

**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

JT/T 496-2004

**High-density polyethylene silicon duct for highway
communication conduit
(English Translation)**

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Foreword

The technical indexes and test methods in this Standard partially refer to ASTM D3485-97 "Standard Specification for Coilable High Density Polyethylene (HDPE) Cable in Conduit (CIC)", US Bellcores TR-NWT-000356 "General Technical Requirements for Optical Cable Protective Duct" and NEMA TC7-1990 "Smooth-wall Coilable Electrical Polyethylene Conduit". Annex A, Annex B, Annex C, Annex E, and Annex F are normative; Annex D is informative.

This Standard was proposed by China Research Institute of Highway of the Ministry of Transport.

This Standard shall be under the jurisdiction of National Technical Committee on Transportation Engineering Facilities (Highway) of Standardization Administration of China (SAC/TC223).

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High-density polyethylene silicore duct for highway communication conduit

1 Scope

This Standard specifies product classification, designation, technical requirements, test methods, inspection rules, marks, packaging, transport and storage of high density polyethylene silicore duct for highway communication conduit (hereinafter referred to as silicore duct).

This Standard is applicable to high density silicore protective duct used by communication optical cable or cable paved under highway. For multi-pore high density polyethylene duct, it shall use this Standard as reference.

This Standard is not applicable to protective duct used by communication optical cable or cable which is directly exposed under sunlight.

2 Normative references

The following standards contain the provisions which, through reference in this Standard, constitute the provisions of this Standard. For dated references, subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB/T 191-2000 Packaging - Pictorial marking for handling of goods

GB/T 1039-1992 Plastics - General rules for the test method of

mechanical properties

GB/T 1408.1-1999 Methods of test for electric strength of solid insulating materials - Tests at power frequencies

GB/T 1842-1999 Test method for environmental stress - Cracking of polyethylene plastics

GB/T 2411-1980 Plastics - Determination of hardness by means of a durometer (shore hardness)

GB/T 2828-1987 Sampling procedures and sheets for inspection by attributes (applicable to continuous batch product inspection)

GB/T 2918-1998 Standard atmospheres for conditioning and testing of plastic specimens

GB/T 3682-2000 Determination of the melt mass-flow rate (MFR) and the melt volume-flow rate (MVR) of thermoplastics

GB/T 5470-1985 Test method for brittleness temperature of plastics by impact

GB/T 6671-2001 Thermoplastics pipe - Determination of longitudinal reversion

GB/T 8804.2-1988 Test methods of tensile properties for thermoplastic pipes - Polyethylene (PE) pipes

GB/T 8806-1988 Plastics piping systems - Plastics components - Determination of dimensions

YD/T 841-1996 Plastic pipe for buried communication conduit

3.1 Structure

Silicore duct consists of high density polyethylene (HDPE) outer wall, color bar on the external layer and permanent solid siliceous lubricating layer. The structure of cross section is shown in Figure 1.

3.2.1 Classification by structure.

- Smooth solid inner wall and outer wall of silicore duct, expressed by English capital letter S;
- Silicore duct with smooth outer wall and inner wall carried with longitudinal rib, expressed by English letter R1;
- Silicore duct with outer wall carried with rib and smooth inner wall, expressed by English letter R2;
- Silicore duct with outer wall and inner wall carried with rib, expressed by English letter R3.

air-tightness of plug shall satisfy the water tightness requirements.

5.1 State regulation and standard test environment

Unless otherwise specified, specimen shall be regulated for 24h at $23^{\circ}\text{C} \pm 2^{\circ}\text{C}$ under the conditions stipulated in GB/T 2918-1998. Test shall be carried out under such conditions.

5.2.1 The accuracy level of load sensor universal material testing machine

used in test shall be lower than grade 1 and the accuracy level of length measuring tool, for steel ruler, not lower than grade 2 and for others, not lower than grade 1.

5.2.2 Unless otherwise specified, the sampling and specimen preparation for

tensile test and the adjustment and operation of test machine shall be in accordance with GB/T 1039-1992.

5.3 Appearance inspection

Visually observe the specimen under the natural light condition.

5.4 Measurement of dimensions of silicore duct

Dimensional measurement shall comply with the relevant provisions given in GB/T 8806-1988. The measurement of length prefers the use of the flexible