PD CEN/TS 14632:2023

BSI Standards Publication

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

National foreword

This Published Document is the UK implementation of CEN/TS 14632:2023. It supersedes PD CEN/TS 14632:2012, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee PRI/88/2, Plastics piping for pressure applications.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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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

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 Technical Specification (CEN/TS) was approved by CEN on 7 May 2023 for provisional application.

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European foreword

This document (CEN/TS 14632:2023) 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 shall not be held responsible for identifying any or all such patent rights.

This document supersedes 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 document 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.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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.

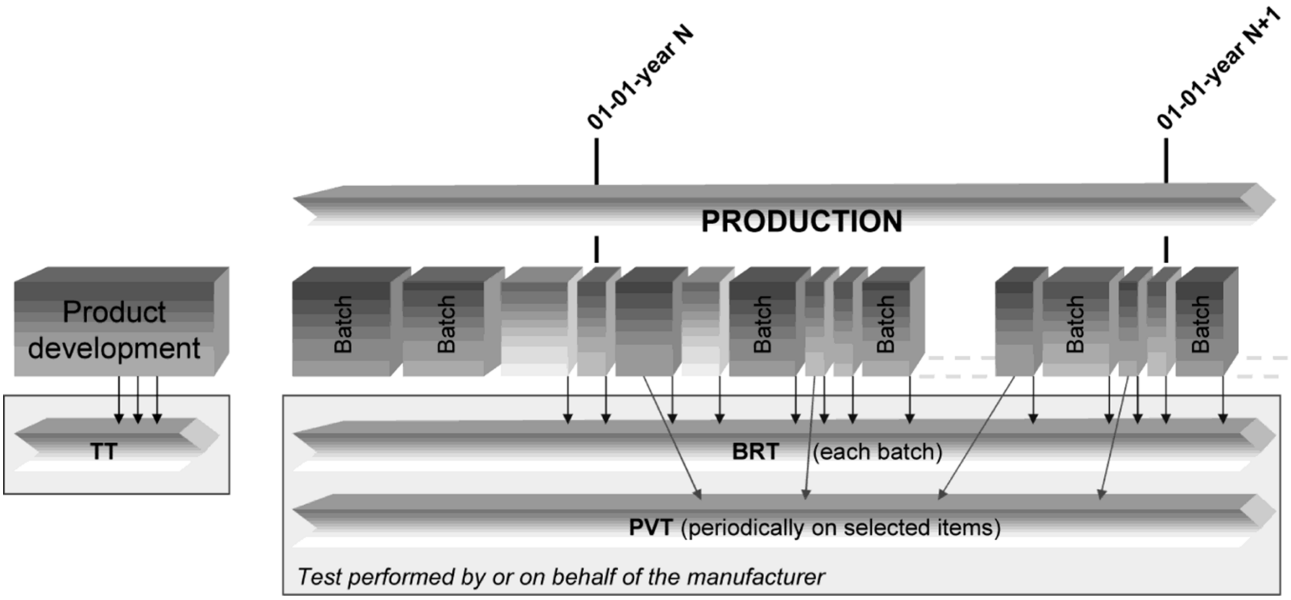

Figure 1 —Typical scheme for the assessment of conformity by a manufacturer

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.

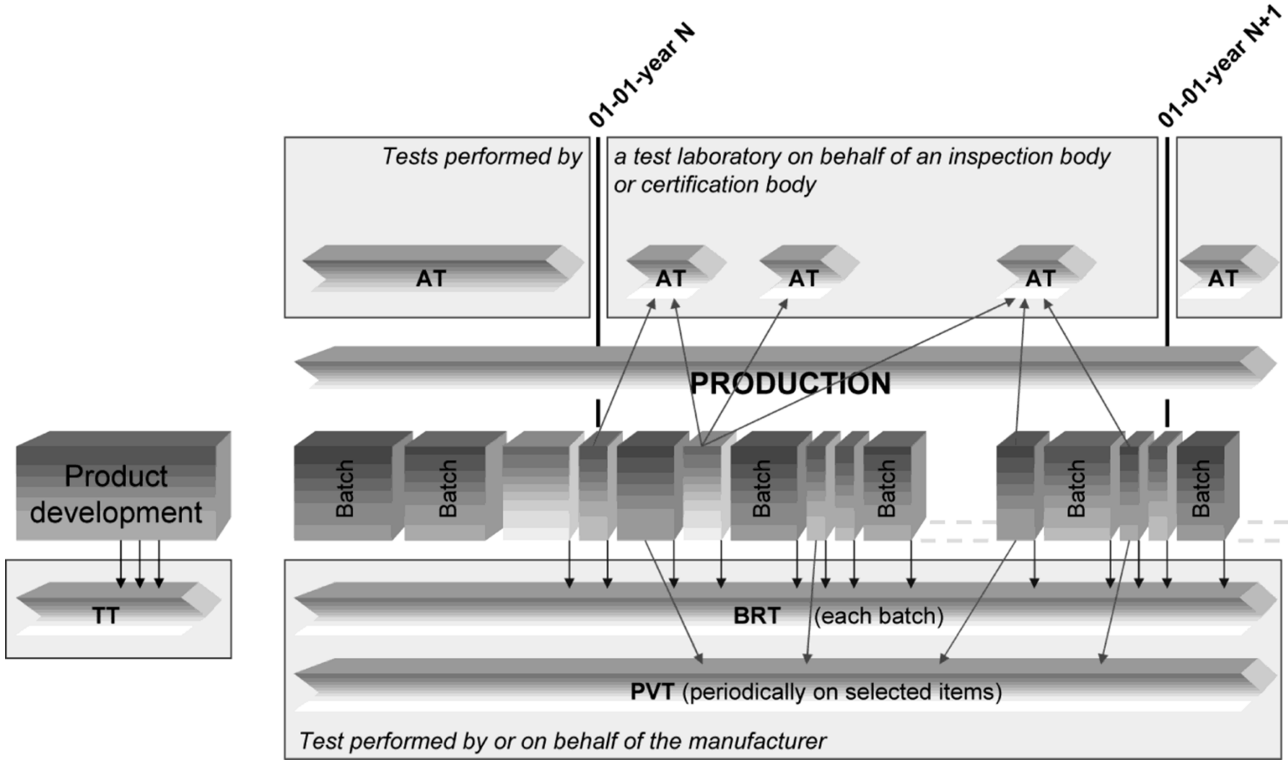

Figure 2 — Typical scheme for the assessment of conformity by a manufacturer, including a third-party certification

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 and geotechnical 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)*

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)*

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*