SLOVENSKI STANDARD
kSIST-TS FprCEN/TS 14632:2023

01-marec-2023

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

Kunststoff-Rohrleitungssysteme für die Entwässerung und Wasserversorgung mit und ohne Druck - Glasfaserverstärkte duroplastische Kunststoffe (GFK) auf der Basis von 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: **FprCEN/TS 14632**

ICS:

23.040.05	Cevovodi za zunanje sisteme za odpadno vodo in njihovi deli	Pipeline and its parts for external sewage systems
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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TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

FINAL DRAFT FprCEN/TS 14632

January 2023

ICS 23.040.05; 91.140.60; 91.140.80; 93.030

Will supersede CEN/TS 14632:2012

English Version

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

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

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

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Ref. No. FprCEN/TS 14632:2023 E

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European foreword

This document (FprCEN/TS 14632:2022) 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 14632:2012.

Compared with CEN/TS 14362:2012, the following changes have been made:

— In the scope references to ISO 25780 and ISO 16611 have been added and reference to EN ISO 23856 replaces reference to the previous product standards. References to appropriate accreditation standards have also been corrected. This also applies in other parts of the document;

— In Clause 2 references to several standards have been added and updated;

— In Clause 3.6 on type testing the note has been removed;

— In Table 3, 4 and 5, the term “Long-term failure pressure” has been replaced with “Resistance to internal pressure” and the term “strain corrosion” has been replaced with “chemical attack”. Also, the reference to EN 1447 has been replaced with reference to ISO 7509;

— In Clause 6.2.3.4 a sentence has been added with reference to EN 681-1 and ISO 4633;

— Clause 6.2.5 has been rewritten;

— In Table 4 reference to ISO 7510 has been added. The notes to the table have been rewritten;

— In Clause 6.4.1.1 the words “the production” have been replaced with “each production batch”;

— Table 6 has been rewritten;

— First paragraph of Clause 6.4.2 has been reworded;

— In Clause B.1 the penultimate paragraph has been deleted;

— In Clause B.2 the items e), f), and g) have been deleted;

— Two items have been added to Clause B.3.4.1;

— Clause B.5 has been reworded and item b) deleted;

— Table C.1 has been completely reworked;

— Note a in Table C.2 has been removed and the table corrected accordingly, a column has been added, and reference to α and β factors removed;

— In Clause D.2.2.3.2 the word “deflection” has been replaced with “initial ring stiffness”

— Throughout the document the words “specific ring stiffness” have been replaced with “ring stiffness”;

— Annex E has been completely rewritten;

— A new Annex G has been introduced;

— Typographical and grammatical errors have been corrected throughout the document.

This docuemnt 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.

Introduction

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. 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.

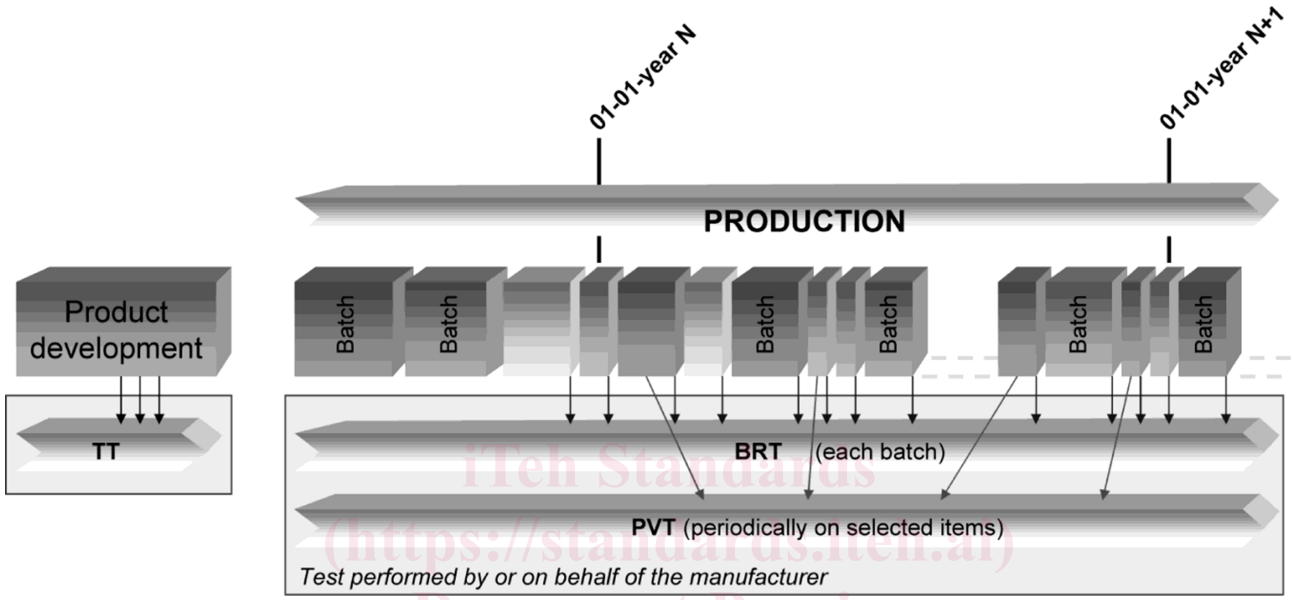

Figure 1 —Typical scheme for the assessment of conformity by a manufacturer

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.

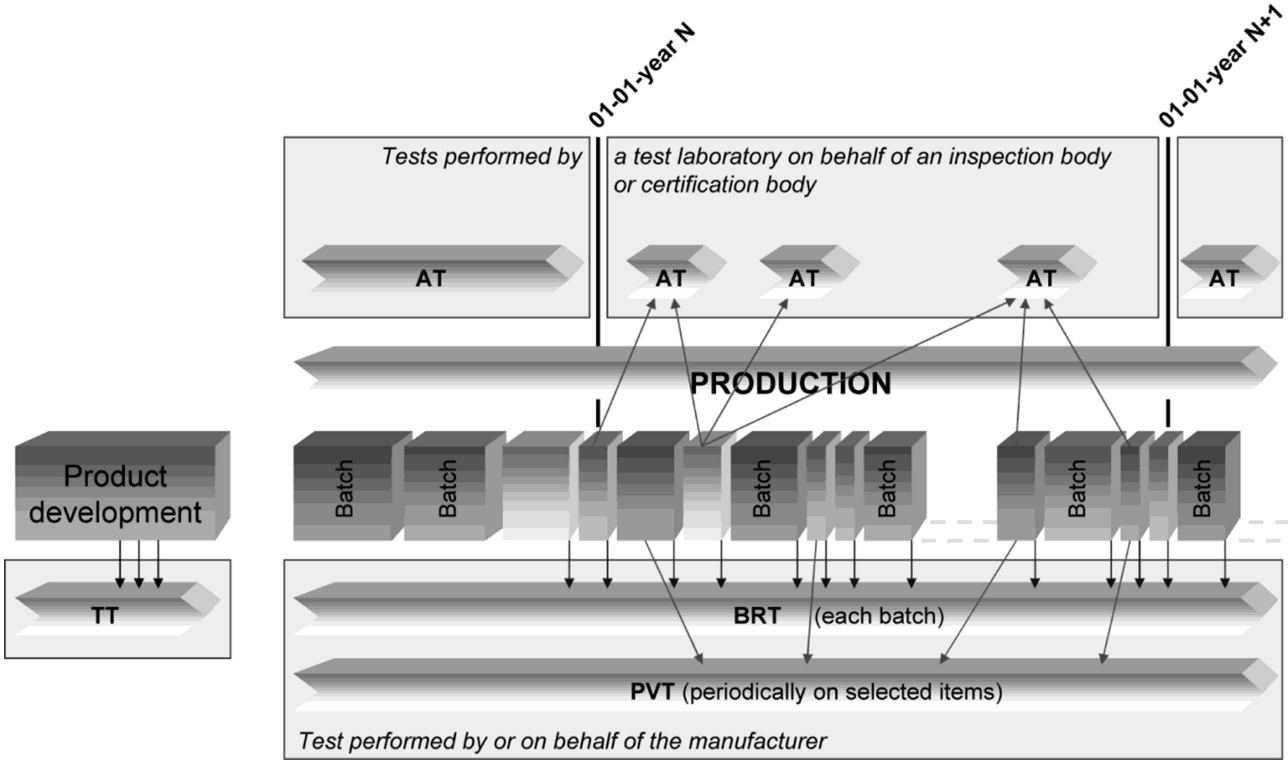

Figure 2 — Typical scheme for the assessment of conformity by a manufacturer, including a third-party certification

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

1 Scope

This document 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 ISO 23856. ISO 25780 and ISO 16611 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 document also gives guidance on the assessment of conformity of GRP-UP manholes and inspection chambers (see EN 15383 for additional information). Pipes (see EN ISO 23856) 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 For the purpose of this document, the term polyester resin (UP) also includes vinyl-ester resins (VE).

NOTE 2 If third-party certification is involved, the certification body is accredited to ISO/IEC 17065 or EN ISO/IEC 17021 [3] as applicable.

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 681-1, *Elastomeric seals - Materials requirements for pipe joint seals used in water and drainage applications - Part 1: Vulcanized rubber*

ISO 4633, *Rubber seals – Joint rings for water supply, drainage and sewerage pipelines – Specifications for materials*

ISO 7509, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of time to failure under sustained internal pressure*

EN 1990, *Eurocode - Basis of structural design*

EN 15383, *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 3126:2005)*

EN ISO 23856, *Plastics piping systems for pressure and non-pressure water supply, drainage or sewerage - Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin (ISO 23856:2021)*

ISO 25780, *Plastics piping systems for pressure and non-pressure water supply, irrigation, drainage or sewerage — Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin — Pipes with flexible joints intended to be installed using jacking techniques*

ISO 16611, *Plastics piping systems for drainage and sewerage without pressure — Non-circular pipes and joints made of glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resins (UP) — Dimensions, requirements and tests*

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*

ISO 7685, *Glass-reinforced thermosetting plastics (GRP) pipes — Determination of initial ring stiffness*

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

ISO 8521, *Glass-reinforced thermosetting plastic (GRP) pipes — Test methods for the determination of the initial circumferential tensile wall strength*

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

ISO 8639, *Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test methods for leak tightness and proof of structural design of flexible joints*

ISO 10466, *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 creep properties under wet or dry conditions*

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, *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*

ISO 18851, *Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test method to prove the structural design of fittings*

ISO/TS 20656-1, *Plastics piping systems — General rules for structural design of glass-reinforced thermosetting plastics (GRP) pipes — Part 1: Buried pipes*

ISO 178, *Plastics — Determination of flexural properties*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 23856, ISO 25780, ISO 16611 and EN 15383 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 ISO/IEC 17065 [5].

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 ISO/IEC 17020 [2].

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 witness testing, as applicable.

Note 2 to entry: A testing laboratory is preferably accredited to ISO/IEC 17025 [4].

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 [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

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