NEMA Standards Publication

NEMA TCB 2-2017

Guidelines for the Selection and Installation of Underground Nonmetallic Raceways

National Electrical Manufacturers Association

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Guidelines for the Selection and Installation of Underground Nonmetallic Raceways

Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, Virginia 22209
www.nema.org

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Foreword

These guidelines are intended to assist in obtaining the most appropriate and satisfactory installation of rigid nonmetallic conduit (RNC) or raceway systems.

These guidelines are in no way intended to assume or replace any responsibilities of engineers, customer representatives, owners, or other persons in establishing engineering design practices and procedures best suited to individual job conditions.

Typical Installation Using Spacers

NEMA TCB 2 was approved by the NEMA Polymer Raceway Products Section. Approval does not necessarily imply that all members of the Section voted for its approval. At the time of approval, the Section consisted of the following members:

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Allied Tube and Conduit, a part of Atkore International, Harvey, IL, www.alliedtube.com
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The NEMA Polymer Raceway Products Section will periodically review this standard and revise it as necessary.

Proposed or recommended revisions can be submitted to:

Senior Technical Director, Operations
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1 Scope

This guideline covers recommendations for the selection, handling and installation of underground single bore rigid nonmetallic conduit (RNC) or raceway for power, lighting, signaling, and communications applications. For this guideline, RNC refers to PE, PVC or RTRC conduit and duct. Corrugated coilable utility duct is not covered in this guideline; details on storage, handling, and installation are covered in NEMA TCB 3.

Guidelines for HDPE conduit are covered in NEMA TCB 4.

Although not specifically mentioned in this guideline, variations of the products discussed may occasionally be specified. Users should follow installation recommendations of the manufacturer.

2 Nomenclature

Abbreviations for nonmetallic materials referenced in this guideline include the following:

EPEC	Electrical Polyethylene Conduit
HDPE	High-Density Polyethylene
PVC	Polyvinyl Chloride
RTRC	Reinforced Thermosetting Resin Conduit (fiberglass)

Abbreviations for burial type include:

DB	Direct burial—refers to duct buried without concrete encasement
EB	Encased burial—refers to duct buried with concrete encasement

Abbreviations for stiffness include:

DS	Duct stiffness
PS	Pipe stiffness

Abbreviations for conduit type include:

EPC 40	PVC conduit (Schedule 40)
EPC 80	PVC conduit (Schedule 80)
RNC	Rigid nonmetallic conduit

Abbreviations for wall type include:

HW	Heavy wall—refers to HW RTRC
TW	Thin wall—refers to TW RTRC
SW	Standard wall—refers to SW RTRC
XW	Extra heavy wall—refers to XW RTRC

3 Reference Publications

ASTM D2412 *Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading*

ASTM D2564 *Standard Specification for Solvent Cements for Poly (Vinyl Chloride) (PVC) Plastic Piping Systems*

ASTM D2657 *Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings*

ASTM D2855 *Standard Practice for Making Solvent-Cemented Joints with Poly (Vinyl Chloride) (PVC) Pipe and Fittings*