

## Industry Specifications, Standards, and References

The latest, AEIC-approved dates of the specifications, standards, and references are listed in the table below:

Last Updated: 3/22/07

| Document Number  | Description  | Date |
|--|--|------|
| <b>American National Standards Institute (ANSI)</b>  |  |      |
| 11 West 42 <sup>nd</sup> Street, 13 <sup>th</sup> Floor<br>New York, New York 10036 USA<br><a href="http://www.ansi.org">http://www.ansi.org</a> |  |      |
| ANSI C2  | National Electrical Safety Code (NESC)   | 2007 |
| ANSI/ICEA S-94-649   | Standard for Concentric Neutral Cables Rated 5 through 46 kV   | 2004 |
| ANSI/ICEA S-97-682   | Standard for Utility Shielded Power Cables Rated 5 through 46 kV   | 2006 |
| ANSI/ICEA S-105-692  | 600 Volt Single Layer Thermoset Insulated Utility Underground Distribution Cables  | 2004 |
| ANSI/ICEA S-108-720  | Standard for Extruded Insulation Power Cables Rated Above 46 Through 345 kV  | 2004 |
| ANSI/ICEA T-26-465   | Guide for Frequency of Sampling Extruded Dielectric Power, Control, Instrumentation, and Portable Cables for Test (See NEMA WC 54) | 2001 |
| <b>Electric Power Research Institute (EPRI)</b>  |  |      |
| 3412 Hillview Avenue<br>P.O. Box 10412<br>Palo Alto, CA 94303 USA<br><a href="http://www.epri.org">http://www.epri.org</a>                       |  |      |
| EPRI EL-3014   | Optimization of the Design of Metallic Shield-Concentric Conductors of Extruded Dielectric Cables Under Fault Conditions           | 1983 |
| EPRI EL-5757   | Thermal Overload Characteristics of Extruded Dielectric Cables   | 1988 |
| EPRI TR-101245   | Effect of DC Testing on Extruded Cross-Linked Polyethylene Insulated Cables  | 1993 |
| EPRI TR-101245-V2  | Effect of DC Testing on Extruded Cross-Linked Polyethylene Insulated Cables – Phase II   | 1995 |
| <b>International Electrotechnical Commission (IEC)</b>   |  |      |
| <a href="http://www.iec.ch">http://www.iec.ch</a>  |  |      |
| IEC 60228  | Conductors of Insulated Cables   | 2004 |
| IEC 60229  | Tests on Cable Oversheaths Which Have a Special Protective Function and Are Applied by Extrusion                                   | 1982 |
| IEC 60287  | Electric cables - Calculation of the current rating: Current rating equations (100 % load factor) and calculation of losses        | 2006 |

| Document Number | Description  | Date |
|-----------------|--|------|
| IEC 60529       | Degrees of protection provided by enclosures (IP Code)   | 2001 |
| IEC 60840       | Power cables with extruded insulation and their accessories for rated voltages above 30 kV (Um = 36 kV) up to 150 kV (Um = 170 kV) - Test methods and requirements   | 2004 |
| IEC 60853-2     | Calculation of the cyclic and emergency current rating of cables   | 1989 |
| IEC 60885       | Electrical test methods for power cables   | 1987 |
| IEC 60859       | Cable connections for gas-insulated metal-enclosed switchgear for rated voltages of 72.5 kV and above  | 2000 |
| IEC 62067       | Power cables with extruded insulation and their accessories for rated voltages above 150 kV (Um = 170 kV) up to 500 kV (Um = 550 kV) - Test methods and requirements | 2006 |

### Institute of Electronic and Electrical Engineers (IEEE)

445 Hoes Lane  
Piscataway, NJ 08854-4141 USA  
<http://www.ieee.org>

|             |  |                 |
|-------------|--|-----------------|
| IEEE 48     | Standard Test Procedures and Requirements for Alternating Current Cable Terminations 2.5 kV through 765 kV | 1996<br>(R2003) |
| IEEE C62.11 | Standard for Metal-Oxide Surge Arresters for AC Power Circuits (> 1 kV)                                    | 2005            |
| IEEE 100    | The Authoritative Dictionary of IEEE Standards Terms   | 2000            |
| IEEE 404    | Standard for Extruded and Laminated Dielectric Shielded Cable Joints Rated 2,500 – 500,000 V               | 2000            |
| IEEE 693    | Recommended Practice for Seismic Design of Substations   | 2005            |

### Insulated Cable Engineers Association (ICEA)

P.O. Box 440  
South Yarmouth, MA 02664 USA  
<http://www.icea.net>

NEMA and ICEA Standards may be ordered from:

Global Engineering Documents  
15 Inverness Way East  
Englewood, CO 80112 USA  
<http://www.global.ihs.com>

|                     |   |      |
|---------------------|---|------|
| ICEA P-45-482       | Short-Circuit Performance of Metallic Shielding and Sheaths of Insulated Cable    | 1999 |
| ANSI/ICEA S-94-649  | Standard for Concentric Neutral Cables Rated 5 through 46 kV                      | 2004 |
| ANSI/ICEA S-97-682  | Standard for Utility Shielded Power Cables Rated 5 through 46 kV                  | 2006 |
| ANSI/ICEA S-105-692 | 600 Volt Single Layer Thermoset Insulated Utility Underground Distribution Cables | 2004 |

| <b>Document Number</b> | <b>Description</b>   | <b>Date</b> |
|------------------------|--|-------------|
| ANSI/ICEA S-108-720    | Standard for Extruded Insulation Power Cables Rated Above 46 Through 345 kV  | 2004        |
| ICEA T-24-380          | Guide for Partial Discharge Test Procedure   | 1994        |
| ANSI/ICEA T-26-465     | Guide for Frequency of Sampling Extruded Dielectric Power, Control, Instrumentation, and Portable Cables for Test (See NEMA WC 54) | 2001        |
| ICEA T-27-581          | Standard Test Methods for Extruded Dielectric Power, Control, Instrumentation, and Portable Cables for Test (NEMA WC 53)           | 2005        |
| ICEA T-31-610          | Guide for Conducting a Longitudinal Water Penetration Resistance Test for Sealed Conductors  | 1994        |
| ICEA T-32-645          | Guide for Establishing Compatibility of Sealed Conductor Filler Compounds with Conductor Stress Control Materials                  | 1993        |

### **National Electrical Manufacturers Association (NEMA)**

1300 North 17th Street, Suite 1847  
 Rosslyn, VA 22209 USA  
<http://www.nema.org>

NEMA and ICEA Standards may be ordered from:

Global Engineering Documents  
 15 Inverness Way East  
 Englewood, CO USA 80112  
<http://www.global.ihs.com>

|            |  |      |
|------------|--|------|
| NEMA WC 26 | Binational Wire and Cable Packaging Standard (Amended)   | 2003 |
| NEMA WC 54 | Guide for Frequency of Sampling Extruded Dielectric Power, Control, Instrumentation, and Portable Cables for Test (See ANSI/ICEA T-26-465) | 2001 |
| NEMA 250   | Enclosures for Electrical Equipment (1000 Volts Maximum)   | 2003 |