.

channel cable tray: A fabricated structure consisting of a one-piece ventilated- or solid-bottom channel section.

classified: Indicates that a product has been evaluated to meet a specific purpose, e.g., classified as to its suitability for use as an equipment grounding conductor.

connector: A component that joins any combination of cable tray straight sections and fittings.