NEMA Standards Publication

ANSI/NEMA C29.12-2020

American National Standard for Composite Insulators—Transmission Suspension Type

National Electrical Manufacturers Association

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American National Standard for Composite Insulators— Transmission Suspension Type

Secretariat:

National Electrical Manufacturers Association

Approved: April 24, 2020

American National Standards Institute, Inc.

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Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

Printed in the United States of America.

Foreword

(This foreword is not a part of American National Standards C29.12-2019)

The first edition of this Standard was based on a NEMA proposed Standards publication for composite suspension insulators used on overhead transmission lines. It was developed at the request of American National Standards Committee on Insulators for Electric Power Lines, ASC C29.

This Standard was processed and approved for submittal to ANSI by ASC C29. Committee approval of the Standard does not necessarily imply that all committee Members voted for approval. At the time it approved this Standard, the ASC C29 Committee had the following Members:

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1 Scope

This Standard covers composite suspension (tension) insulators with a minimum section length of 46 inches (1168.4 millimeters) made of a fiberglass-reinforced resin matrix core, polymer material weathersheds, and metal end fittings intended for use on overhead transmission lines for electric power systems. Mechanical and electrical performance levels specified herein are requirements for new insulators.

2 Normative References

2.1 Referenced American National Standards

This Standard is intended to be used in conjunction with the following American National Standards. When these Standards are superseded by a revision approved by the American National Standards Institute, the revision shall apply.

ANSI C29.1 *Test Methods of Electrical Power Insulators*
ANSI C29.2B Wet Process Porcelain and Toughened Glass—Transmission Suspension Type
ANSI C29.11 *American National Standard For Composite Insulators—Test Methods*
IEEE 4 *Techniques for High-Voltage Testing*
IEEE 100 *Dictionary of Electrical and Electronics Terms*

2.2 Other Standards

This Standard is intended to be used in conjunction with the following Standards. When these Standards are superseded by a revision approved by their respective Standards bodies, the revision shall apply.

IEC 60695-11-10, *Fire Hazard Testing—Part 11-10: Test Flames—50 W Horizontal and Vertical Flame Test Methods*
NEMA Publication Number 107-2016, *Methods of measurement of radio influence voltage (RIV) of high-voltage apparatus*
ISO-3452-1, Non-Destructive Testing—Penetrant Testing—Part 1: General Principles
ASTM B499-09, Standard Test Method for Measurement of Coating Thicknesses by the Magnetic Method; Nonmagnetic Coatings on Magnetic Basis Metals.
ASTM A153/A153M—Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

3 Definitions and Abbreviations

See Section 3 of *American National Standard for Composite Insulators—Test Methods* ANSI C29.11, and Section 2 of *American National Standard Test Methods for Electrical Power Insulators* ANSI C29.1, for definitions of terms not defined here.

3.1 Specified Mechanical Load (SML)

The SML is a value that has to be verified during a tensile load test. It forms the tensile loading basis for the selection of a composite suspension insulator.

3.2 Routine Test Load (RTL)

The RTL is a load equal to 50% of the SML.

3.3 Abbreviations

Abbreviations used in this document include:

a. mA – milliamperes
b. rms – root-mean-square