

NEMA TCB 4-2021

Guidelines for the Selection and Installation of Smooth-Wall Coilable High Density Polyethylene (HDPE) Conduit for Trench Installation



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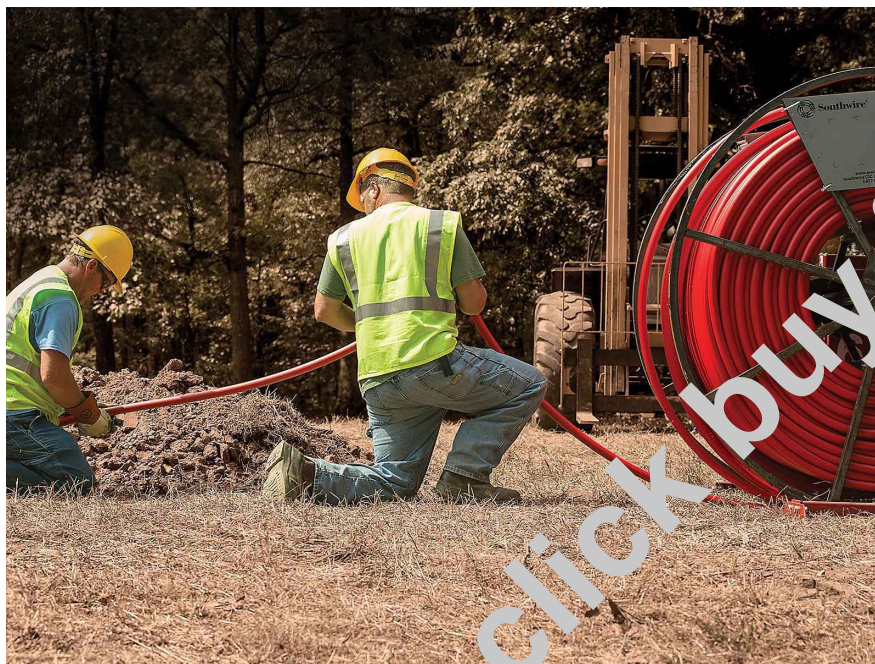
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Foreword

This guideline is intended to provide assistance with obtaining the most appropriate and satisfactory installation of HDPE conduit or raceway systems. It is 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.



NEMA TCB 4 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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The Plastics Pipe Institute, in particular, was active in the development of TCB 4.

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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:

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Section 1 General

1.1 Scope

This guideline covers recommendations for the selection, handling, and installation of underground High-Density Polyethylene (HDPE) conduit or raceway for power, lighting, signaling, and communications applications. Trench installation of single conduit or conduit banks is covered. Corrugated coilable utility duct is not covered in this guideline (see NEMA TCB 3).

1.2 Nomenclature

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

| | |
|------|---------------------------|
| HDPE | High-Density Polyethylene |
| PE | Polyethylene |
| PVC | Polyvinyl Chloride |

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:

| | |
|---------|--|
| EPEC-40 | HDPE or PVC conduit (Schedule 40) |
| EPEC-80 | Extra-heavy wall HDPE or PVC conduit (Schedule 80) |
| EPEC | Smooth Wall Coilable High-Density Polyethylene Conduit |

1.3 Reference Standards

| | |
|----------------|--|
| ASTM D2412-21 | <i>Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading</i> |
| ASTM D2683-20 | <i>Standard Specification for Socket-Type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing</i> |
| ASTM F1055-16a | <i>Standard Specification for Electrofusion Type Polyethylene Fittings for Outside Diameter Controlled Polyethylene and Crosslinked Polyethylene (PEX) Pipe and Tubing</i> |
| ASTM F1056-18 | <i>Standard Specification for Socket Fusion Tools for Use in Socket Fusion Joining Polyethylene Pipe or Tubing and Fittings</i> |
| ASTM F2620-20 | <i>Standard Practice for Heat Fusion Joining of Polyethylene Pipe and Fittings</i> |
| NEMA TC 7-2016 | <i>Smooth Wall Coilable Electrical Polyethylene Conduit</i> |