SLOVENSKI STANDARD
SIST-TS CEN/TS 13476-4:2013

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Nadomešča:
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Cevni sistemi iz polimernih materialov za odvodnjavanje in kanalizacijo, ki delujejo po težnostnem principu in so položeni v zemljo - Cevni sistemi s strukturirano steno iz nemehčanega polivinilklorida (PVC-U), polipropilena (PP) in polietilena (PE) - 4. del: Navodilo za ugotavljanje skladnosti

Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 4: Guidance for the assessment of conformity

Kunststoff-Rohrleitungssysteme für erdverlegte drucklose Abwasserkanäle und -leitungen - Rohrleitungssysteme mit profilierter Wandung aus weichmacherfreiem Polyvinylchlorid (PVC-U), Polypropylen (PP) und Polyethylen (PE) - Teil 4: Empfehlungen für die Beurteilung der Konformität

Systèmes de canalisations en plastique pour les branchements et les collecteurs d'assainissement sans pression enterrés - Systèmes de canalisations à parois structurées en poly(chlorure de vinyle) non plastifié (PVC-U), polypropylène (PP) et polyéthylène (PE) - Partie 4 : Guide pour l'évaluation de la conformité

Ta slovenski standard je istoveten z: **CEN/TS 13476-4:2013**

ICS:

23.040.20	Cevi iz polimernih materialov	Plastics pipes
91.140.80	Drenažni sistemi	Drainage systems
93.030	Zunanji sistemi za odpadno vodo	External sewage systems

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English Version

Plastics piping systems for non-pressure underground drainage and sewerage - Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) - Part 4: Guidance for the assessment of conformity

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This Technical Specification (CEN/TS) was approved by CEN on 10 June 2012 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

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Foreword

This document (CEN/TS 13476-4:2013) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

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.

This document supersedes CEN/TS 13476-4:2008.

The main changes with respect to the previous edition are listed below:

- updating of the references in Clause 2 and Bibliography;
- updating of the definitions in Clause 3;
- Specification of PVC reprocessable and recycling material Table 2;
- deletion of Table 3, Compound specification PP masterbatch;
- deletion of Table 5, Compound specification PE masterbatch;
- changing Table 8, by deletion of column "P";
- deletion of 4.2.3.2, Preliminary type testing;
- deletion of 4.2.3.3, Initial type testing;
- deletion of Table 11, Specification of use of reprocessable and recyclable material that shall require the production to be considered at least as one batch;
- deletion of Table 12, Material characteristics that require BRT.

EN 13476 consists of the following Parts under the general title *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)*:

— *Part 1: General requirements and performance characteristics*;

— *Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A*;

— *Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B*;

— *Part 4: Guidance for the assessment of conformity* (this Technical Specification).

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to announce this Technical Specification: 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.

Introduction

Figures 1 and 2 are intended to provide general information on the concept of testing and organisation of those tests used for the purpose of the assessment of conformity. For each type of test, i.e. type testing (TT), batch release test (BRT), process verification test (PVT), and audit test (AT), this part of EN 13476 details the applicable characteristics to be assessed as well as the frequency and sampling of testing.

A typical scheme for the assessment of conformity of compounds/formulations, pipes, fittings, joints or assemblies by manufacturers is given in Figure 1.

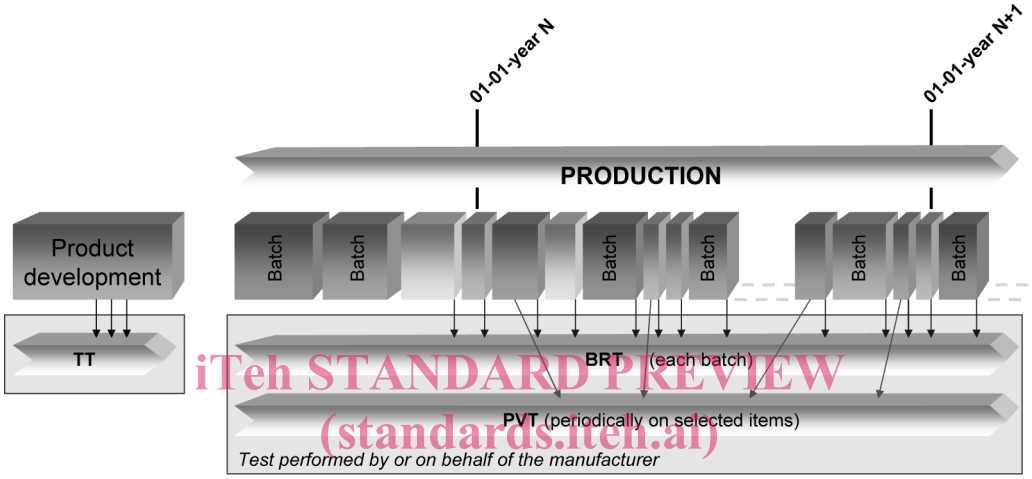

Figure 1 — Typical scheme for the assessment of conformity by a manufacturer

A typical scheme for the assessment of conformity of compounds/formulations, pipes, fittings, joints or assemblies by manufacturers, including a third-party certification, is given in Figure 2.

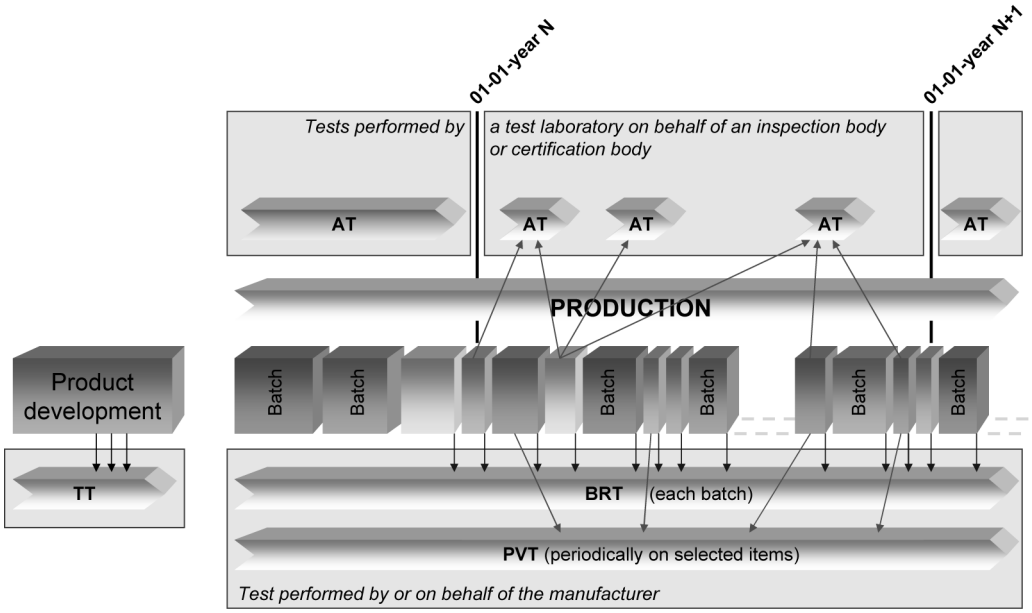

Figure 2 — Typical scheme for the assessment of conformity by a manufacturer, including a third-party certification

1 Scope

This Technical Specification gives guidance for the assessment of conformity of compounds / formulations, products and assemblies in accordance with the applicable part(s) of EN 13476-1, EN 13476-2 and EN 13476-3 intended to be included in the manufacturer's quality plan as part of the quality management system and for the establishment of third-party certification procedures.

It is recommended that the quality management system conforms to or is no less stringent than the relevant requirements to EN ISO 9001:2008 [1].

If third-party certification is involved, it is recommended that the certification body is accredited to EN 45011 [2], EN 45012 [3] or EN ISO/IEC 17021 [4], as applicable.

In conjunction with EN 13476-1, EN 13476-2 and EN 13476-3 (see Foreword) this document is applicable to *Plastics piping systems for non-pressure underground drainage and sewerage — Structural-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE)*:

- for non-pressure underground drainage and sewerage outside the building structure (application area code “U”) reflected in de-marking of products by “U”, and
- for non-pressure underground drainage and sewerage for both buried in ground within the building structure (application area code “D” and outside the building structure (application area code “U”) reflected in de marking of products by “UD”.

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 13476-1:2007, *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 1: General requirements and performance characteristics*

EN 13476-2:2007, *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 2: Specifications for pipes and fittings with smooth internal and external surface and the system, Type A*

EN 13476-3:2007+A1:2009, *Plastics piping systems for non-pressure underground drainage and sewerage — Structured-wall piping systems of unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) and polyethylene (PE) — Part 3: Specifications for pipes and fittings with smooth internal and profiled external surface and the system, Type B*

3 Terms and definitions

For the purposes of this document, the following terms and definitions given in EN 13476-1:2007, EN 13476-2:2007 and EN 13476-3:2007+A1:2009 and the following apply.

3.1
certification body
impartial body, governmental or non-governmental, possessing the necessary competence and responsibility to carry out certification of conformity according to given rules of procedure and management

Note 1 to entry: A certification body is preferably accredited to EN 45011 [2].

3.2
inspection body
impartial organisation or company, approved by the certification body as possessing the necessary competence to verify and/or to carry out initial type testing, audit testing and inspection of the manufacturer's factory production control in accordance with the relevant standard

Note 1 to entry: An inspection body is preferably accredited to EN ISO/IEC 17020 [5].

3.3
testing laboratory
laboratory which measures, tests, calibrates or otherwise determines the characteristics of the performance of materials and products

Note 1 to entry: In the context of this part of EN 13476, the materials and products can be subjected to type testing, batch release testing, process verification testing, audit testing, and witness testing, as applicable.

Note 2 to entry: A testing laboratory is preferably accredited to EN ISO/IEC 17025 [6].

3.4
quality management system
management system to direct and control an organization with regard to quality

Note 1 to entry: Requirements for quality management systems are given in EN ISO 9001:2008 [1].

3.5
quality plan
document setting out the specific quality practices, resources and sequence of activities relevant to a particular product or range of products

3.6
type testing
TT
testing performed to prove that the material, product, joint or assembly is capable of conforming to the requirements given in the relevant standard

Note 1 to entry: The type test results remain valid until there is a change in the material or product or assembly provided that the process verification tests are done regularly.

3.7
batch release test
BRT
test performed by or on behalf of the manufacturer on a batch of formulation/ compound or products, which has to be satisfactorily completed before the batch can be released

3.8
process verification test
PVT
test performed by or on behalf of the manufacturer on formulation/compound or products, joints or assemblies at specific intervals to confirm that the process continues to be capable of producing products which conform to the requirements given in the relevant standard

Note 1 to entry: Such tests are not required to release batches of formulation/compound or products and are carried out as a measure of process control.

3.9
audit test
AT
test performed by a test laboratory on behalf of an inspection body or certification body to confirm that the formulation / compound, product, joint or assembly continues to conform to the requirements given in the relevant standard and to provide information to assess the effectiveness of the quality management system

3.10
indirect test
IT
test performed by or on behalf of the manufacturer, different from that specified test for that particular characteristic, having previously verified its correlation with the specified test

3.11
witness test
WT
test accepted by an inspection or a certification body for type testing and/or audit testing, which is carried out by or on behalf of the manufacturer and supervised by a representative of the inspection or certification body, qualified in testing

3.12
material
generic term for compositions compounds/formulations grouped by families, expressed by generic names, e.g. polypropylene, stainless steel, brass or EPDM

Note 1 to entry: Definition from European Commission, Directorate-General for Enterprise and Industry, Sub-group on Product Testing Procedures (EC, DG ENT and IND, SG PTP).

3.13
compound / formulation
clearly defined homogenous mixture of base polymer with additives, i.e. antioxidants, pigments, stabilizers and others, at a dosage level necessary for the processing and the intended use of the final product

Note 1 to entry: Definition from EC, DG ENT and IND, SG PTP (European Commission, Directorate-General for Enterprise and Industry, Sub-group on Product Testing Procedures).

3.14
material batch
clearly identified quantity of a given homogeneous compound/formulation manufactured under uniform conditions and defined and identified by the compound/formulation manufacturer

3.15
product
pipe or fitting of a clearly identified type intended to be a part of a piping system which the manufacturer puts on the market

3.16
product batch
clearly identified collection of products, manufactured consecutively or continuously under the same conditions, using the same compound/formulation conforming to the same specification

Note 1 to entry: The production batch is defined and identified by the product manufacturer.

3.17
lot
clearly identifiable sub-division of a batch for inspection purposes

3.18
sample
one or more products drawn from the same production batch or lot, selected at random without regard to their quality

Note 1 to entry: The number of products in the sample is the sample size.

3.19
group
collection of similar products from which samples are selected for testing purposes

3.20
component
product manufactured out of a specific composition compound/formulation, brought to the market as part of another product or as a spare part

3.21
joint
connection between two products

3.22
assembled product
assembled final product using two or more single parts

3.23
thermoplastics fabricated fitting
fitting produced from pipe and/or from injection-moulded fittings by thermoforming, solvent-cementing or welding

3.24
assembly
product that can be dismantled into a set of components

EXAMPLE A test piece consisting of various products.

3.25
sampling plan
specification of the type of sampling to be used combined with the operational specification of the entities or increments to be taken, the samples to be constituted and the measurements or tests to be made

EXAMPLE A specific plan which indicates the number of units of products or assemblies to be inspected.

3.26
product type
generic description of a product

EXAMPLE A pipe or fitting or valve or their main parts, of the same design, from a particular compound.

3.27
cavity
(moulding) space within a mould to be filled to form the moulded product

EXAMPLE That part of an injection mould which gives the form to the injection-moulded product.

4 Abbreviated terms

To avoid misunderstanding, the abbreviations in this clause are defined as being the same in each language. For the same reason, the terms are given in the three languages, English, French and German.

EXAMPLE In the French language, the abbreviation for the French equivalent of "acceptable quality level" (AQL) is NQA; however for the purposes of this part of EN 13476, the abbreviation of the English term (AQL) is adopted.

Abbreviation	EN	FR	DE
AT	audit test	essai d'audit	Überwachungsprüfung
BRT	batch release test	essai de libération de campagne de fabrication	Freigabeprüfung einer Charge
IT	indirect test	essai indirect	indirekte Prüfung
PVT	process verification test	essai de vérification du procédé de fabrication	Prozessüberprüfung
TT	type test	essai de type	Typprüfung
WT	witness testing	essai témoin	Prüfung unter Aufsicht

5 General

5.1 Materials, compounds, formulations, products, joints and assemblies shall conform to the requirements given in EN 13476-1, EN 13476-2 and EN 13476-3.

5.2 Products and assemblies shall be produced by the manufacturer under a quality management system which includes a quality plan.

It is recommended that the quality management system conforms to or is no less stringent than the relevant requirements to EN ISO 9001:2008 [1].

6 Testing and inspection

6.1 Material specification PVC

For the purposes of this Technical Specification, the material specification consists of a formulation which defines PVC resin and additives and their dosage levels.

The dosage level of ingredients of a material shall not exceed the tolerance bands given in Table 1. If any level exceeds the dosage band or if a type is changed, this variation in formulation constitutes a change in material.

The use of reprocessable and/or recyclable material with agreed specification shall be considered as a change in formulation when the change in addition exceeds the tolerance bands given in Table 2.

The values of the parts X added to 100 parts by mass of PVC shall be specified by the manufacturer in his quality plan.

Table 1 — Material specification PVC compound

Ingredients	Type	Band
PVC resin	Nominal K value: as specified	+/- 3 units
Type and content of stabiliser or masterbatch	1) OBS (Organic Based Stabilisers) 2) Ca-Zn 3) Sn 4) Ca-Sn 5) others	X_1: ± 25 %
Lubricants	All	X_2: ± 50 % for $X_2 \leq 0{,}2$ X_2: ± 0,1 parts for $X_2 > 0{,}2$
Mineral modifiers	1) $CaC0_3$ 2) others	X_3: $^{0}_{-6}$ parts $X_{4,1}$: $^{0}_{-50}$ % $X_{4,n}$: $^{0}_{-50}$ %
Impact modifiers	All	X_5: ± 1 part
Flow agents	All	X_6: ± 25 % for $X_6 \leq 2$ X_6: ± 0,5 parts for $X_6 > 2$
Pigments		No requirement
Others	To be separately specified by the manufacturer	$X_{7,1}$: ± 12,5 % $X_{7,n}$: ± 12,5 %