

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

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

Erdöl- und Erdgasindustrie - Glasfaserverstärkte Kunststoffrohrleitungen (GFK) - Teil 1: Anwendungsbereiche und Werkstoffe (ISO 14692-1:2002)

Industries du pétrole et du gaz naturel - Canalisations en plastique renforcé de verre (PRV) - Partie 1: Vocabulaire, symboles, applications et matériaux (ISO 14692-1:2002)

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**ICS:**

01.040.75	Naftna in sorodna tehnologija (Slovarji)	Petroleum and related technologies (Vocabularies)
75.200	U]   ^ { æ Á æ Á \   æ ã æ ^ } æ Æ Æ æ ç ã   [ ã ç [ á [ ç Æ : ^ { ^   b \ ^ * æ   ã æ	Petroleum products and natural gas handling equipment
83.140.30	Cevi, fittingi in ventili iz polimernih materialov	Plastics pipes, fittings and valves

**SIST EN ISO 14692-1:2004** **en**

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English version

**Petroleum and natural gas industries - Glass-reinforced plastics  
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Industries du pétrole et du gaz naturel - Canalisations en  
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This European Standard was approved by CEN on 2 December 2002.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

**EN ISO 14692-1:2002 (E)****Foreword**

This document (EN ISO 14692-1:2002) 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of an identical text or by endorsement, at the latest by June 2003, and conflicting national standards shall be withdrawn at the latest by June 2003.

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, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

**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.

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The text of ISO 14692-1:2002 has been approved by CEN as EN ISO 14692-1:2002 without any modifications.

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

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*Industries du pétrole et du gaz naturel — Canalisations en plastique  
renforcé de verre (PRV) —  
Partie 1: Vocabulaire, symboles, applications et matériaux*

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## ISO 14692-1:2002(E)

## 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 14692-1 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*.

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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* [SIST EN ISO 14692-1:2004  
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- *Part 2: Qualification and manufacture*
- *Part 3: System design*
- *Part 4: Fabrication, installation and operation*



## Introduction

ISO 14692 (all parts) for the use of glass-reinforced plastics (GRP) piping in oil and natural gas industries is based on the document *Specifications and recommended practice for the use of GRP piping offshore* published by the United Kingdom Offshore Operators Association (UKOOA) in 1994. The objective of ISO 14692 (all parts) is to provide the oil and gas industry, and the supporting engineering and manufacturing industry, with mutually agreed specifications and recommended practices for the design, purchase, manufacturing, qualification testing, handling, storage, installation, commissioning and operation of GRP piping systems.

ISO 14692-2, ISO 14692-3 and ISO 14692-4 follow the individual phases in the life cycle of a GRP piping system, i.e. from design through manufacture to operation. Each part is therefore aimed at the relevant parties involved in that particular phase. It is primarily intended for offshore applications on both fixed and floating topsides facilities, but it may also be used as guidance for the specification, manufacture, testing and installation of GRP piping systems in other similar applications found onshore, e.g. produced-water and firewater systems.

- *Part 1: Vocabulary, symbols applications and materials.* It defines terms and symbols, and identifies the applications that ISO 14692 (all parts) is intended to cover, together with anticipated end users. It also defines limits on the material used for the construction of components and describes the pressure terminology used throughout ISO 14692 (all parts). Main users are envisaged to include all parties in the life cycle of a typical GRP piping system. ISO 14692-1 should be used in conjunction with the part of specific relevance.
- *Part 2: Qualification and manufacture.* Its objective is to enable the purchase of GRP components with known and consistent properties from any source. Main users of the document are envisaged to be the principal and the manufacturer, certifying authorities and government agencies.
- *Part 3: System design.* Its objective is to ensure that piping systems, when designed using the components qualified in ISO 14692-2, meet the specified performance requirements. Main users of the document are envisaged to be the principal, design contractors, suppliers contracted to do the design, certifying authorities and government agencies.
- *Part 4: Fabrication, installation and operation.* Its objective is to ensure that installed piping systems meet the specified performance requirements throughout their operational life. Main users of the document are envisaged to be the principal, fabrication/installation contractors, repair and maintenance contractors, certifying authorities and government agencies.

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

## Part 1: Vocabulary, symbols, applications and materials

### 1 Scope

This part of ISO 14692 gives the terms, definitions and symbols used in the specification, manufacture, testing and installation of glass-reinforced plastics (GRP) piping installations associated with offshore applications on both fixed and floating topsides facilities for oil and gas industry production and processing. It also describes the philosophy and provides guidance on the range of suitable applications for such piping, and defines limitations to the materials of construction for these applications.

It is intended to be used in conjunction with the other parts of ISO 14692.

This part of ISO 14692 also describes the pressure terminology used in ISO 14692 (all parts).

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### 2 Terms and definitions

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For the purposes of this document, the following terms and definitions apply.

#### 2.1 General terms

##### 2.1.1

##### **authority having jurisdiction**

third-party organization required to be satisfied with the standard of engineering proficiency and safety of a project

EXAMPLE A classification society, verification body or government regulatory body.

##### 2.1.2

##### **contractor**

party which carries out all or part of the design, engineering, procurement, construction and commissioning for a project or operation of a facility

NOTE The **principal** (2.1.9) may undertake all or part of the duties of the contractor.

##### 2.1.3

##### **designer**

party which carries out all or part of the design for a project or facility

##### 2.1.4

##### **installer**

party which carries out all or part of the construction and commissioning of composite pipe installations and installation work for a project

**ISO 14692-1:2002(E)****2.1.5****installation inspector**

person able to perform satisfactory and independent inspection of composite pipe installations and installation work

**2.1.6****installation supervisor**

tradesman able to perform practical supervision of the installation and joining of composite pipes

**2.1.7****manufacturer**

party which manufactures or supplies equipment to perform the duties specified by the contractor

**2.1.8****operator**

party which assumes ultimate responsibility for the operation and maintenance of the piping system

NOTE The operator may or may not be the same as the principal or principal's agent.

**2.1.9****principal**

party that initiates the project and ultimately pays for its design and construction

NOTE The principal generally specifies the technical requirements and is ultimately responsible for ensuring that safety and all other issues are addressed. The principal may also include an agent or consultant, authorized to act for the principal.

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**2.1.10****site**

location where piping system is installed

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**2.2 Technical terms**

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**2.2.1****accelerator**

substance which, when mixed with a catalyst or a resin, will speed up the chemical reaction between catalyst and resin

**2.2.2****active fire protection**

method of extinguishing fire by application of substances such as halon, water, CO<sub>2</sub>, foam, etc.

**2.2.3****adhesive joint****adhesive bond**

bonded joint

glued joint

socket joint

rigid type of joint between two components made using an adhesive

NOTE Generally consists of a slightly conical (tapered) bell end and a machined (cylindrical or tapered) spigot end.

**2.2.4****anisotropic**

exhibiting different properties when tested along axes in different directions