

Plastics piping systems for underground drainage and sewerage under pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) —

Part 1: General

The European Standard EN 1115-1:1997 has the status of a British Standard

ICS 23.040.01

National foreword

This British Standard is the official English language version of EN 1115-1:1997.

The UK participation in its preparation was entrusted by Technical Committee PRI/88, Plastic piping systems, to Subcommittee PRI/88/2, Pressure, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Additional information

The UK committee involved in the preparation of BS EN 1115-1 has raised concerns about the publication of this standard. The UK opposition is largely due to the lack of consideration given to the fundamental production specifications, which has led the committee to question the usability of this standard.

Cross-references

The British Standards which implement international or European publications may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

This British Standard, having been prepared under the direction of the Sector Committee for Materials and Chemicals, was published under the authority of the Standards Committee and comes into effect on 15 June 2001

Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 20, an inside back cover and a back cover.

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English version

Plastics piping systems for underground drainage and sewerage
under pressure — Glass-reinforced thermosetting plastics (GRP)
based on unsaturated polyester resin (UP) — Part 1: General

Systèmes de canalisations en plastique pour l'évacuation et
l'assainissement enterrés sous pression — Plastiques
thermodurcissables renforcés de verre (PRV) à base de
résine de polyester non saturé (UP) — Partie 1: Généralités

Kunststoff-Rohrleitungssysteme für erdverlegte
Druckentwässerung und Druckabwasserleitungen —
Glasfaserverstärkte duroplastische Kunststoffe (GFK) auf
der Basis von ungesättigtem Polyesterharz (UP) —
Teil 1: Allgemeines

This European Standard was approved by CEN on 16 August 1997.

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.

This European Standard exists 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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

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 standard is a 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.

Annex A, which is informative, describes the primary functions of the inner, structural and outer layers of the pipe wall.

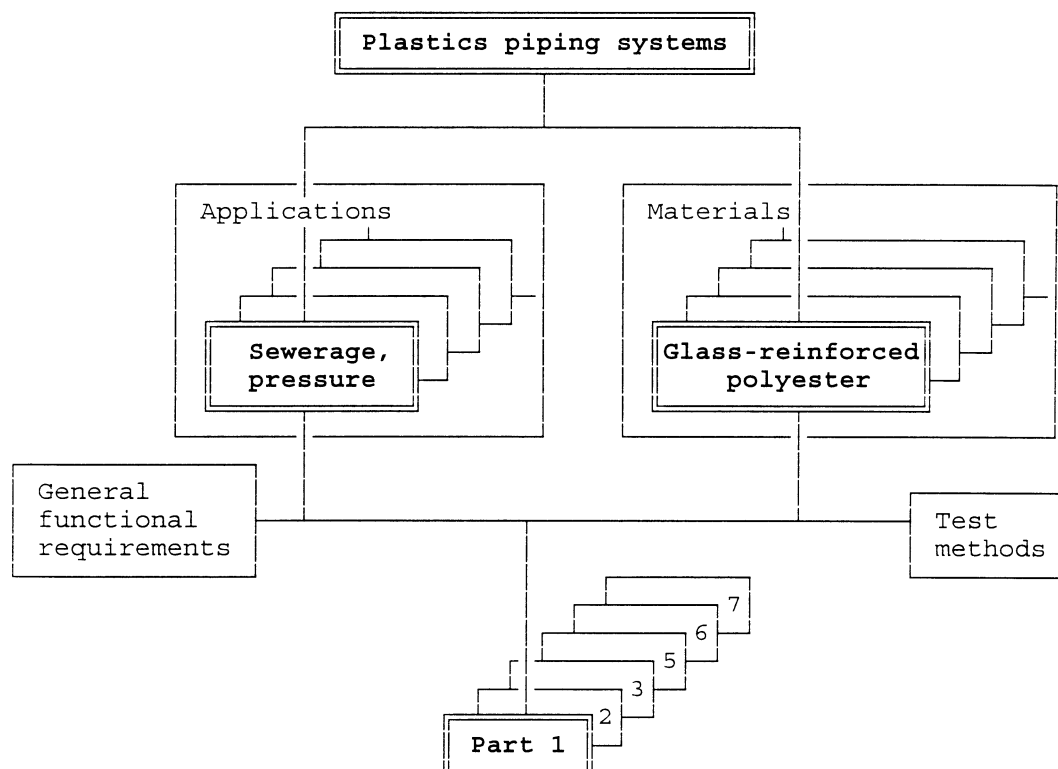
Annex B, which is informative, gives a bibliography which identifies the documents upon which this System Standard is based.

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

The following diagram indicates the place of this standard within the CEN framework for 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 as follows:

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

NOTE: All listed System Standards are under preparation.

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 June 1998, and conflicting national standards shall be withdrawn at the latest by June 1998.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, 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 1, specifies the properties of a piping system and its components when 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 guidance on the assessment of conformity.

1 Scope

This part of EN 1115 specifies the general aspects of glass-reinforced thermosetting plastics based on unsaturated polyester resin (GRP-UP) piping systems in the field of underground drainage and sewerage under pressure.

In conjunction with parts 2, 3, 5, 6 and 7 of EN 1115 it is applicable to GRP-UP piping systems with flexible, reduced-articulation or rigid joints primarily intended for use in buried installations.

NOTE 1: 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.

It is applicable to pipes and fittings, as well as their connection and the method of jointing to components of other plastics and non-plastics materials, when intended to be used for the conveyance of surface water or sewage under pressure, at temperatures up to 50 °C (subject to the limitations contained in clause 7).

This standard is applicable to pipes and fittings of nominal sizes from DN 100 to DN 3 000.

This standard covers a range of nominal sizes, nominal stiffnesses and nominal pressures.

NOTE 2: It is the responsibility of the purchaser or specifier to make the appropriate selections from these aspects, taking into account their particular requirements and any relevant national regulations and installation practices or codes.

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 637	<i>Plastics piping systems — Glass-reinforced plastics components — Determination of the amounts of constituents using the gravimetric method.</i>
prEN 681-1	<i>Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Part 1: Vulcanized rubber.</i>
prEN 681-2	<i>Elastomeric seals — Material requirements for pipe joint seals used in water and drainage applications — Part 2: Thermoplastic elastomers.</i>
prEN 681-3	<i>Elastomeric seals — Material requirements for pipe joint seals used in drainage and sewerage applications — Part 3: Cellular materials of vulcanized rubber.</i>
prEN 681-4	<i>Elastomeric seals — Material requirements for pipe joint seals used in drainage and sewerage applications — Part 4: Cast polyurethane sealing elements.</i>
prEN 1046	<i>Plastics piping and ducting systems — Systems outside building structures for the conveyance of water or sewage — Practices for installation above and below ground.</i>
prEN 1115-2	<i>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.</i>
EN 1115-3	<i>Plastics piping systems for underground drainage and sewerage under pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) — Part 3: Fittings.</i>
EN 1115-5	<i>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.</i>
prEN 1115-6	<i>Plastics piping systems for underground drainage and sewerage under pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) — Part 6: Practices for installation.</i>
prEN 1115-7	<i>Plastics piping systems for underground drainage and sewerage under pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) — Part 7: Assessment of conformity.</i>
EN 1225	<i>Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of the creep factor under wet conditions and calculation of the long-term specific ring stiffness.</i>
EN 1228	<i>Plastics piping systems — Glass-reinforced thermosetting plastics (GRP) pipes — Determination of initial specific ring stiffness.</i>
EN ISO 75-2:1996	<i>Plastics — Determination of temperature of deflection under load — Part 2: Plastics and ebonite (ISO 75-2:1993).</i>
ISO 2078:1993	<i>Textile glass-yarns — Designation.</i>