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**Cevni sistemi iz polimernih materialov za odpadno vodo in kanalizacijo, ki delujejo po težnostnem principu in so položeni v zemljo - Nemehčan polivinilklorid (PVC-U) - 2. del: Navodilo za ugotavljanje skladnosti**

Plastics piping systems for non-pressure underground drainage and sewerage - Unplasticized poly(vinyl chloride) (PVC-U) - Part 2: Guidance for the assessment of conformity

Kunststoff-Rohrleitungssysteme für erdverlegte drucklose Abwasserkanäle und -leitungen - Weichmacherfreies Polyvinylchlorid (PVC-U) - Teil 2: Empfehlungen für die Beurteilung der Konformität

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Systèmes de canalisations en plastique pour les branchements et les collecteurs d'assainissement enterrés sans pression - Poly(chlorure de vinyle) non plastifié (PVC-U) - Partie 2 : Guide pour l'évaluation de la conformité

**Ta slovenski standard je istoveten z: FprCEN/TS 1401-2**

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**ICS:**

23.040.05	Cevovodi za zunanje sisteme za odpadno vodo in njihovi deli	Pipeline and its parts for external sewage systems
93.030	Zunanji sistemi za odpadno vodo	External sewage systems

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**FINAL DRAFT**  
**FprCEN/TS 1401-2**

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ICS

Will supersede CEN/TS 1401-2:2012

English Version

Plastics piping systems for non-pressure underground  
drainage and sewerage - Unplasticized poly(vinyl chloride)  
(PVC-U) - Part 2: Guidance for the assessment of  
conformity

Systèmes de canalisations en plastique pour les  
branchements et les collecteurs d'assainissement  
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Kunststoff-Rohrleitungssysteme für erdverlegte  
drucklose Abwasserkanäle und -leitungen -  
Weichmacherfreies Polyvinylchlorid (PVC-U) - Teil 2:  
Empfehlungen für die Beurteilung der Konformität

This draft Technical Specification is submitted to CEN members for Vote. It has been drawn up by the Technical Committee CEN/TC 155.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning :** This document is not a Technical Specification. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a Technical Specification.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
European foreword.....	3
Introduction .....	4
1 Scope.....	6
2 Normative references.....	6
3 Terms and definitions .....	6
4 Abbreviated terms.....	9
5 General.....	9
6 Testing and inspection.....	10
6.1 Material specification.....	10
6.2 Grouping.....	11
6.2.1 General.....	11
6.2.2 Size groups.....	11
6.2.3 Fitting groups .....	11
6.3 Type testing.....	12
6.4 Batch release tests .....	15
6.5 Process verification tests .....	18
6.6 Audit tests .....	19
6.7 Indirect tests.....	21
6.8 Test records .....	21
Annex A (informative) Basic test matrix.....	22
Bibliography.....	23

## European foreword

This document (FprCEN/TS 1401-2:2019) has been prepared by Technical Committee CEN/TC 155 “Plastics piping systems and ducting systems”, the secretariat of which is held by NEN.

This document is currently submitted to the Vote on TS.

This document will supersede CEN/TS 1401-2:2012.

Compared with CEN/TS 1401-2:2012, the following changes have been made:

- merging of Table 1 and Table 2 to have the new Table 1 “Formulation tolerances”;
- clarification that a lower content of non-virgin material in the formulation which has already been Type tested and which is fulfilling the agreed specification is not considered as a material change;
- increase of minimum testing frequencies if an non-virgin material is used.

EN 1401, *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U)*, consists of the following Parts:

- *Part 1: Specifications for pipes, fittings and the system;*
- *Part 2: Guidance for the assessment of conformity.*

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## Introduction

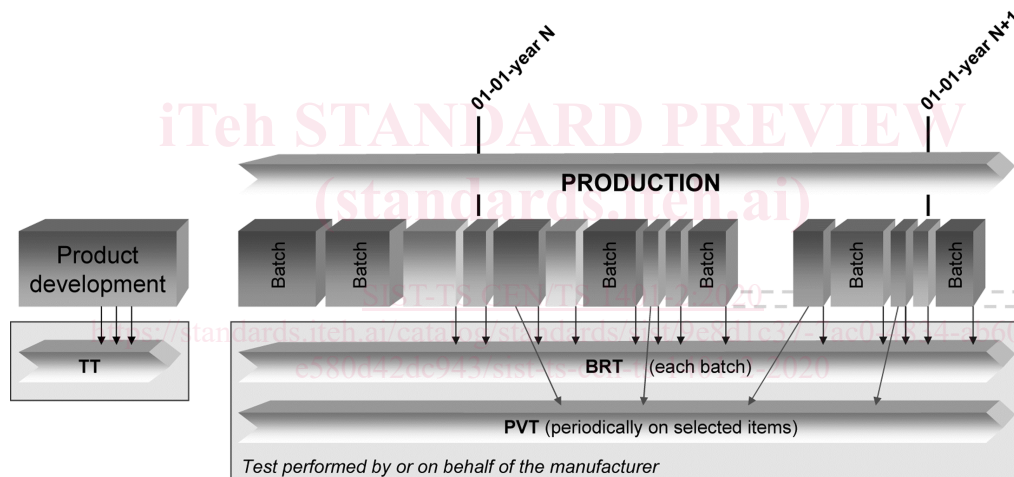
This revision of the EN 1401 series is proposed by CEN/TC155/WG6 members in order to improve the 'level of sustainability' and the 'environmental impact' of PVC piping systems, whilst improving the recommendations and safe use of recycled material. Recycled material is categorised as non-virgin material in this document.

Regarding this specific target, some superfluous requirements and inconsistencies existing in the old version of EN 1401-1 were deleted, and more focus was given to the control of applied material formulation and to the final characteristics and performance of products.

This document is based on the template prepared in CEN/TC 155/WG21 version V.5.

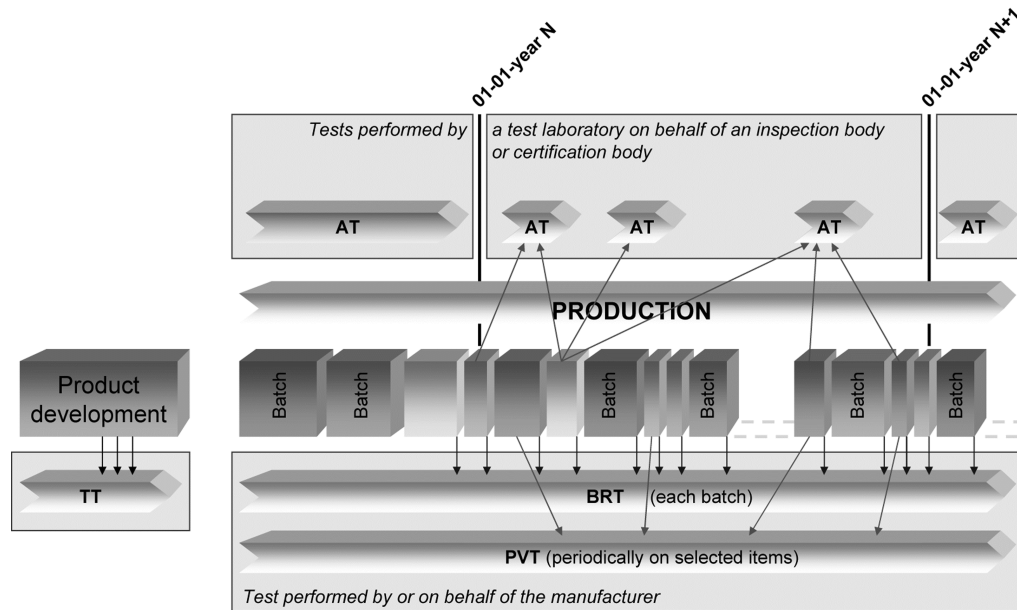
Figures 1 and 2 are intended to provide general information on the concept of testing and organization of those tests used for the purpose of the assessment of conformity. This document details the applicable characteristics to be assessed as well as the frequency and sampling of testing for each type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

A typical scheme for the assessment of conformity of formulations pipes, fittings, 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 formulations, pipes, fittings, 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**

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SIST-TS CEN/TS 1401-2:2020

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## FprCEN/TS 1401-2:2019 (E)

## 1 Scope

This document gives requirements and guidance for the assessment of conformity of formulations, products and assemblies in accordance with EN 1401-1 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.

NOTE 1 The quality management system is expected to conform to or is no less stringent than the relevant requirements to EN ISO 9001 [1].

NOTE 2 If third party certification is involved, the certification body is expected to be compliant with either EN ISO/IEC 17065 [2] or EN ISO/IEC 17021-series [3], as applicable.

NOTE 3 In order to help the reader, a basic test matrix is given in Annex A.

In conjunction with EN 1401-1, this document is applicable to piping systems made of unplasticized poly(vinyl chloride) (PVC-U) intended for non-pressure underground drainage and sewerage:

- buried in ground outside the building structure (application area code "U");
- both buried in ground within the building structure and outside the building structure (application area code "UD").

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1401-1:2019, *Plastics piping systems for non-pressure underground drainage and sewerage — Unplasticized poly(vinyl chloride) (PVC-U) — Part 1: Specifications for pipes, fittings and the system*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1401-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

### 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 compliant with EN ISO/IEC 17065 [2].



**3.2****inspection body**

body, that performs inspection

Note 1 to entry: An inspection body can be an organization or a part of an organization.

Note 2 to entry: An inspection body is preferably compliant with EN ISO/IEC 17020 [4].

**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 document, the materials and products can be subjected to type testing, batch release testing, process verification testing, audit testing and/or witness testing, as applicable.

Note 2 to entry: A testing laboratory is preferably compliant with EN ISO/IEC 17025 [5].

**3.4****quality management system**

part of a management system with regard to quality

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

[SOURCE: EN ISO 9000:2015 [6], definition 3.5.4]

**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 formulation, 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 formulation 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 materials 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, 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 or products; but they are carried out as a measure of process control.

## FprCEN/TS 1401-2:2019 (E)

**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, 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 formulations grouped by families, expressed by generic names, e.g. poly(vinyl chloride), stainless steel, brass or EPDM

**3.13****formulation**

clearly defined homogenous mixture of base polymer with additives, i.e. anti-oxidants, pigments, stabilizers and others, at a dosage level necessary for the processing and the intended use of the final product

Note 1 to entry: The term “compound” is sometime used with similar meaning as “formulation”.

Note 2 to entry: A formulation may contain virgin and/or non-virgin material.

**3.14****material batch**

clearly identified quantity of a given homogeneous formulation manufactured under uniform conditions and defined and identified by the 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 formulation conforming to the same specification

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

**3.17****sample**

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

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

**3.18****group**

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

Note 1 to entry: Similar products may have different shapes or diameter or functions (see Table 3 and Table 4).

**3.19****component**

product manufactured out of a specific formulation, brought to the market as part of another product or as a spare part

**3.20****joint**

connection between two products

**3.21****assembly**

product that can be dismantled into a set of components

**3.22****cavity**

part of the 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.

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

**5 General**

Formulations, products, joints and assemblies shall conform to the requirements given in EN 1401-1.