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**Cevni sistemi iz polimernih materialov - Plastomerni fittingi, oblikovani z injekcijskim vbrizgavanjem, za spoje z elastomernimi tesnilnimi obroči v tlačnih cevovodih - Metoda za preskus odpornosti proti kratkotrajnemu notranjemu tlaku, brez osne obremenitve**

Plastics piping systems - Injection-moulded thermoplastics fittings for elastic sealing ring type joints for pressure piping - Test method for resistance to a short-term internal pressure without end thrust

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Kunststoff-Rohrleitungssysteme - Spritzguß-Formstücke aus Thermoplasten für Steckmuffenverbindungen für Druckrohrleitungen - Prüfverfahren für die Widerstandsfähigkeit gegen Kurzzeit-Innendruck ohne Axialbeanspruchung

<https://standards.iteh.ai/catalog/standards/sist/8492d725-b4dd-4c71-a0d3-dbf9469cd1b/sist-en-803-1997>

Systemes de canalisations en plastiques - Raccords thermoplastiques moulés par injection a bagues d'étanchéité pour canalisations avec pression - Méthode d'essai de résistance a une pression interne de courte durée sans effet de fond

**Ta slovenski standard je istoveten z: EN 803:1994**

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**ICS:**

23.040.45	Fitingi iz polimernih materialov	Plastics fittings
23.040.60	Prirobnice, oglavki in spojni elementi	Flanges, couplings and joints

**SIST EN 803:1997**

**en**

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EUROPEAN STANDARD

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Descriptors: Pipelines, pressure pipes, plastic tubes, pipe fittings, thermoplastic resins, joining, sealing rings, rubber, pressure tests, resistance tests

English version

**Plastics piping systems - Injection-moulded  
thermoplastics fittings for elastic sealing ring type  
joints for pressure piping - Test method for  
resistance to a short-term internal pressure  
without end thrust**

Systèmes de canalisations en plastiques  
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à bagues d'étanchéité pour canalisations avec  
pression - Méthode d'essai de résistance à une  
pression interne de courte durée sans effet de  
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Kunststoff-Rohrleitungssysteme -  
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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.

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# CEN

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

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

## Foreword

This standard was prepared by CEN/TC 155 "Plastics piping systems and ducting systems".

This standard is based on the International Standard ISO 2035:1974 "Unplasticized poly(vinyl chloride) (PVC) moulded fittings for elastic sealing ring type joints for use under pressure - Pressure-resistance test", published by the International Organization for Standardization (ISO). It is a modification of ISO 2035:1974 for reasons of applicability to other plastics materials and/or other test conditions and alignment with texts of other standards on test methods.

The modifications are:

- no material is mentioned;
- test parameters, except those common to all plastics, are omitted;
- editorial changes have been introduced.

The material-dependent parameters and/or performance requirements are incorporated in the System Standard(s) concerned.

No existing European Standard is superseded by this 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 October 1994, and conflicting national standards shall be withdrawn at the latest by October 1994.

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

## 1 Scope

This standard specifies a method for testing the resistance to internal hydrostatic pressure at  $20\text{ }^{\circ}\text{C}$  of any injection-moulded thermoplastics fittings with elastic sealing ring type joints for thermoplastics pressure pipes having a nominal diameter,  $d_n$ , less than or equal to 315 mm, where the joint is not intended to withstand hydrostatic end thrust.

This method is intended for testing fittings over a period of the order of 1 h to 10 h at a pressure which is material-dependent and typically several times the nominal pressure of the fitting.

## 2 Principle

A specified pressure is applied for a specified period at  $(20 \pm 2)\text{ }^{\circ}\text{C}$  to a test piece consisting of the fitting assembled with (an) appropriate pipe(s) by one or more elastic sealing ring type joints and supported in a manner which compensates for end thrust.

The test piece is inspected for signs of failure of the fitting.

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

- a) the test pressure,  $p$ , generally expressed as a multiple, not necessarily integer, of the nominal pressure rating of the fitting;
- b) the period of time,  $t$ , that the test piece is subjected to pressure.

## 3 Apparatus

3.1 Pressurizing device, including thermostatic and/or environmental controls, capable of maintaining the specified hydrostatic pressure,  $p$  [see item a) of the note to clause 2] to within  $\pm 2,5\%$ , for the specified period of time,  $t$  [see item b) of the note to clause 2], and of maintaining the test piece at  $(20 \pm 2)\text{ }^{\circ}\text{C}$ .

3.2 **Supporting device**, to compensate for the end thrust(s) resulting from the application of internal pressure.

3.3 **Pressure gauge**, capable of checking conformity to the specified test pressure,  $p$  (see 3.1).

#### 4 Test piece

The test piece shall comprise an assembly of one or more pipe sections and fittings including at least one fitting of the type to be tested.

Unless otherwise specified in the referring standard, the section(s) of pipe to be connected shall have a length of three times  $d_n$  with a minimum of 250 mm. They shall be capable of withstanding the test pressure,  $p$ , required by the referring standard.

Assembling of the test piece shall be carried out in accordance with the manufacturer's instructions.

#### 5 Procedure

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In any convenient order carry out the following steps:

- a) connect the end of one of the pipe sections of the test piece to the pressurizing device (see 3.1);
- b) close by appropriate means the other end(s) of the test piece;
- c) fill the test piece with water at  $(20 \pm 2) ^\circ\text{C}$ , taking care to bleed off all internal air. Wait for at least 20 min after filling to ensure equalization of temperature to  $(20 \pm 2) ^\circ\text{C}$ .

Remove any moisture from the outside surface of the test piece.

Apply hydrostatic pressure progressively in such a way that the test pressure,  $p$ , is reached in not less than 30 s and not more than 300 s.

Maintain the test piece environment at  $(20 \pm 2) ^\circ\text{C}$  for the specified period,  $t$ , or until prior failure occurs.

Maintain the pressure,  $p$ , for the specified period,  $t$ , checking by means of the pressure gauge that the pressure is within  $\pm 2,5 \%$  and ensuring that no leakage occurs at any area of the test piece unless prior failure occurs.

If any area of the assembly other than a fitting under test shows failure (e.g. failure of another joint or a pipe bursting), start the test again, if necessary using other test piece elements. Maintain the pressure until the assembly has shown constant leaktightness for the period,  $t$ , or until the fitting(s) fail(s), whichever occurs first.

Record the results accordingly.

## 6 Test report

The test report shall include the following information:

- a) a reference to this standard and to the referring standard;
- b) the size, type and nominal pressure of the fitting and the material from which the fitting is made;
- c) the identity of the batch or production run from which the fitting was sampled;
- d) the type(s) of pipe(s) connected to the fitting in the test assembly and the material(s) from which the pipe(s) is(are) made;
- e) the test pressure,  $p$ , in bars<sup>1)</sup>;
- f) the period of time,  $t$ , in hours, the test piece was subjected to pressure;
- g) the test temperature, in degrees Celsius;
- h) whether or not the fitting and/or its joints exhibited any signs of deterioration, leakage, fracture or any other form of failure as specified by the referring standard;
- i) if applicable, observations of any failures causing repetition of the test;
- j) any factors which may have affected the results, such as any incidents or any operating details not specified in this standard;
- k) the date of test.

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1) 1 bar =  $10^5$  N/m<sup>2</sup>.