TECHNICAL SPECIFICATION
SPÉCIFICATION TECHNIQUE
TECHNISCHE SPEZIFIKATION

CEN/TS 14578

September 2003

ICS 23.040.01, 91.140.80, 93.030

Supersedes EN 1636-6:1997

English version

Plastics piping systems for water supply or drainage and sewerage – Glass-reinforced thermosetting plastics (GPR) based on unsaturated polyester resin (UP) – Recommended practice for installation

Systèmes de canalisations plastiques pour l'adduction d'eau et l'assainissement – Plastiques thermodurcissables renforcés de verre (PRV) à base de résine de polyester non saturé (UP) – Pratique recommandée pour la pose

Kunststoff-Rohrleitungssysteme für den Wasserversorgung mit oder ohne Druck – Glasfaserverstärkten duroplastischen Kunstoffe (GFK) auf der basis von ungesättigtem Polyesterharz (UP) – Empfohlenes Verfahren zur Verlegung

This Technical Specification (CEN/TS) was approved by CEN on 24 March 2003 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. 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.

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

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. CEN/TS 14578:2003 E

Contents

page

Foreword

This document (CEN/TS 14578:2003) 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 supersedes EN 1636-6:1997 [1].

It is also the result of a merging of the final draft prEN 1115-6:1997 [2] and the draft European standard prEN 1796-6:1995 [3].

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

Introduction

System Standards prEN 1796 [4] and prEN 14364 [5] specify 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 pressure and non-pressure water or sewerage applications. A System Standard includes specifications for pipes, fittings and joints and makes reference to supporting standards covering test methods, recommended practices for installation (this Technical Specification) and procedures for assessment of conformity.

The committee is preparing a standard to cover matters such as design procedures, determination of long-term safety factors based on a semi-probabilistic approach, surge allowance and allowable negative pressures for buried GRP pipe applications. Reference to this standard will be included in the document when available.

This supporting standard, which covers practices for installation, is intended to be used in conjunction with ENV 1046 by, amongst others, end-users, authorities, design engineers, testing and certification institutes and manufacturers.

In the event of ENV 1046 being withdrawn in the future, the relevant parts of ENV 1046 will be incorporated in this standard as an addendum, so that the appropriate requirements, which were implemented in ENV 1046, remain available and applicable to System Standards for applications using GRP-UP pipes and fittings.

In this standard, much of the guidance is expressed as requirements, e.g. by use of "shall" or by instructions in the imperative. It is strongly recommended that these be followed whenever applicable.

Other guidance is presented for consideration as a matter of judgement in each case, e.g. by use of "should".

1 Scope

This Technical Specification (CEN/TS) specifies recommended practices for installing piping systems made of glass-reinforced thermosetting plastics based on unsaturated polyester resin (GRP-UP), intended to be used for pressure or non-pressure water or sewerage applications. It is applicable to GRP-UP piping systems of nominal sizes from DN 100 to DN 3000 which are intended to be used for the conveyance of liquids at temperatures up to 50 °C and at pressures of 0,5 bar and greater.

NOTE 1 Piping systems conforming to prEN 1796 [4] or prEN 14364 [5] 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.

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 Technical Specification 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 Technical Specification only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ENV 1046:2001, *Plastics piping and ducting systems — Systems outside building structures for the conveyance of water or sewage — Practices for installation above and below ground.*

3 Terms and definitions

For the purposes of this Technical Specification the terms and definitions given in ENV 1046:2001 apply.

4 Procedures

4.1 General

Pipes and fittings covered by prEN 1796 [4] or prEN 14364 [5] shall be installed in accordance with ENV 1046 taking into account the following information and guidance. In conditions not covered thereby the engineer shall make his own recommendations.

Attention is drawn to the limitations that may apply to negative pressure in service, in particular if the pipe zone backfill material is removed, and to mechanical compaction requirements during installation for pipe stiffness up to and including SN 5000 (see also ENV 1046).

4.2 Special conditions for pipes having a nominal stiffness less than SN 1250

Pipes having a nominal stiffness less than SN 1250 are not intended for laying directly in the ground. However, whenever they are installed in the ground they shall be encased in concrete.

5 Specific information and recommendations

5.1 General

NOTE ENV 1046 requires the information given in 5.2 to 5.12 to be provided in this standard.