NEMA Standards Publication

NEMA C29.14a-2019

# Standard for Composite Insulators Guy (Strain) Insulator Type (Ultra-Violet Light Resistant Polymer Material Covered Rod Type)



National Electrical Manufacturers Association

**NEMA Standards Publication C29.14a-2019**

*Composite Insulators Guy (Strain) Insulator Type*
*(Ultra-Violet Light Resistant Polymer Material Covered Rod Type)*

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# Foreword

(This Foreword is not part of NEMA Standard C29.14a-2019)

This is the first edition of this Standard.

Suggestions for improvement of this Standard are welcome. They should be submitted to:

Senior Technical Director, Operations
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Rosslyn, VA 22209

**Member Companies**

| | |
|---|---|
| Hubbell Power Systems | Columbia, SC |
| K-Line Insulators USA Inc. | Rochester, NY |
| Lapp Insulators LLC | LeRoy, NY |
| NGK-Locke | Virginia Beach, VA |
| MacLean Power Systems | Fort Mill, SC |
| Seves USA | Spring, TX |
| PPC USA | Houston, TX |
| TE Connectivity | Harrisburg, PA |
| Victor Insulators, Inc. | Victor, NY |

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# 1 Scope

This standard covers composite guy (strain) type insulators made of a fiberglass-reinforced resin matrix core, an ultra-violet light-resistant polymer material rod cover, and metal end fittings intended for use on overhead lines for electric power systems to insulate or isolate guy wires for corrosion protection, increased insulation levels, or clearance for maintenance and normal operation.
Strain type insulators with other ultra-violet light-resistant coatings such as painted or veiled fiberglass-reinforced core rods are covered in NEMA Standard C29.14B.

# 2 Normative References

This standard is intended to be used in conjunction with the latest revision of the following additional standards.

## 2.1 American National Standards

ANSI C29.1 *American National Standard – Test Methods for Electric Power Insulators*
ANSI C29.11 *American National Standard for Composite Insulators – Test Methods*

## 2.2 Other Standards

ASTM A153 *Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware*
ASTM D2565 *Standard Practice for Xenon Arc-Type Exposure of Plastics Intended for Outdoor Applications*
ASTM G155 *Standard Practice for Operating Xenon-Arc Light Apparatus for Exposure of Non-Metallic Materials*
ASTM G154 *Standard Practice for Operating Fluorescent Ultraviolet (UV) Lamp Apparatus for Exposure of Non-Metallic Materials*
IEEE Std. 4 *IEEE Standard Techniques for High Voltage Testing*

# 3 Definitions

See Section 2 of American National Standard Test Methods for Electrical Power Insulators, ANSI C29.1 and, Section 3 of American National Standard Composite Insulators – Test Methods, ANSI C29.11, for definition of terms.

# 4 General

Guy Insulators shall conform in all respects to the requirements of this standard. The text, figures, and tables supplement each other and shall be considered part of this standard.

Manufacturer's drawings, if furnished, shall show the outline of the insulators, together with all pertinent dimensions and mechanical, electrical, and leakage values. Any variations in these dimensions due to manufacturing tolerances shall be indicated.

# 5 Materials

## 5.1 Core

The core is the internal insulating part of a composite guy insulator. It is intended to carry the mechanical load and consists mainly of glass fibers positioned in a resin matrix to develop mechanical strength.