ICS 23.040.20, 23.040.45, 23.040.99, 93.030

SLOVENSKÁ TECHNICKÁ NORMA

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STN	**Systémy na renováciu kanalizačných potrubí a stôk. Výstelkovanie pevne ukotvenou (resp. zakotvenou) vnútornou vrstvou z plastu (RAPL).**	**STN EN 16506** 75 6135

Systems for renovation of drains and sewers - Lining with a rigidly anchored plastics inner layer (RAPL)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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Obsahuje: EN 16506:2014

EUROPEAN STANDARD **EN 16506**

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English Version

Systems for renovation of drains and sewers - Lining with a rigidly anchored plastics inner layer (RAPL)

Systèmes de rénovation des réseaux d'assainissement - Chemisage par revêtement de plastique interne rigidement ancré

Systeme für die Renovierung von Abwasserkanälen und -leitungen - Lining mit fest verankerter Kunststoffauskleidung

This European Standard was approved by CEN on 18 July 2014.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 16506:2014) has been prepared by Technical Committee CEN/TC 165 “Wastewater engineering”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2015 and conflicting national standards shall be withdrawn at the latest by April 2015.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

Products conforming to this standard do not belong to the product family “Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks”, because the structural behaviour depends mainly on the cementitious grout and the plastics inner layer serves primarily as permanent formwork for corrosion protection.

For the technique of spirally wound pipes in particular the scope of EN ISO 11296-7 is distinguished from that of this standard in requiring the plastics pipe component to have adequate ring stiffness to resist all external loads on its own without any structural contribution from grout used as annular filler as given in EN 15885:2010, 5.7. Plastic piping systems used for renovation are specified in the standards series EN ISO 11296, comprising a “Part 1: General” and various technique related parts.

This document follows the approach in considering products used for renovation at the “M” stage and the “I” stage as specified in EN 13380 and the series EN ISO 11296.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies performance requirements and test methods for pipes and fittings for the renovation of underground drain and sewer systems by lining with a single rigid annulus of structural cementitious grout formed behind a plastics inner layer. This plastics layer serves as permanent formwork anchored to the grout. It is applicable to plastics inner layers and grout systems with or without steel reinforcement.

This European Standard does not apply to the structural design of the lining system.

NOTE Systems with multiple annuli are available, but these are controlled by patent rights and not covered by this European Standard.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 196-1, *Methods of testing cement - Part 1: Determination of strength*

EN 206:2013, *Concrete - Specification, performance, production and conformity*

EN 445:2007, *Grout for prestressing tendons - Test methods*

EN 728, *Plastics piping and ducting systems - Polyolefin pipes and fittings - Determination of oxidation induction time*

EN 1015-3, *Methods of test for mortar for masonry - Part 3: Determination of consistence of fresh mortar (by flow table)*

EN 1015-6, *Methods of test for mortar for masonry - Part 6: Determination of bulk density of fresh mortar*

EN 1107-2, *Flexible sheets for waterproofing - Determination of dimensional stability - Part 2: Plastic and rubber sheets for roof waterproofing*

EN 1542:1999, *Products and systems for the protection and repair of concrete structures - Test methods - Measurement of bond strength by pull-off*

EN 1610:1997, *Construction and testing of drains and sewers*

EN 1916:2002, *Concrete pipes and fittings, unreinforced, steel fibre and reinforced*

EN 1979, *Plastics piping and ducting systems - Thermoplastics spirally-formed structured-wall pipes - Determination of the tensile strength of a seam*

EN 10025-1, *Hot rolled products of structural steels - Part 1: General technical delivery conditions*

EN 10025-2, *Hot rolled products of structural steels - Part 2: Technical delivery conditions for non-alloy structural steels*

EN 10048, *Hot rolled narrow steel strip - Tolerances on dimensions and shape*

EN 12814-2, *Testing of welded joints of thermoplastics semi-finished products - Part 2: Tensile test*

EN 12814-8, *Testing of welded joints of thermoplastics semi-finished products - Part 8: Requirements*

EN 13067, *Plastics welding personnel - Qualification testing of welders - Thermoplastics welded assemblies*

EN 13100-4, *Non destructive testing of welded joints of thermoplastics semifinished products - Part 4: High voltage testing*

EN 13412:2006, *Products and systems for the protection and repair of concrete structures - Test methods - Determination of modulus of elasticity in compression*

EN 14117, *Products systems for the protection and repair of concrete structures - Test methods - Determination of time of efflux of cementitious injection products*

EN 14654-1, *Management and control of operational activities in drain and sewer systems outside buildings - Part 1: Cleaning*

CEN/TR 14920, *Jetting resistance of drain and sewer pipes - Moving jet test method*

EN ISO 75-2:2013, *Plastics - Determination of temperature of deflection under load - Part 2: Plastics and ebonite (ISO 75-2:2013)*

EN ISO 527-2:2012, *Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:2012)*

EN ISO 527-3, *Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets (ISO 527-3)*

EN ISO 1133-1:2011, *Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 1: Standard method (ISO 1133-1:2011)*

EN ISO 1133-2:2011, *Plastics - Determination of the melt mass-flow rate (MFR) and melt volume-flow rate (MVR) of thermoplastics - Part 2: Method for materials sensitive to time-temperature history and/or moisture (ISO 1133-2:2011)*

EN ISO 1183-1, *Plastics - Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pyknometer method and titration method (ISO 1183-1)*

EN ISO 2039-1, *Plastics - Determination of hardness - Part 1: Ball indentation method (ISO 2039-1)*

EN ISO 4624:2003, *Paints and varnishes - Pull-off test for adhesion (ISO 4624:2002)*

EN ISO 6259-1, *Thermoplastics pipes - Determination of tensile properties - Part 1: General test method (ISO 6259-1)*

EN ISO 11296-1:2011, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Part 1: General (ISO 11296-1:2009)*

EN ISO 11296-7:2013, *Plastics piping systems for renovation of underground non-pressure drainage and sewerage networks - Part 7: Lining with spirally-wound pipes (ISO 11296-7:2011)*