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BS EN 1796:2013



BSI Standards Publication

Plastics piping systems for water supply with or without pressure — Glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP)

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This British Standard is the UK implementation of EN 1796:2013. It supersedes BS EN 1796:2006+A1:2008 which is withdrawn.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 secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2013. Published by BSI Standards Limited 2013

ISBN 978 0 580 75372 5

ICS 23.040.20; 23.040.45

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2013.

Amendments issued since publication

Date	Text affected
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EUROPÄISCHE NORM

February 2013

ICS 23.040.01

Supersedes EN 1796:2006+A1:2008

English Version

Plastics piping systems for water supply with or without pressure
- Glass-reinforced thermosetting plastics (GRP) based on
unsaturated polyester resin (UP)

Systèmes de canalisations en plastiques pour l'alimentation
en eau avec ou sans pression - Plastiques
thermodurcissables renforcés de verre (PRV) à base de
résine polyester non saturé (UP)

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

This European Standard was approved by CEN on 14 December 2012.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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Foreword

This document (EN 1796:2013) has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the secretariat of which is held by NEN.

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 August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1796:2006+A1:2008.

The following list is a list of significant technical changes that have been made since the previous edition:

- changes to many test method references to the more up to date ISO methods;
- extension of the diameter range to 4 000 mm;
- completion of the axial strength tables for all PN classes;
- restructure of the fittings section to be more practical;
- update of the joint testing criteria.

This European Standard is a system standard for plastics piping systems using glass-reinforced thermosetting plastics based on polyester resin (GRP-UP), for water supply with or without 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 consistent with standards on general functional requirements.

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This system standard 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 water supply with or without pressure.

The working group responsible for this European Standard is currently working on a test method and requirements for assessing resistance to impact damage. When this work is completed, it may result in additional requirements being incorporated into this European Standard.

This European Standard was prepared recognising the guidelines of EN 476 [1].

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1 Scope

This European Standard specifies the required 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 water supply (drinking or raw) with or without pressure. In a pipework system, pipes and fittings of different nominal pressure and stiffness ratings may be used together.

It is the responsibility of the purchaser or specifier to make the appropriate selections taking into account their particular requirements and any relevant national regulations and installation practices or codes.

This European Standard is applicable to GRP-UP, with flexible or rigid joints (see 3.33 and 3.34), primarily intended for use in buried installations.

NOTE Piping systems conforming to this European Standard can also be used for non-buried applications provided that the influence of the environment, e.g. from UV-radiation, and the supports are considered in the design of the pipes, fittings and joints.

It is applicable to pipes, fittings and their joints of nominal sizes from DN 100 to DN 4000, which are intended to be used for the conveyance of water at temperatures up to 50 °C, with or without pressure.

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

This European Standard is applicable to fittings made using any of the following techniques:

- a) fabricated from straight pipe;
- b) moulded by:
 - 1) filament winding;
 - 2) tape winding;
 - 3) contact moulding;
 - 4) hot or cold press moulding.

This European Standard is applicable to the joints to be used in GRP-UP piping systems to be used for the conveyance of water, both buried and non-buried. It is applicable to joints, which are or are not intended to be resistant to axial loading. It covers requirements to prove the design of the joint. It specifies type test performance requirements for the following joints as a function of the declared nominal pressure rating of the pipeline or system:

- c) socket-and-spigot (either integral with pipe or sleeve coupling) or mechanical joint;
- d) locked socket-and-spigot joint;
- e) cemented or wrapped joint;
- f) bolted flange joint.

Recommended practices for the installation of buried pipes made in accordance with this standard is addressed in CEN/TS 14578. Guidelines for the structural analysis of buried GRP-UP pipelines are addressed in CEN/TS 14807.

Guidance for the Assessment of Conformity of products made in accordance with this standard is addressed in CEN/TS 14632.