SLOVENSKI STANDARD
SIST EN 1115-5:1997

01-februar-1997

Cevni sistemi iz polimernih materialov, položeni v zemljo, za odpadno vodo in kanalizacijo pod tlakom - S steklenimi vlakni ojačeni duromerni materiali (GRP), ki temeljijo na nenasičenih poliestrskih smolah (UP) - 5. del: Potrditev ustreznosti spojev

Plastics piping systems for underground drainage and sewerage under pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Part 5: Fitness for purpose of the joints

Kunststoff-Rohrleitungssysteme für erdverlegte Druckentwässerung und Druckabwasserleitungen - Glasfaserverstärkte duroplastische Kunststoffe (GFK) auf Basis von ungesättigtem Polyesterharz (UP) - Teil 5: Gebrauchstauglichkeit der Verbindungen

Systemes de canalisations en plastique pour l'évacuation et l'assainissement enterrés sous pression - Plastiques thermodurcissables renforcés de verre (PRV) a base de résine polyester non saturé (UP) - Partie 5: Aptitude a l'emploi des assemblages

Ta slovenski standard je istoveten z: **EN 1115-5:1996**

ICS:

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

SIST EN 1115-5:1997 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 1115-5

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ICS 23.040.20; 23.040.45

Descriptors: sanitation, water removal, buried pipes, pressure pipes, plastic tubes, reinforced plastics, glass reinforced plastics, thermosetting resins, polyester resins, operating requirements

English version

Plastics piping systems for underground drainage and sewerage under pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Part 5: Fitness for purpose of the joints

Systèmes de canalisations en plastique pour l'évacuation et l'assainissement enterrés sous pression - Plastiques thermodurcissables renforcés de verre (PRV) à base de résine polyester non saturé (UP) - Partie 5: Aptitude à l'emploi des assemblages

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This European Standard was approved by CEN on 1996-01-14. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Ref. No. EN 1115-5:1996 E

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 1996, and conflicting national standards shall be withdrawn at the latest by December 1996.

This standard is part of a System Standard for plastics piping systems, which is a standard for glass-reinforced polyester plastics piping systems for underground drainage and sewerage under pressure.

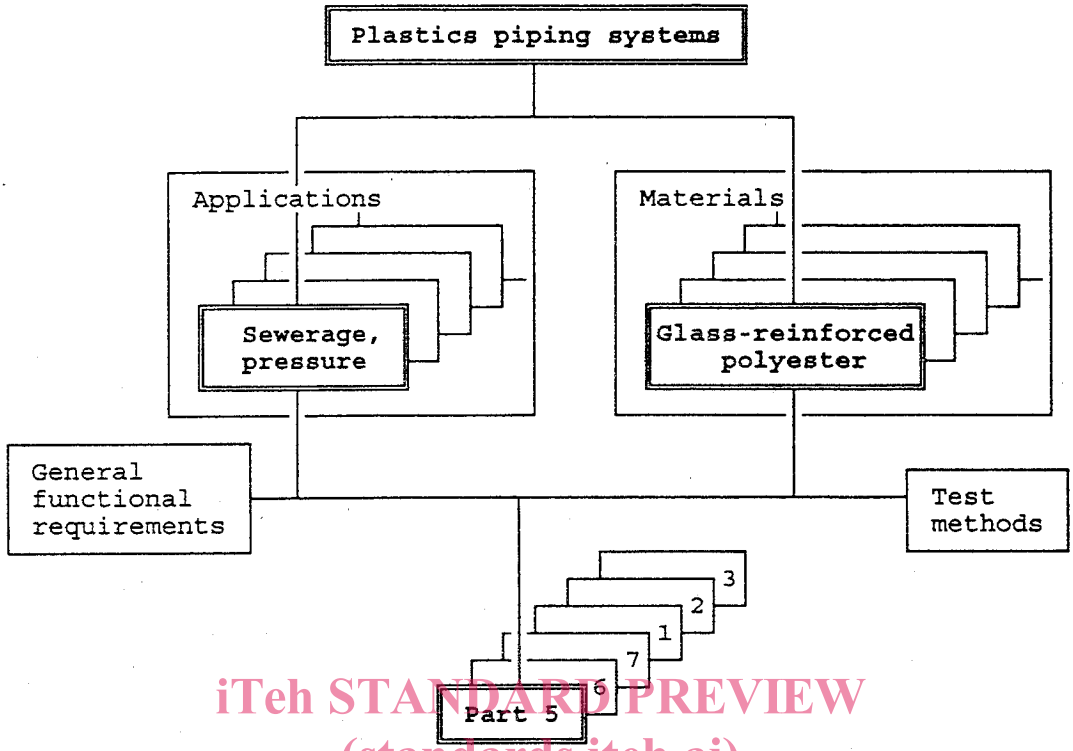
System Standards are based on the results of the work being undertaken in ISO/TC 138 "Plastics pipes, fittings and valves for the transport of fluids", which is a Technical Committee of the International Organization for Standardization (ISO). They are supported by separate standards on test methods to which references are made throughout the System Standard.

System Standards are consistant with standards on general functional requirements and on practices for installation.

EN 1115 consists of the following parts, under the general title *Plastics piping systems for underground drainage and sewerage under pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP)*

- *Part 1: General*
- *Part 2: Pipes with flexible, reduced-articulation or rigid joints*
- *Part 3: Fittings*
- *Part 5: Fitness for purpose of the joints* (this standard)
- *Part 6: Practices for installation*
- *Part 7: Assessment of conformity*

The following diagram indicates the place of this standard within the CEN framework of plastics piping systems:



At the date of publication of this standard, System Standards for piping systems of other plastics materials used for the same application are the following:

NOTE: All listed System Standards are under preparation.

EN 1456	*Plastics piping systems for underground drainage and sewerage under pressure - Unplasticized poly(vinyl chloride) (PVC-U)*
EN [155wi017]	*Plastics piping systems for underground drainage and sewerage under pressure - Polyethylene (PE)*
EN [155wi136]	*Plastics piping systems for drainage and sewerage with or without pressure - Glass-reinforced thermosetting plastics (GRP) based on epoxy resin (EP)*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

The System Standard, of which this is Part 5, specifies the properties of the piping system and its components made from glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) intended to be used for underground drainage and sewerage under pressure. The System Standard includes practices for installation and procedures for assessment of conformity.

In a pipework system, pipes and fittings of different nominal pressure and stiffness ratings may be used together.

A joint may be made between pipes and/or fittings such that its performance is equal to or better than the requirements of the pipeline.

This Part of EN 1115 which covers the characteristics of fitness for purpose of the piping system, is intended to be used by amongst others, end-users, authorities, design engineers, testing and certification institutes and manufacturers.

1 Scope

This Part of EN 1115 specifies the characteristics of the fitness for purpose of glass-reinforced thermosetting plastics based on unsaturated polyester resin (GRP–UP) piping systems intended to be used in underground drainage and sewerage under pressure. It also specifies the relevant test parameters for the test methods referred to in this standard.

It is applicable to the joints to be used in GRP–UP piping systems to be used for the conveyance of surface water or sewerage under pressure below ground, outside buildings, at temperatures up to 50 °C.

NOTE: Piping systems conforming to EN 1115 can also be used for above-ground applications provided the influence of the environment and the supports is considered in the design of the pipes and joints.

This standard specifies initial performance requirements for the following joints, for use with GRP–UP pipes for buried pipelines or pipework systems, as a function of the declared nominal pressure rating of the pipeline or system:

a) flexible socket-and-spigot or mechanical joint;

b) reduced-articulation socket-and-spigot or mechanical joint;

c) rigid locked socket-and-spigot joint;

d) cemented socket-and-spigot or butt joint;

e) bolted flange and threaded joint.

This standard is applicable to joints which are or are not intended to be exposed to end thrust loads in service. It covers requirements to prove the design of the joint.

Tests referred to in this standard are suitable for evaluating joints intended for use at temperatures up to 50 °C and may be applicable for joints for use at higher temperatures.

2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision.

For undated references the latest edition of the publication referred to applies.

EN 705	*Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Methods for regression analyses and their use*
prEN 1115-1	*Plastics piping systems for underground drainage and sewerage under pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Part 1: General*
prEN 1115-2	*Plastics piping systems for underground drainage and sewerage under pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Part 2: Pipes with flexible, reduced-articulation or rigid joints*
EN 1115-3	*Plastics piping systems for underground drainage and sewerage under pressure - Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) - Part 3: Fittings*
EN 1119	*Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test methods for leaktightness and resistance to damage of flexible and reduced-articulation joints*
prEN 1448	*Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test method to prove the design of rigid locked socket-and-spigot joints with elastomeric seals*
prEN 1449	*Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test method to prove the design of a cemented socket-and-spigot, including double-socket, joints*
prEN 1450	*Plastics piping systems - Glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test method to prove the design of bolted flange joints*

3 Definitions

For the purposes of this standard, the definitions given in prEN 1115-1 apply.

4 Interchangeability

NOTE: Interchangeability between products from different suppliers can only be achieved with appropriate regard to the components and joint dimensions.

5 Joints

5.1 Dimensions

All dimensions of the joints tested, which may influence the performance of the system, shall be recorded.

5.2 Flexible and reduced-articulation joints with elastomeric sealing components

5.2.1 General

Test performance requirements under hydrostatic pressure shall conform to 5.2.2 and 5.2.7 with reference to methods of test given in EN 1119, as appropriate, in conjunction with specific conditions dependent upon the nominal pressure, PN, for the pipeline system in which the particular type of joint is to be used. Specific values for PN are given in prEN 1115-1.

5.2.2 Properties of the joint

5.2.2.1 General

A joint made between pipes conforming to prEN 1115-2 and/or fittings conforming to EN 1115-3 shall be designed so that its performance is equal to or better than the requirements for the pipeline, but not necessarily of the components being joined.

The properties given in 5.2.2.2 and 5.2.2.3 shall be declared by the manufacturer for a particular design of joint.

5.2.2.2 Draw

The joint shall be capable of conforming to 5.2.4 when a draw of not less than 0,3 % of the effective length of the longest pipe with which the joint is intended to be used is applied.