
**Glass-reinforced thermosetting
plastics (GRP) pipes and fittings —
Test methods to prove the design
of locked socket-and-spigot joints,
including double-socket joints, with
elastomeric seals**

*Tubes et raccords en plastiques thermodurcissables renforcés de
verre (PRV) — Méthodes d'essai pour confirmer la conception des
assemblages mâle-femelle verrouillés, y compris ceux à double
emboîture avec joints d'étanchéité en élastomère*



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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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 6, *Reinforced plastics pipes and fittings for all applications*.

This second edition cancels and replaces the first edition (ISO 7432:2002), which has been technically revised.

This edition includes the following significant changes compared to the previous edition:

- changed Scope to mention that the test procedure is a destructive test;
- terms and definitions clause added to this document;
- changed testing sequences from mandatory to recommended;
- changed wording from “misalignment” to “deformation”;
- modified test sequence for the proof of the design ([Clause 9](#));
- changes in [Table 1](#) with modified testing sequences for the proof of the design of joints;
- modification of bending test sequence.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

In a pipework system, pipes and fittings of different nominal pressures and nominal stiffnesses may be used.

A joint may be made between pipes and/or fittings and should be designed such that its performance is equal to or better than the requirements for the pipeline, but not necessarily for the components being joined.

The requirements for the assembly of the joint are not included in this document, but they should be in accordance with the manufacturer's recommendations.

The material-dependent parameters and/or performance requirements are stated in the referring standard.

Glass-reinforced thermosetting plastics (GRP) pipes and fittings — Test methods to prove the design of locked socket-and-spigot joints, including double-socket joints, with elastomeric seals

1 Scope

This document specifies methods of test for joints with a locked socket and spigot, including double-socket joints, and with elastomeric seals, for buried and above ground glass-reinforced thermosetting plastics (GRP) piping systems. It covers methods of test for leaktightness and resistance to damage of the joint only, when subjected to specified combinations of angular movement, compression (deformation) perpendicular to the pipe axis and internal pressure. It assumes that the joint will be exposed to the effects of hydrostatic end thrust.

This document is applicable to joints for either pressure or non-pressure applications. The tests are suitable for the evaluation of joints intended for applications in which the liquids are conveyed at temperatures specified in the referring standards.

The joints tested in accordance with this document are subjected to conditions which measure their ability to function and thereby prove the design of the joint, especially for type test purposes. The joint is only qualified according to the test sequences and configurations detailed in this document.

With the exception of the bending test (see 9.5), the test procedures are applicable to joints for pipes and fittings of all nominal sizes. If not otherwise agreed between the manufacturer and the customer, the bending test detailed in 9.5 is applicable to joints with pipes and fittings up to and including DN 600.

The test procedures in this document are damaging to the test piece, which will not be suitable for reuse after these tests. The test procedure is intended to be applied for type testing purposes.

This document is applicable only to the joint and specifies methods of test to prove its design.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

pressure

hydrostatic gauge pressure

Note 1 to entry: Expressed in bar.

3.2

bending

bending in the pipe and coupling configuration as a result of a vertical force on the coupling