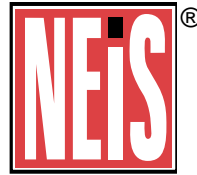




Recommended Practice  
for Installing

# Metal Cable Trays



Published by  
National Electrical  
Contractors Association



Jointly developed with  
National Electrical  
Manufacturing Association



**An American National Standard**

# **NECA/NEMA 105–2002**

*Recommended Practice for*

## **Installing Metal Cable Tray Systems**



*National  
Electrical  
Installation  
Standards*<sup>TM</sup>

Developed by  
**National Electrical  
Manufacturers Association**



Approved by  
**Cable Tray Institute**

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# Introduction

*National Electrical Installation Standards™* 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 105-2002, *Recommended Practice for Installing Metal Cable Tray Systems* (ANSI).

NECA/NEMA 105-2002 is an adoption of ANSI/NEMA VE 2-2001, *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 2-2001, *Metal Cable Tray Installation Guidelines*.

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A complete list of *National Electrical Installation Standards* can be found in Appendix B on page 47 of this publication.

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## Foreword

**For Cable Tray Installers**—This publication is intended as a practical guide for the proper installation of cable tray systems. Cable tray systems design shall comply with NEC Article 318, NEMA VE 1, and NEMA FG 1 and follow safe work practices as described in NFPA 70E.

These 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.

These guidelines will be useful to engineers, contractors, and maintenance personnel. This publication will be reviewed periodically with the purpose of updating it to reflect advancing technology and construction techniques. Please address any comments or questions to:

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1300 North 17th Street  
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Rosslyn, VA 22209

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Cable Tray Institute  
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Suite 201  
Raleigh, NC 27607-6518

This is the second edition of this publication.

This standards publication was developed by the NEMA Metal Cable Tray and Nonmetallic Cable Tray Sections. Section approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development. At the time it was approved, the Metal Cable Tray and Nonmetallic Cable Tray Sections were composed of the following members:

Champion Fiberglass—Spring, TX  
Chalfant Manufacturing Company—Cleveland, OH  
Cooper B-Line—Highland, IL  
Enduro Fiberglass Systems, Inc.—Houston, TX  
GS Metals Corporation—Pinckneyville, IL  
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## SCOPE

This publication addresses shipping, handling, storing, and installing cable tray systems. Information on maintenance and system modification is also provided.

Abbreviations used in this standard are as follows:

- "in" denotes inch;
- "ft" denotes foot;
- "lb" denotes pound;
- "mm" denotes millimeter;
- "kg" denotes kilogram;
- "m" denotes meter;
- "N" denotes newtons;
- "°F" denotes degree Fahrenheit;
- "°C" denotes degree Celsius.

## Section 1 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 also damage cable tray and installed cables.

Hazardous voltages in electrical equipment can cause severe personal injury or death. Safety related work practices, as described in NFPA 70E, Part 11, should be followed at all times.

The performance of a cable tray wiring system is dependent on its 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, the person is:

- Trained and authorized to test, energize, clear, ground, tag, and lock out circuits in accordance with established safety practices.

- Trained in the proper care and use of protective equipment such as insulated rubber gloves, hard hat, safety glasses or face shields, dust mask, and flash resistant clothing in accordance with established safety practices.