NEMA Standards Publication

NEMA HP 5-2013

Electrical and Electronic Crosslinked, Modified Polyethylene (XLPE) Insulated 125 degree C Hook-Up Wire, Types L (600 V), LL (1000 V), and LX (3000 V)

National Electrical Manufacturers Association

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FOREWORD

This standards publication was developed by the NEMA High Performance Wire and Cable Section. It was developed to ensure that these types of hook-up wire can be procured and that they will meet requirements associated with high reliability commercial electrical and electronic equipment in which it is used. Compliance with provisions of this standards publication is strictly voluntary and any certification of compliance is left to the discretion of the buyer and seller.

This standards publication was designed as a non-government standard for replacement of MIL-W-16878 XLPE insulated wire slash sheets (/14, /15, /16,).

This standards publication was developed by the High Performance Wire and Cable Section of NEMA. Section approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development. At the time it was approved, the Section was composed of the following members:

AFC Cable Systems	New Bedford, MA
Apical Division, Kaneka North America	Pasadena, TX
Belden Inc.	St. Louis, MO
Berk-Tek a Nexans Company	Elm City, NC
Cable USA LLC.	Naples, FL
Champlain Cable Corporation	Colchester, VT
Coleman Cable Inc.	Waukegan, IL
Comtran Cable LLC	Attleboro, MA
Electrolock, Inc.	Hiram, OH
Freeport McMoRan Copper & Gold	Phoenix, AZ
General Cable	Highland Heights, KY
Harbour Industries LLC.	Shelburne, VT
IWG High Performance Conductors	Inman, SC
Lockheed Martin MS2	Moorestown, NJ
Marine Tech Wire and Cable, Inc.	York, PA
Nexans AmerCable	El Dorado, AR
Quirk Wire Company, Inc.	West Brookfield, MA
Radix Wire Company	Euclid, OH
RSCC Aerospace and Defense	East Granby, CT
SEA Wire and Cable, Inc.	Madison, AL
Southwire Company	Carrollton, GA
The Monroe Cable Company, Inc.	Middletown, NY
The Okonite Company	Ramsey, NJ
TE Connectivity	Menlo Park, CA
Wiremasters, Inc.	Columbia, TN

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Section 1
GENERAL

1.1 SCOPE

This standards publication covers specific requirements for cross-linked, modified polyethylene insulated solid and stranded wire designed to the internal wiring of high reliability electrical and electronic equipment. This document addresses 600 V (Type L), 1000 V (Type LL), and 3000 V (Type LX) wire and permits continuous conductor temperature ratings of –65°C to + 125°C with either tin-coated, or silver-coated conductors. These types of hook-up wire are used when the following requirements are called for.

- Moderate temperature resistance
- Low temperature resistance
- Moderate dielectric constant
- Good flexibility and flex life when stranded conductors are used
- Solder iron resistance for easier solder terminations without potential damage
- Good fire resistance

1.2 REFERENCED STANDARDS AND SPECIFICATIONS

American Society for Testing and Materials (ASTM)
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

B3	*Soft or Annealed Copper Wire*
B33	*Tinned Soft or Annealed Copper Wire*
B286	*Copper Conductors for Use in Hook-up Wire for Electronics*
B298	*Silver Coated Soft or Annealed Copper Wire*
B624	*High-Strength, High Conductivity Copper-Alloy Wire for Electronic Applications*
D3032	*Methods of Testing Hook-Up Wire Insulation*
G21	*Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*

American Society for Quality Control
611 E. Wisconsin Ave.
Milwaukee, WI 53202

ANSI/ASQC Z1.4	*Sampling Procedures and Tables for Inspection by Attributes*

Electonics Industries Association
2500 Wilson Blvd.
Arlington, VA 22201

EIA-359-A-85	*EIA Standard Colors for Color Identification and Coding*