

## **Petroleum and natural gas industries - Glass-reinforced plastics (GRP) piping - Part 2: Qualification and manufacture**

Petroleum and natural gas industries - Glass-  
reinforced plastics (GRP) piping - Part 2:  
Qualification and manufacture

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN ISO 14692-2:2003 sisaldab Euroopa standardi EN ISO 14692-2:2002 + AC:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 15.04.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN ISO 14692-2:2003 consists of the English text of the European standard EN ISO 14692-2:2002 + AC:2006.</p> <p>This document is endorsed on 15.04.2003 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b> This part of ISO 14692 gives requirements for the qualification and manufacture of GRP piping and fittings in order to enable the purchase of GRP components with known and consistent properties from any source</p>	<p><b>Scope:</b> This part of ISO 14692 gives requirements for the qualification and manufacture of GRP piping and fittings in order to enable the purchase of GRP components with known and consistent properties from any source</p>
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**ICS** 75.200, 83.140.30

**Võtmesõnad:** acceptance testing, design, glass-fibre reinforced plastics, industries, installation, materials, natural gas, natural gas industries, offshore construction works, oil industries, petroleum, pipe laying, pipelayers, pipelines, production, quality assurance, testing

ICS 75.200; 83.140.30

English version

**Petroleum and natural gas industries - Glass-reinforced plastics  
(GRP) piping - Part 2: Qualification and manufacture (ISO  
14692-2:2002)**

Industries du pétrole et du gaz naturel - Canalisations en  
plastique renforcé de verre (PRV) - Partie 2: Conformité  
aux exigences de performance et fabrication (ISO 14692-  
2:2002)

This European Standard was approved by CEN on 2 December 2002.

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

## Foreword

This document (EN ISO 14692-2:2002) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum and natural gas industries" in collaboration with Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum and natural gas industries", the secretariat of which is held by AFNOR.

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 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

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**NOTE FROM CMC** The foreword is susceptible to be amended on reception of the German language version. The confirmed or amended foreword, and when appropriate, the normative annex ZA for the references to international publications with their relevant European publications will be circulated with the German version.

## Endorsement notice

The text of ISO 14692-2:2002 has been approved by CEN as EN ISO 14692-2:2002 without any modifications.

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**Petroleum and natural gas industries —  
Glass-reinforced plastics (GRP) piping —**

**Part 2:  
Qualification and manufacture**

*Industries du pétrole et du gaz naturel — Canalisations en plastique  
renforcé de verre (PRV) —*

*Partie 2: Conformité aux exigences de performance et fabrication*



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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 14692-2 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 6, *Processing equipment and systems*.

ISO 14692 consists of the following parts, under the general title *Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping*:

- *Part 1: Vocabulary, symbols, applications and materials*
- *Part 2: Qualification and manufacture*
- *Part 3: System design*
- *Part 4: Fabrication, installation and operation*

## Introduction

The objective of this part of ISO 14692 is to enable the purchase of GRP components with known and consistent properties from any source. Main users of the document will be the principal and the manufacturer, certifying authorities and government agencies.

# Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping —

## Part 2: Qualification and manufacture

### 1 Scope

This part of ISO 14692 gives requirements for the qualification and manufacture of GRP piping and fittings in order to enable the purchase of GRP components with known and consistent properties from any source.

It is applicable to qualification procedures, preferred dimensions, quality programmes, component marking and documentation.

This part of ISO 14692 is intended to be read in conjunction with ISO 14692-1.

### 2 Normative references

The following referenced documents are indispensable for the application 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.

ISO 834-1, *Fire-resistance tests — Elements of building construction — Part 1: General requirements*

ISO 1172, *Textile-glass-reinforced plastics — Prepregs, moulding compounds and laminates — Determination of the textile-glass and mineral-filler content — Calcination methods*

ISO 4901, *Reinforced plastics based on unsaturated polyester resin — Determination of residual styrene monomer content*

ISO 6721-1, *Plastics — Determination of dynamic mechanical properties — Part 1: General principles*

ISO 7822:1990, *Textile glass reinforced plastics — Determination of void content — Loss on ignition, mechanical disintegration and statistical counting methods*

ISO 10467:—<sup>1)</sup>, *Plastics piping systems for pressure and non-pressure drainage and sewerage — Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin*

ISO 10639:—<sup>1)</sup>, *Plastics piping systems for water supply, with or without pressure — Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin*

ISO 11357-2, *Plastics — Differential scanning calorimetry (DSC) — Part 2: Determination of glass transition temperature*

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1) To be published.

ISO 14692-1:2002, *Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping — Part 1: Vocabulary, symbols, applications and materials*

ASTM C177, *Standard test method for steady-state heat flux measurements and thermal transmission properties by means of the guarded-hot-plate apparatus*

ASTM D257, *Standard test methods for DC resistance or conductance of insulating materials*

ASTM D696, *Standard test method for coefficient of linear thermal expansion of plastics between –30 °C and 30 °C with a vitreous silica dilatometer*

ASTM D1598, *Standard test method for time-to-failure of plastic pipe under constant internal pressure*

ASTM D1599, *Standard test method for resistance to short-time hydraulic failure pressure of plastic pipe, tubing, and fittings*

ASTM D2105, *Standard test method for longitudinal tensile properties of “fiberglass” (glass-fiber-reinforced thermosetting-resin) pipe and tube*

ASTM D2143, *Standard test method for cyclic pressure strength of reinforced, thermosetting plastic pipe*

ASTM D2412, *Standard test method for determination of external loading characteristics of plastic pipe by parallel-plate loading*

ASTM D2583, *Standard test method for indentation hardness of rigid plastics by means of a barcol impressor*

ASTM D2925, *Standard test method for beam deflection of “fiberglass” (glass-fiber-reinforced thermosetting resin) pipe under full bore flow*

ASTM D2992, *Standard practice for obtaining hydrostatic or pressure design basis for “fiberglass” (glass-fiber-reinforced thermosetting-resin) pipe and fittings*

ASTM D3567, *Standard practice for determining dimensions of “fiberglass” (glass-fiber-reinforced thermosetting resin) pipe and fittings*

ASTM D4024, *Standard specification for machine made “fiberglass” (glass-fiber-reinforced thermosetting resin) flanges*

ASTM D5421, *Standard specification for contact molded “fiberglass” (glass-fiber-reinforced thermosetting resin) flanges*

ASTM E1529, *Standard test methods for determining effects of large hydrocarbon pool fires on structural members and assemblies*

ASTM E2092, *Standard test method for distortion temperature in three-point bending by thermomechanical analysis*

API Spec 15HR, *Specification for high pressure fiberglass line pipe*

API Spec 5B 14<sup>th</sup> edition, *Gauging and inspection of casing, tubing, and line pipe threads*

IMO Resolution A 653(16), *Recommendation on improved fire test procedures for surface flammability of bulkhead, ceiling and deck finish materials*

IMO MSC.61(67) *International code for application of fire test procedures (FTP code)*