Approved as an American National Standard
ANSI Approval Date: April 22, 2021

ANSI NEMA HP 5-2021

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

Published by

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

www.nema.org

NOTICE AND DISCLAIMER

The information in this publication was considered technically sound by the consensus of persons engaged in the development and approval of the document at the time it was developed. Consensus does not necessarily mean that there is unanimous agreement among every person participating in the development of this document.

The National Electrical Manufacturers Association (NEMA) Standards and guideline publications, of which the document contained herein is one, are developed through a voluntary consensus Standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. While NEMA administers the process and establishes rules to promote fairness in the development of consensus, it does not write the document and it does not independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in its Standards and guideline publications.

NEMA disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. NEMA disclaims and makes no guaranty or warranty, express or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any of your particular purposes or needs. NEMA does not undertake to guarantee the performance of any individual manufacturer or seller's products or services by virtue of this Standard or guide.

In publishing and making this document available, NEMA is not undertaking to render professional or other services for or on behalf of any person or entity, nor is NEMA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances. Information and other Standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

NEMA has no power, nor does it undertake to police or enforce compliance with the contents of this document. NEMA does not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health or safety-related information in this document shall not be attributable to NEMA and is solely the responsibility of the certifier or maker of the statement.

CONTENTS

Tables

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 NEMA High Performance Wire and Cable Section Aerospace Committee. 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:

Oscar	Castellanos	Cable USA LLC, a Marmon Wire & Cable, Berkshire Hathaway Company
David	Dexter	Champlain Cable Corporation
Rick	Antic	Champlain Cable Corporation
Richard	Trahan	Champlain Cable Corporation
Kevin	Coderre	Marmon Aerospace & Defense
Peter	Schlichting	Quirk Wire Company, Inc.
Ashley	Clark	Quirk Wire Company, Inc.
William	Thomas	SEA Wire and Cable, Inc.
Mike	Kearney	Specialty Cable Corporation
Jeff	Schroeder	Specialty Cable Corporation
Jonathan	Bauer	TE Connectivity
Cathy	Dutton	TE Connectivity
Robert	Moore	TE Connectivity / AD&M Wire and Cable
William	Crawford	The Okonite Company
Bruce	Sellers	The Okonite Company
Rush	Holladay	WireMasters, Inc.
Nathan	Christiansen	WireMasters, Inc.
Chris	Sayler	WireMasters, Inc.
Caleb	Thurman	WireMasters, Inc.

This Standard was processed and approved for submittal to ANSI by the NEMA C8 Committee on Insulated Wire and Cables, Excluding Magnet Wire. Committee approval of the Standard does not necessarily imply that all committee Members voted for its approval. At the time it approved this Standard, the C8 committee had the following Members:

Kenneth	Bow	Kable Consult LLC
Lauri	Hiivala	Power Cable Consultant
Trung	Hiu	USDA Rural Development Utilities Programs
Michael	Kinard	Consultant
Anthony	Tassone	UL LLC
Todd	Taylor	Enfinity Engineering
Gerald	Dorna	Belden
Christel	Hunter	Cerrowire
Kevin	Porter	Encore Wire Corporation
Michael	Stover	Optical Cable Corporation

Henson	Toland	OFS Fitel
David	Watson	Southwire Company
Jared	Weitzel	Prysmian Group
Lee	Perry	Service Wire Company
Nigel	Hampton	NEETRAC
Ewell	Robeson	Carolina Power & Light

Section 1
General

1.1 Scope

This Standards publication covers specific requirements for crosslinked, modified polyethylene insulated solid and stranded wire, designed to the internal wiring of high-reliability electrical and electronic equipment. This Standards publication 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:

a. Moderate temperature resistance
b. Low temperature resistance
c. Moderate dielectric constant
d. Good flexibility and flex life when stranded conductors are used
e. Solder iron resistance for easier solder terminations without potential damage
f. Good fire resistance