SLOVENSKI STANDARD
SIST EN 15701:2017

01-januar-2017

Nadomešča:
SIST EN 15701:2009

Polimerni materiali - Plastomerni jopiči za izoliranje proizvodov opreme stavb in za industrijske inštalacije - Zahteve in preskusne metode

Plastics - Thermoplastic jackets for insulation products for building equipment and industrial installations - Requirements and test methods

Kunststoffe - Ummantelungen aus thermoplastischen Kunststoffen für Dämmstoffe für die Haustechnik und für betriebstechnische Anlagen - Anforderungen und Prüfungen

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Plastiques - Enveloppes thermoplastiques pour isolants destinés au bâtiment et aux installations industrielles - Exigences et méthodes d'essai

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Ta slovenski standard je istoveten z: **EN 15701:2016**

ICS:

83.140.99	Drugi izdelki iz gume in polimernih materialov	Other rubber and plastics products

SIST EN 15701:2017 **en,fr,de**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 15701

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English Version

Plastics - Thermoplastic jackets for insulation products for building equipment and industrial installations - Requirements and test methods

Plastiques - Enveloppes thermoplastiques pour isolants destinés au bâtiment et aux installations industrielles - Exigences et méthodes d'essai

Kunststoffe - Ummantelungen aus thermoplastischen Kunststoffen für Dämmstoffe für die Haustechnik und für betriebstechnische Anlagen - Anforderungen und Prüfungen

This European Standard was approved by CEN on 20 August 2016.

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COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 15701:2016) has been prepared by Technical Committee CEN/TC 249 “Plastics”, the secretariat of which is held by NBN.

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of an identical text or by endorsement, at the latest by May 2017, and conflicting national standards shall be withdrawn at the latest by August 2018.

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

This document supersedes EN 15701:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Regulation n° 305/2011.

For relationship with EU Regulation n° 305/2011, see informative Annex ZA, which is an integral part of this document.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

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1 Scope

This European Standard specifies the requirements for thermoplastic jackets for insulation products for building equipment and industrial installations and the test methods to be used.

The European Standard does not apply to systems in which the jackets have already been securely fixed over the whole surface of an insulating material *in situ*.

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 13501-1:2007+A1:2009, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 15715, *Thermal insulation products - Instructions for mounting and fixing for reaction to fire testing - Factory made products*

EN ISO 6401, *Plastics - Poly(vinyl chloride) - Determination of residual vinyl chloride monomer - Gas-chromatographic method (ISO 6401)*

EN ISO 8256, *Plastics - Determination of tensile-impact strength (ISO 8256)*

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EN ISO 11925-2, *Reaction to fire tests - Ignitability of products subjected to direct impingement of flame - Part 2: Single-flame source test (ISO 11925-2)*

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ISO 4593, *Plastics — Film and sheeting — Determination of thickness by mechanical scanning*

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3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
film
plastic sheeting generally supplied in the form of a roll

3.2
moulding
single or multi-part, three-dimensional product which is made by thermoforming of a plastic film or board and which is made up of cut and machined film/boards

EXAMPLE Elbows, branches, covers, valve coatings, special parts.

3.3
laminate
combination of two or more materials that are bonded together during manufacture to produce a single item or product

[SOURCE: EN ISO 9229:2007, 2.3.13]

3.4
linear application
use of jackets on insulation on straight sections of pipe

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3.5
board
rectangular solid product generally supplied in slabs

3.6
thermoplastic, noun
plastic that has thermoplastic properties

[SOURCE: EN ISO 472:2013, 2.1178]

3.7
thermoplastic, adjective
capable of being softened repeatedly by heating and hardened by cooling through a temperature range characteristic of the plastic and, in the softened state, of being shaped by flow repeatedly into articles by moulding, extrusion or forming

[SOURCE: EN ISO 472:2013, 2.1177]

3.8
jackets
rigid, semi-rigid, frequently preformed sheet material that provides mechanical and/or environmental protection or a decorative finish to thermal insulation

[SOURCE: EN ISO 9229:2007, 2.5.2]

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4 Requirements

4.1 Requirements for the material composition of the jackets

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Thermoplastic materials within the meaning of this standard are homogenous plastics, composite structures (laminates) of different plastics and composite structures of plastics and other materials including primers where the percentage by mass of the plastic film shall be at least 80 %.

4.2 Requirements for vinyl chloride (VC) residual monomer content

Only plastic film shall be used that has a VC residual monomer content not exceeding 0,000 1 % by mass. The test shall be carried out according to 5.1.1.

4.3 Technical and mechanical requirements

4.3.1 General

With regard to the technical and mechanical requirements, a distinction is made between:

a) film in linear applications;

b) plastic film or boards as initial materials for mouldings or finished mouldings made from them.

4.3.2 Technical and mechanical requirements for film for linear applications

4.3.2.1 Film thickness

The tolerances given in Table 1 relative to the nominal thickness shall be maintained in at least 95 % of all measurements.

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Table 1 — Tolerances relative to the nominal thickness

Nominal thickness µm	**Tolerance** %
≤ 200	±10
201 to 400	±7
≥ 400	±5

The test shall be carried out according to 5.2.1.

4.3.2.2 Tensile-impact strength

The tensile-impact strength shall be at least 300 kJ/m^2.

The test shall be carried out according to 5.2.2.

4.3.2.3 Width

The permissible tolerance of the actual width from the nominal width shall be ± 1 mm. The tolerance shall be maintained in at least 95 % of all width measurements.

4.3.2.4 Roll run length

For nominal run lengths up to 50 m, the tolerance shall be ± 0,5 m.

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The tolerance shall be maintained in at least 95 % of all run length measurements.

4.3.3 Technical and mechanical requirements for the initial material for mouldings

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The initial material for mouldings shall have a tensile-impact strength of at least 300 kJ/m^2.

4.3.4 Technical and mechanical requirements for the mouldings

4.3.4.1 Moulding thickness

The Material thickness min of the mouldings shall meet the requirements of Table 2.

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Table 2 — Material thickness min

Moulding	Material thickness min
Elbows Branches End pieces	0,15 mm
Valve coatings	0,2 mm
Special parts	no specification

4.3.4.2 Overlapping

The design of the mouldings shall allow an overlap of at least 10 mm during assembly.

4.3.5 Other requirements for film for linear applications and for the initial material for mouldings

For thermal calculations, the values given in Table 3 shall be made available by the manufacturer either as general calculation values based on the literature or as explicit measured values.

Table 3 — Values to be made available

Physical variable	Symbol	Unit
Emissivity	ε	–
Thermal conductivity	λ	W/mK

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4.4 Reaction to fire

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Where required, the reaction to fire of the jackets shall be determined according to 5.3 and 5.4.

Moulded parts used for assembling the jackets are not subject to testing.

4.5 Release of dangerous substances

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction website on EUROPA accessed through: *https://ec.europa.eu/growth/tools-databases/cp-ds_en/*.

4.6 Durability of reaction to fire against ageing/degradation

The reaction to fire performance of thermoplastic jackets does not change with time.

5 Test methods

5.1 Chemical testing

5.1.1 VC residual monomer content

The residual content of monomer vinyl chloride shall be determined according to EN ISO 6401.

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5.2 Mechanical testing

5.2.1 Film thickness

The test shall be carried out according to ISO 4593.

In addition, random measurements shall be taken and recorded.

5.2.2 Tensile-impact strength

The test shall be carried out according to EN ISO 8256.

5.3 Reaction to fire test

The requirements of EN 13501-1:2007+A1:2009, Table 3 “Classes of reaction to fire performance for linear pipe thermal insulation products” apply as the classification criteria of the jackets.

The reaction to fire test of the jackets shall be carried out linearly according to EN 15715 on mineral wool $A1_L$ or $A2_L$ pipe sections with an insulation thickness of 30 mm. When testing according to EN ISO 11925-2, the jackets shall be subject only to surface flame impingement.

The film shall be fastened to the pipe sections with rivets.

For the test, the film shall be aligned with the closing seam in the direction of the back plate.

5.4 Scope of fire classification

Provided that the jacketing is installed tightly on the insulation product, the classification applies to installation:

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— by fixing with plastic push in rivets;

— by fixing with solvent-based adhesive;

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— on any type of CE-marked insulation product with any insulation thickness.

6 Marking, labelling and packaging

Each packaging unit shall be clearly marked by the manufacturer with the following information, either directly on the packaging, with an enclosed notice or with an adhesive label:

a) name of the manufacturer or supplier;

b) trade name of the product;

c) dimensions of the product;

d) quantity of the contents;

e) batch number and/or date of production;

f) number of this European Standard, i.e. EN 15701.

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7 Assessment and verification of constancy of performance (AVCP)

7.1 General

The compliance of Thermoplastic jackets with the requirements of this standard and with performances declared by the manufacturer in the Declaration of performance (DoP) shall be demonstrated by:

— determination of the product type;

— Factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the product.

7.2 Type Testing

7.2.1 General

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, CWFT and conventionally accepted performance).

Tests previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same system of attestation of conformity on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

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For the purposes of testing, the manufacturer's products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristics for all products within that same family (a product may be in different families for different characteristics).

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NOTE Products may be in different families for different characteristics.

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares performances:

— at the beginning of the production of a new or modified thermoplastic jackets(unless a member of the same family), or

— at the beginning of a new or modified method of production (where this may affect the stated properties); or

they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the thermoplastic jackets design, in the raw material or in the supplier of the components, or in the production process (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of compliance with other product standards, these characteristics need not be re-assessed. The specifications of these components shall be documented, as shall be included in the inspection scheme for ensuring their compliance.

7.2.2 Test reports

The results of the determination of the product type shall be documented in test reports. All test reports shall be retained by the manufacturer for at least 10 years after the last date of production of the thermoplastic jackets to which they relate.