

7 Yj b]g]ghYa]n'dc`ja Yfb] `a UHf]Ucj `!Gdc`nUWj]]b`Zhb[Y]n`Xi fca Yfb]
a UHf]Ucj žc`U Yb] `g`gh`Yb]a]j`U_b]f] FDŁ!`A YfcXY`nUdfYg_i g`hYgb`Yb`U]b
cXdcfbcgh]dfch]dcý_cXVUa []V`j]] `]b`ca Y`Ybc []V`j]] `gdc`Yj

Plastics piping systems - Joints for glass-reinforced thermosetting plastics (GRP) pipes and fittings - Test methods for leaktightness and resistance to damage of flexible and reduced-articulation joints

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Kunststoff-Rohrleitungssysteme - Verbindungen für Rohre und Formstücke aus glasfaserverstärkten duroplastischen Kunststoffen (GFK) - Prüfverfahren zur Dichtheit und Widerstandsfähigkeit gegen Beschädigung von flexiblen und eingeschränkt beweglichen Verbindungen

SIST EN 1119:1997

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Systemes de canalisations plastiques - Assemblages pour tubes et raccords en plastique thermodurcissable renforcé de verre (PRV) - Méthodes d'essai d'étanchéité et de résistance a l'endommagement des assemblages flexibles et a articulation réduite

Ta slovenski standard je istoveten z: EN 1119:1996

ICS:

23.040.60 Prirobnice, oglavki in spojni elementi Flanges, couplings and joints

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en

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EUROPEAN STANDARD

EN 1119

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 1996

ICS 23.040.60

Descriptors: plastic tubes, hoses, reinforced plastics, glass reinforced plastics, thermosetting resins, pipe fittings, seals stoppers, tests, leaktightness

English version

**Plastics piping systems - Joints for
glass-reinforced thermosetting plastics (GRP)
pipes and fittings - Test methods for leaktightness
and resistance to damage of flexible and
reduced-articulation joints**

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Systèmes de canalisations en plastique
Assemblages pour tubes et raccords en plastique
thermodurcissable renforcé de verre (PRV)
Méthodes d'essai d'étanchéité et de résistance
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Kunststoff-Rohrleitungssysteme - Verbindungen
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This European Standard was approved by CEN on 1995-10-14. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Foreword

This European standard has been prepared by Technical Committee CEN/TC 155 "Plastics piping systems and ducting systems", the Secretariat of which is held by NNI.

This standard is based on the draft International Standard ISO/DIS 8639 "Pipes and fittings of glass-fibre reinforced thermosetting plastics (GRP) - Flexible socket and spigot, including double socket, joints with elastomeric sealing rings - Specification and test methods" prepared by the International Organization for Standardization (ISO). It is a modification of ISO/DIS 8639 for reasons of alignment with texts of other standards on test methods.

The modifications are:

- test parameters (pressure, time, temperature) are not specified;
- material-dependent requirements are not given;
- editorial changes have been introduced.

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

This standard is one of a series of standards on test methods which support System Standards for plastics piping systems and ducting systems.

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 September 1996, and conflicting national standards shall be withdrawn at the latest by September 1996.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This standard specifies test methods for flexible and reduced-articulation socket-and-spigot joints with elastomeric sealing elements for above ground and buried glass-reinforced thermosetting plastics (GRP) pipeline applications. It covers methods of test for the leaktightness and resistance to damage of the joint only, when subject to specified combinations of longitudinal extension (draw), angular movement (angular deflection), vertical compression (misalignment) and internal pressure. This standard is applicable to joints for either pressure or non-pressure applications.

NOTE: The joints tested in accordance with this standard are subjected to conditions which measure their ability to function and thereby prove the design of the joint, especially for type test purposes.

2 Principle

A test piece comprising two pieces of pipe jointed together, by incorporation of a socket or inclusion of a double-socket coupler, is subjected to specified combinations of draw, angular deflection and misalignment. In each specified combination the test piece is subjected to a sequence of three or more test pressures for specified periods of time, including an internal sub-atmospheric test pressure.

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In addition, joints for pressure applications are subjected to a specified cyclic pressure test.

When under pressure, the joint is monitored for leakage.

Between each test condition (see tables 1 and 2) the joint is inspected for signs of damage.

NOTE: It is assumed that the following test parameters are set by the standard making reference to this standard:

- a) the nominal size of the components to be connected by the joint (see 4.1);
- b) the pressure class of the components (see 4.1);
- c) the total effective length, L , of the test piece (see 4.1);
- d) the number of test pieces (see 4.2);
- e) if applicable, the conditioning to be applied (see clause 5);
- f) the test temperature (see clause 6);
- g) the joint positions (see tables 1 and 2);

- h) the draw, angular deflection (see 7.2.3) and the force F (see 7.3.5);
- i) the permissible change in negative pressure (see 7.5.4).

3 Apparatus

3.1 End sealing devices, of sizes and type appropriate to the components under test, anchored to take the axial end thrust and permit free longitudinal movement.

3.2 Supports

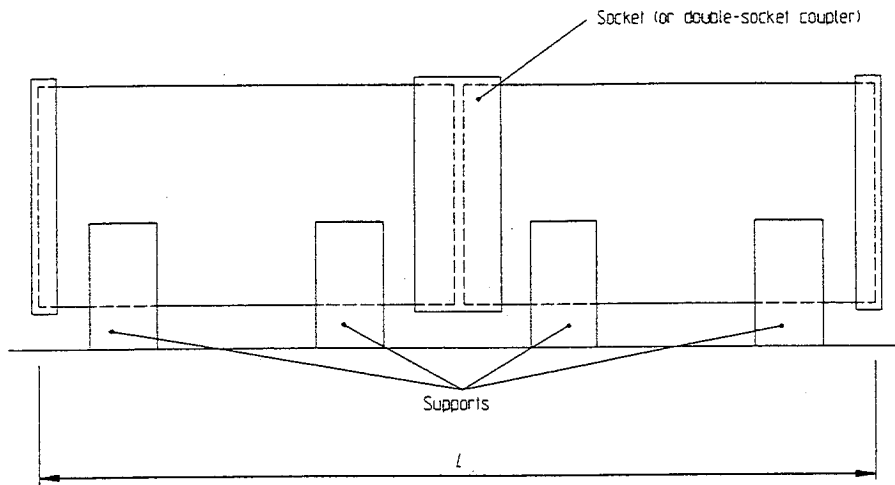
3.2.1 Straps or cradles, (100 ± 5) mm wide supporting an 180° arc of the pipe barrel or of the socket (see figure 1) for use as follows:

- a) support R [see figure 1b) and figure 2b)] positioned at least 500 mm from the spigot end of the pipe at the point of balance (see figure 1) to provide support during testing with misalignment. Cradles shall be provided close to the ends of the pipe during testing with angular deflection and draw [see figures 1a) and 2a)];

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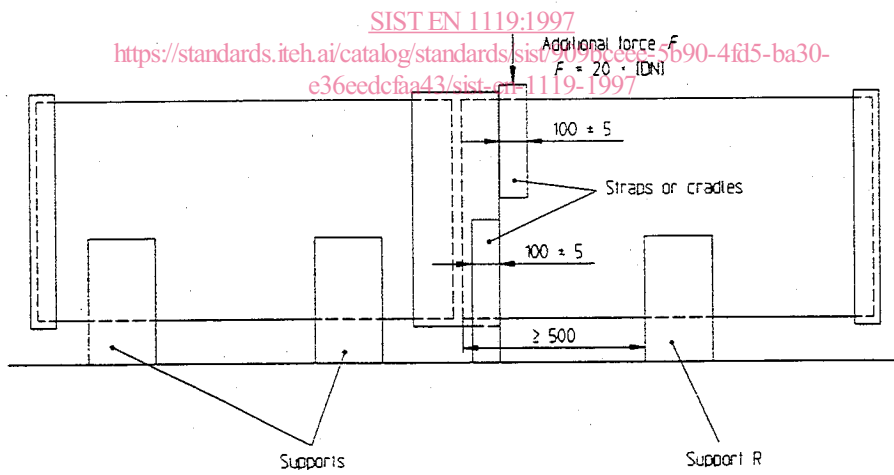
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a) Arrangement for angular deflection and draw

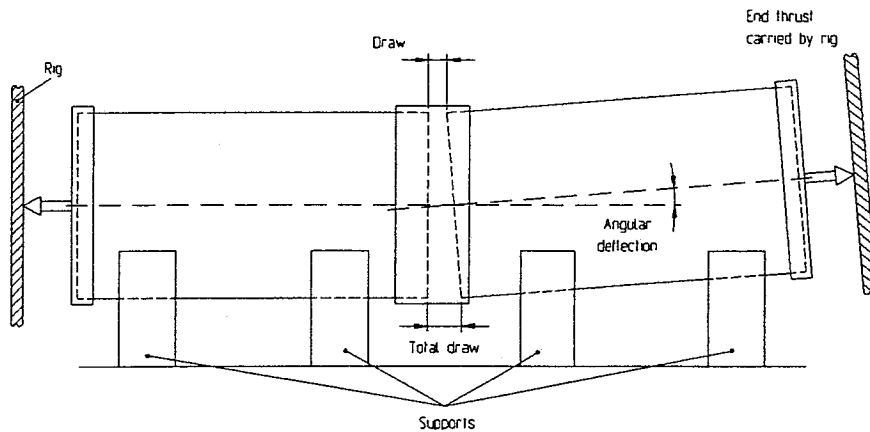
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Dimensions in millimetres



b) Arrangement for misalignment and draw

Figure 1: Test arrangement before testing (see 3.2.1)

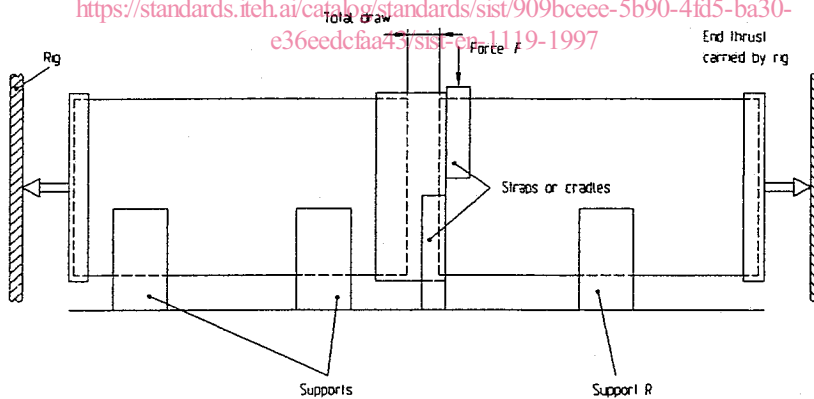


a) Joint position for angular deflection and draw

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b) Joint position for misalignment and draw

Figure 2: Joint positions during testing for arrangements shown in figure 1
(see 3.2.1)

b) a cradle, to support the socket on a fixed base, as required for misalignment testing (see 7.3);

- c) a strap or cradle positioned adjacent to the end of the joint being tested [see figures 1b) and 2b)], through which the force F necessary for misalignment testing (see 7.3) can be applied;
- d) supports, for the pipe components of the test piece (see 4.1 and figures 1 and 2). These can be used to apply angular deflection [see 7.2 and figure 2a)]. They shall allow misalignment to occur [see 7.3, 7.4, 7.5 and figure 2b)].

The straps or cradles shall not have a detrimental effect on the test piece, e.g. point loads.

3.2.2 Longitudinal supports, capable of supporting the end thrust induced by the internal pressure but which shall not otherwise support the joint (see figure 2).

3.2.3 Special supports, if necessary to prevent buckling of the pipe barrel during misalignment or negative pressure testing. Such supports shall be positioned so that they do not affect the force F applied to the joint or the response of the joint to such a load.

3.3 Means for applying the required force (see clause 7) and means for measurement of the applied force to an accuracy of $\pm 5\%$.

3.4 Source of hydrostatic pressure, capable of applying the required pressures including, as necessary, pressure cycling controls (see table 1).

3.5 Vacuum pump, capable of applying the required negative pressure (see 7.5.3 and table 1).

3.6 Pressure gauges, capable of measuring the positive and negative pressures at the top of the pipe to an accuracy of $\pm 2\%$.

4 Test pieces

4.1 Assembly

The test piece shall comprise an assembly of two pieces of pipe of compatible nominal size and pressure class, as specified in the referring standard, jointed by the socket/spigot, or double-socket, joint to be tested.

The total effective length, L , (see figure 1) of the test piece shall be not less than that specified in the referring standard.

The joint under test shall be assembled in accordance with the manufacturer's recommendations.