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

Part 2: Qualification and manufacture



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Part 2: Qualification and manufacture

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Preface

This Standard was prepared by the Standards Australia Committee ME-092, Materials, equipment, structures and related services for petroleum, petrochemical and natural gas industries.

The objective of this document is to give 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 document is intended to be read in conjunction with AS ISO 14692.1:2022.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document 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*.

This second edition cancels and replaces the first edition (ISO 14692-2:2002), which has been technically revised. It also incorporates the Technical Corrigendum ISO 14692-2:2002/Cor 1:2005.

A list of all the parts of ISO 14692 can be found on the ISO website.

Introduction

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

The qualification programme and the quality programme are the most significant clauses in this document.

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Australian Standard[®]

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

Part 2: Qualification and manufacture

1 Scope

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

2 Normative references

The following documents are referred to in the text in such a way that none or all of their content constitutes requirements 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 resins — Determination of the residual styrene monomer content, as well as the content of other volatile aromatic hydrocarbons, by gas chromatography*

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

ISO 11359-2, *Plastics — Thermomechanical analysis (TMA) — Part 2: Determination of coefficient of linear thermal expansion and glass transition temperature*

ISO 14130, *Fibre-reinforced plastic composites — Determination of apparent interlaminar shear strength by short-beam method*

ISO 14692-1:2017, *Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping — Part 1: Vocabulary, symbols, notations and materials*

ISO 14692-3:2017, *Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping — Part 3: System design*

ISO 14692-4:2017, *Petroleum and natural gas industries — Glass-reinforced plastics (GRP) piping — Part 4: Fabrication, installation, inspection and maintenance*

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

ASME RTP-1-2007, *Reinforced thermoset plastic corrosion-resistant equipment*

ASTM D638, *Standard test method for tensile properties of plastics*

ASTM D696, *Standard test method for coefficient of linear thermal expansion of plastics between $-30\text{ }^{\circ}\text{C}$ and $30\text{ }^{\circ}\text{C}$ with a vitreous silica dilatometer*

ASTM D1598, *Standard Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure*