

SLOVENSKI STANDARD

SIST-TS CEN/TS 14632:2012

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Nadomešča:

SIST-TS CEN/TS 14632:2007

Cevni sistemi iz polimernih materialov za odvodnjavanje, kanalizacijo in oskrbo z vodo, s tlakom in brez njega - S steklenimi vlakni okrepljeni duromerni materiali (GRP), ki temeljijo na nenasičeni poliestrski smoli (UP) - Navodilo za ugotavljanje skladnosti

Plastics piping systems for drainage, sewerage and water supply, pressure and non-pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Guidance for the assessment of conformity

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Kunststoff-Rohrleitungssysteme für die Entwässerung und Wasserversorgung mit und ohne Druck - Glasfaserverstärkte duroplastische Kunststoffe (GFK) auf der Basis von ungesättigtem Polyesterharz (UP) - Empfehlungen für die Beurteilung der Konformität

Systèmes de canalisations en plastique pour les branchements, les collecteurs d'assainissement et l'alimentation en eau, avec ou sans pression - Plastiques thermodurcissables renforcés de verre (PRV) à base de résine polyester (UP) - Guide pour l'évaluation de conformité

Ta slovenski standard je istoveten z: CEN/TS 14632:2012

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23.040.20	Cevi iz polimernih materialov	Plastics pipes
83.120	Ojačani polimeri	Reinforced plastics
91.140.60	Sistemi za oskrbo z vodo	Water supply systems
91.140.80	Drenažni sistemi	Drainage systems

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Plastics piping systems for drainage, sewerage and water supply, pressure and non-pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Guidance for the assessment of conformity

Systèmes de canalisations en plastique pour les branchements, les collecteurs d'assainissement et l'alimentation en eau, avec ou sans pression - Plastiques thermodurcissables renforcés de verre (PRV) à base de résine polyester (UP) - Guide pour l'évaluation de conformité

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This Technical Specification (CEN/TS) was approved by CEN on 20 September 2011 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.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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Foreword

This document (CEN/TS 14632:2012) 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 14632:2006.

This Technical Specification can be used to support elaboration of national third party certification procedures for GRP products (glass-reinforced thermosetting plastics based on unsaturated polyester resin) to be used in piping systems for the transport of water, drainage and sewage.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, 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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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 document details the applicable characteristics to be assessed and the frequency and sampling of testing.

A typical scheme for the assessment of conformity of pipes, fittings and assemblies by manufacturers is given in Figure 1.

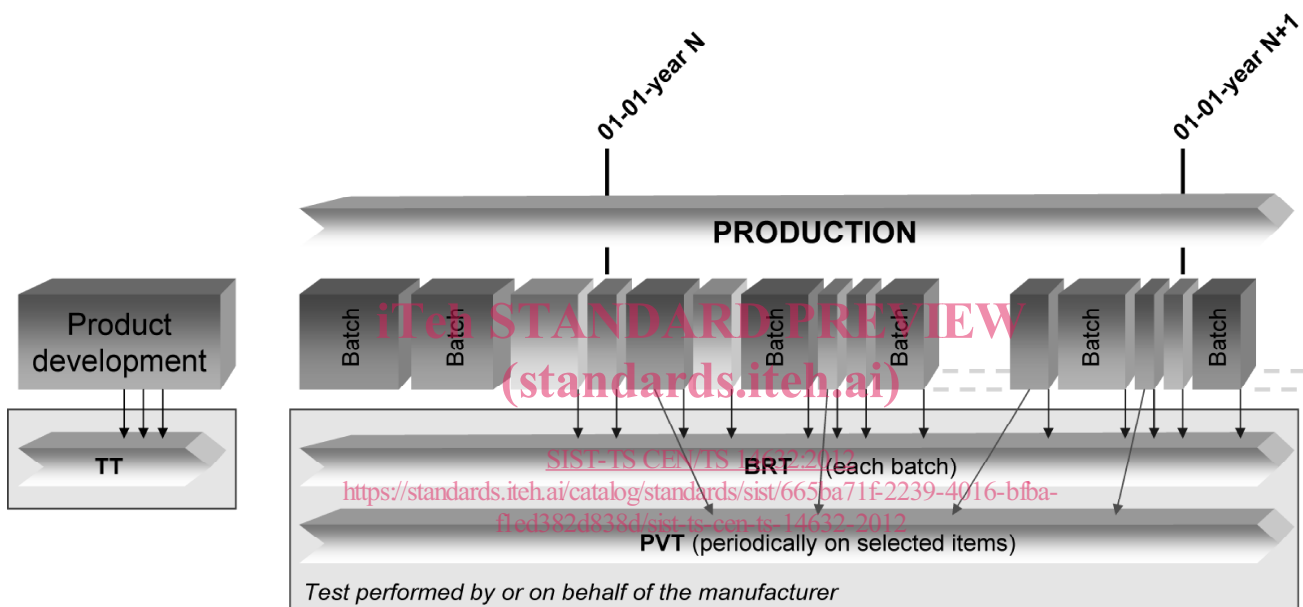


Figure 1 —Typical scheme for the assessment of conformity by a manufacturer

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

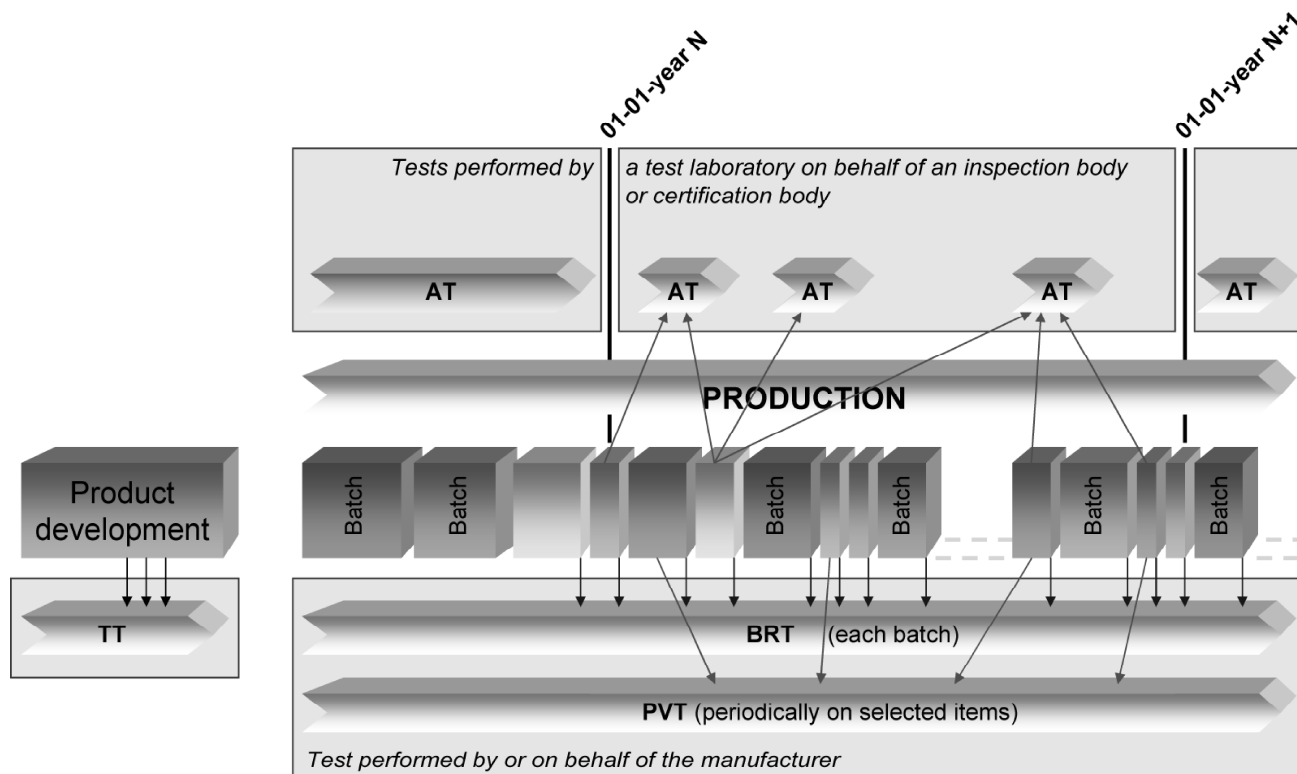


Figure 2 — Typical scheme for the assessment of conformity by a manufacturer, including a third-party certification

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CEN/TS 14632:2012 (E)**1 Scope**

This Technical Specification gives guidance on the assessment of conformity of GRP-UP (glass-reinforced thermosetting resins based on unsaturated polyesters) piping products and assemblies in accordance with EN 1796 and EN 14364 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.

This Technical Specification also gives guidance on the assessment of conformity of GRP-UP manholes and inspection chambers in accordance with prEN 15383. Pipes according to EN 14364 are used for manufacturing the shafts and chamber units. Additional statements as needed to assess the conformity of manholes and inspection chambers are given in Annex F.

NOTE 1 It is recommended that the quality management system conforms to or is no less stringent than the relevant requirements to EN ISO 9001 [3].

NOTE 2 If third-party certification is involved, it is recommended that the certification body is accredited to EN 45011 [1], EN 45012 [2] or EN ISO/IEC 17021 [5], as applicable.

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 681-1, *Elastomeric seals — Materials requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber* (standards.iteh.ai)

EN 978:1997, *Underground tanks of glass-reinforced plastics (GRP) — Determination of factor alpha and factor beta* <https://standards.iteh.ai/catalog/standards/sist/665ba71f-2239-4016-bfba-f1ed382d838d/sist-ts-cen-ts-14632-2012>

EN 1119, *Plastics piping systems — Joints for glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test methods for leaktightness and resistance to damage of non-thrust resistant flexible joints with elastomeric sealing elements*

EN 1447, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of long-term resistance to internal pressure*

EN 1796:2006+A1:2008, *Plastics piping systems for water supply with or without pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP)*

EN 14364:2006+A1:2008, *Plastics piping systems for drainage and sewerage with or without pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) — Specifications for pipes, fittings and joints*

prEN 15383:2010, *Plastics piping systems for drainage and sewerage — Glass-reinforced thermosetting plastics (GRP) based on polyester resin (UP) — Manholes and inspection chambers*

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126)*

ISO 7432, *Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test methods to prove the design of locked socket-and-spigot joints, including double-socket joints, with elastomeric seals*

ISO 7510, *Plastics piping systems — Glass-reinforced plastics (GRP) components — Determination of the amounts of constituents using the gravimetric method*

ISO 7684, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the creep factor under dry conditions*

ISO 7685:1998, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of initial specific ring stiffness*

ISO 8483, *Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test methods to prove the design of bolted flange joints*

ISO 8513, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of longitudinal tensile properties*

ISO 8521, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Test methods for the determination of the apparent initial circumferential tensile strength*

ISO 8533, *Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test methods to prove the design of cemented or wrapped joints*

ISO 10466, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Test method to prove the resistance to initial ring deflection*

ISO 10468, *Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the long-term specific ring creep stiffness under wet conditions and calculation of the wet creep factor*

ISO 10471, *Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the long-term ultimate bending strain and the long-term ultimate relative ring deflection under wet conditions*

ISO 10928, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Methods for regression analysis and their use*

ISO 10952, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Determination of the resistance to chemical attack for the inside of a section in a deflected condition*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1796:2006+A1:2008, EN 14364:2006+A1:2008 and prEN 15383:2010 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 [1].

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 [4].

3.3

testing laboratory

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

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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 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 [3].

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 products, which has to be satisfactorily completed before the batch can be released

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3.8 process verification test

PVT
test performed by or on behalf of the manufacturer on products 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

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Note 1 to entry: Such tests are not required to release batches of 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 product 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**product**

pipe, fitting, manhole or inspection chamber of a clearly identified type intended to be a part of a piping system which the manufacturer puts on the market

3.13**product batch**

clearly identified collection of products, manufactured consecutively or continuously under the same conditions, conforming to the same specification

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

3.14**lot**

clearly identifiable sub-division of a batch for inspection purposes

3.15**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.

3.16**group**

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

3.17**reduced long-term test****RLTT**

test using shorter time periods than those specified for the long-term test

Note 1 to entry: The RLTT results are to be compared to the results from the long-term test to verify that the current performance of a product conforms to the initially established long-term performance.

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	Freigabeprüfung einer Charge
IT	indirect test	essai indirect	indirekte Prüfung
PVT	process verification test	essai de vérification du procédé de fabrication	Prozessüberprüfung
RLTT	reduced long-term test	essai à long-terme écourté	verkürzte Langzeitprüfung
TT	type test	essai de type	Typprüfung
WT	witness testing	essai témoin	Prüfung unter Aufsicht

5 General

5.1 The materials, pipes, fittings, joints, manholes and inspection chambers shall conform to the requirements in EN 1796, EN 14364 and prEN 15383, as applicable.

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5.2 Pipes, fittings, joints, manholes and inspection chambers 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 of EN ISO 9001 [3].

5.3 For the effect on water quality, attention is drawn to the requirements of National regulations.

6 Testing and inspection**6.1 General****6.1.1 Records of inspection and test**

Unless otherwise specified all records shall be maintained for a minimum of ten years.

6.1.2 Indirect tests

Generally, testing shall be performed according to the test method referred to EN 1796, EN 14364 and prEN 15383, as applicable.

Indirect testing may be used for BRT and PVT characteristics as given in 6.4.1 and 6.4.2, respectively. Indirect testing shall not be applied to type testing.

The correlation or safe relationship of the indirect testing to the specified testing shall be documented in the manufacturer's quality plan. If a third party certification is involved, the IT shall be accepted by the certification body. The continuing validity of the indirect testing shall be checked at regular intervals. In cases of dispute, the test methods referred to in EN 1796, EN 14364 and prEN 15383, as applicable, shall be used for BRT or PVT, using RLTT, where applicable.

6.2 Type testing**6.2.1 General**

Type tests shall be conducted in accordance with the requirements and rules given in Annex A and, the requirements given in 6.2.2 to 6.2.4, as applicable.

6.2.2 Pipe type test group

A pipe type test group consists of a range or family of products made such that the results of the long-term type tests are applicable to all products in the group. A pipe type test group shall be made of products:

- a) manufactured by the same process;
- b) with the same material specifications;
- c) with the same pipe wall construction (i.e. the sequence of layers, layer compositions, material properties and design method for using the results of the long-term type tests in determining the pipe wall for all combinations of DN, PN and SN);
- d) tested with the same loading condition (i.e. uniaxial or biaxial load).

The quality management system shall document all process details that could influence type test performance. The quality management system shall document the complete product design method and demonstrate how the results of the type tests are used to establish product designs.