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Grounding Rod Electrodes and Grounding Rod Electrode Couplings

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Foreword

This Standards Publication provides practical information concerning construction, test, performance, and manufacture of ground rod electrodes and ground rod electrode couplings. This standard is intended for use by the electrical industry to provide guidelines for the manufacture and proper application of these products, and to promote the benefits of repetitive manufacture and widespread product availability.

One of the primary purposes of this Standards Publication is to encourage the manufacture and utilization of products, which, in themselves, function in accordance with these standards. While some sections of this publication are intended to eliminate misunderstandings between manufacturers and users, all sections, when applied properly, contribute to safety in one way or another.

The proper manufacture of ground rod electrodes and ground rod electrode couplings is, however, only one consideration in promoting the safe utilization of electricity. Other safety considerations, including environmental conditions, system design, equipment selection and application, installation, operating practices and maintenance, involve the joint efforts of the system designer, the various equipment manufacturers, the installer, and the user. Information is provided herein to assist in proper selection and use.

This Standards Publication covers design and performance requirements for ground rod electrodes and ground rod electrode couplings, and provides recommendations for their selection and use under normal or certain specific conditions. These standards have been promulgated with a view of promoting safety to persons and property when products conforming to them are selected, installed, and maintained in accordance with the *National Electrical Code*[®] and/or the *National Electrical Safety Code*.

NEMA Standards Publications are periodically reviewed to meet changing conditions and technical progress, and the latest edition should be utilized. Purchasers will be notified as to when revisions take place and will be provided an opportunity to acquire these when available.

Comments from users of this standards publication are welcome. They should be sent to:

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This Standards Publication was developed by the Electrical Connector Section of the National Electrical Manufacturers Association.

Section 1 GENERAL

1.1 SCOPE

This Standards Publication applies to ground rod electrodes and ground rod electrode couplings that function in accordance with the *National Electrical Code*[®] (NFPA 70-2005) and/or the *National Electrical Safety Code* (ANSI C2-2002). Included are materials, construction, and performance of copper bonded ground rod electrodes, zinc-coated ground rod electrodes, and stainless steel clad ground rod electrodes. This standards publication also includes information for electrode products that have been successfully used for many years but are not defined within the *National Electrical Code* or the *National Electrical Safety Code*. The items described in this Standards Publication are defined in Section 1.

1.2 NORMATIVE REFERENCES

This NEMA Standards Publication represents the results of research and investigation by the members of NEMA, its Sections and Committees. It has been developed through consultation among manufacturers, users, and national engineering societies. This publication references the following standards (all referenced documents use the latest document date):

American Society for Testing and Materials

100 Barr Harbor Drive
Conshohocken, PA 19428-2959

ASTM A123/A123M-01	<i>Standard Specification for Zinc (Hot Dip Galvanized) Coatings of Iron and Steel Products</i>
ASTM A153/A153M-01	<i>Standard Specification for Zinc Coatings (Hot-Dip) on Iron and Steel Hardware</i>
ASTM A276-05a	<i>Standard Specification for Stainless Bars and Shapes</i>
ASTM A370-97a	<i>Standard Test Methods and Definitions for Mechanical Testing of Steel Products</i>
ASTM E376-96	<i>Standard Practice for Measuring Coating Thickness by Magnetic-Field or Eddy-Current (Electromagnetic) Test Methods</i>

Institute of Electrical and Electronic Engineers

445 Hoes Lane
Piscataway, NJ 08854

ANSI/IEEE C2-2002	<i>National Electrical Safety Code</i>
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National Fire Protection Association, Inc.

One Batterymarch Park
Quincy, MA 02169

ANSI/NFPA 70-2005	<i>National Electrical Code</i> [®]
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Underwriters Laboratories, Inc.

333 Pfingsten Road
Northbrook, IL 60062

ANSI/UL 467-1993	<i>Standard for Grounding and Bonding Equipment</i>
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