# STANDARD FOR EXTRUDED INSULATION POWER CABLES RATED ABOVE 46 THROUGH 345 KV

Approved by

**AMERICAN NATIONAL STANDARDS INSTITUTE**

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**INSULATED CABLE ENGINEERS ASSOCIATION, Inc.**

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# EXTRUDED INSULATION POWER CABLES RATED ABOVE 46 THROUGH 345 KV

## Standard
## ICEA S-108-720-2004

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# FOREWORD

This Standards Publication for Extruded Insulation Power Cables Rated above 46 to 345 kV (ICEA S-108-720) was developed by the Insulated Cable Engineers Association Inc. (ICEA).

ICEA standards are adopted in the public interest and are designed to eliminate misunderstandings between the manufacturer and the purchaser and to assist the purchaser in selecting and obtaining the proper product for his particular need. Existence of an ICEA standard does not in any respect preclude the manufacture or use of products not conforming to the standard. The user of this Standards Publication is cautioned to observe any health or safety regulations and rules relative to the manufacture and use of cable made in conformity with this Standard.

Requests for interpretation of this Standard must be submitted in writing to the Insulated Cable Engineers Association, Inc., P. O. Box 1568, Carrollton, Georgia 30112. An official written interpretation will be provided. Suggestions for improvements gained in the use of this Standard will be welcomed by the Association.

The ICEA expresses thanks to the Association of Edison Illuminating Companies, Cable Engineering Committee for providing the basis for some of the material included herein through their participation in the Utility Power Cable Standards Technical Advisory Committee (UPCSTAC), and to the Institute of Electrical and Electronics Engineers, Insulated Conductors Committee, Subcommittee A, Discussion Group A-14 for providing user input to this Standard.

The members of the ICEA working group contributing to the writing of this Standard consisted of the following:

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# Part 1
# GENERAL

## 1.1 SCOPE

This standard applies to materials, constructions, and testing of crosslinked polyethylene (XLPE) and ethylene propylene rubber (EPR) insulated single conductor shielded power cables rated above 46 to 345 kV used for the transmission of electrical energy.

## 1.2 GENERAL INFORMATION

This publication is arranged to allow for selection of individual components (such as conductors, insulation, semiconducting shields, metallic shields, jackets, etc.) as required for specific installation and service conditions.

Parts 2 to 7 cover the major components of cables:

Part 2 - Conductor
Part 3 - Conductor Shield
Part 4 - Insulation
Part 5 - Extruded Insulation Shield
Part 6 - Metallic Shielding
Part 7 - Jacket

Each of these parts designates the materials, material characteristics, dimensions, and tests applicable to the particular component.

Part 8 covers identification of cables.
Part 9 covers production test procedures applicable to cable component materials and to completed cables.
Part 10 covers qualification test procedures.
Part 11 contains appendices of pertinent information.

U.S. customary units, except for temperature, are specified throughout this standard. Approximate International System of Units (SI) equivalents are included for information only.

## 1.3 INFORMATION TO BE SUPPLIED BY PURCHASER

When requesting proposals from cable manufacturers, the prospective purchaser should describe the cable desired by reference to pertinent provisions of these standards. To help avoid misunderstandings and possible misapplication of the cable, the purchaser should also furnish the following information:

### 1.3.1 Characteristics of Systems on which Cable is to be Used

a. Desired ampacity for normal and emergency operation.
b. Frequency.
c. Nominal phase to phase operating voltage.
d. Maximum phase to phase operating voltage.
d. Basic Impulse Voltage.
e. Symmetrical and asymmetrical fault current and duration for conductor and metallic shield/sheath.
f. Daily load factor.