



SLOVENSKI STANDARD SIST EN 1705:1997

01-februar-1997

Cevni sistemi iz polimernih materialov - Plastomerni ventili - Metoda za preskus neoporečnosti ventila po zunanjem udarcu

Plastics piping systems - Thermoplastics valves - Test method for the integrity of a valve after an external blow

Kunststoff-Rohrleitungssysteme - Thermoplast-Armaturen - Prüfverfahren der Unversehrtheit einer Armatur nach äußerer Schlagbelastung

Systemes de canalisations en plastique - Robinets en thermoplastiques - Méthode d'essai pour la vérification d'un robinet apres un choc externe

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Ta slovenski standard je istoveten z: EN 1705:1996

ICS:

83.140.30	Cevi, fitingi in ventili iz polimernih materialov	Plastics pipes, fittings and valves
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EUROPEAN STANDARD

EN 1705

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 1996

ICS 23.060.00

Descriptors: plastic tubes, cocks, thermoplastic resins, driving squares, tests, leak tests, impact tests, verification, torque

English version

**Plastics piping systems - Thermoplastics valves -
Test method for the integrity of a valve after an
external blow**

Systèmes de canalisations en plastique -
Robinets en thermoplastiques - Méthode d'essai
pour la vérification d'un robinet après un choc
externe

Kunststoff-Rohrleitungssysteme -
Thermoplast-Armaturen - Prüfverfahren der
Unversehrtheit einer Armatur nach äußerer
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This European Standard was approved by CEN on 1996-10-27. 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.

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

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 May 1997, and conflicting national standards shall be withdrawn at the latest by May 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of 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 and the United Kingdom.

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1 Scope

This standard specifies a method for determining the leaktightness and the ease of operation of a valve following an impact applied to the operating mechanism (cap) or other exposed mechanism.

2 Normative references

This standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter.

For dated references, subsequent amendments to, or revisions of, any of these publications apply to this standard only when incorporated in it by amendment or revision.

For undated references the latest edition of the publication referred to applies.

EN 744:1995 *Plastics piping and ducting systems - Thermoplastics pipes - Test method for resistance to external blows by the round-the-clock method*

EN 28233 *Thermoplastics valves - Torque - Test method*

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3 Principle

The operating cap or other exposed mechanism of an assembled valve is struck once by a falling weight under specific conditions onto its most critical position, i.e. the position on a valve of any given design most likely to impair its performance (see 6.1.4). The valve is then tested for any effects on its operating torque, strength of the stop mechanism and leaktightness.

Unless otherwise specified in the referring standard, the test temperatures are -20 °C and +40 °C.

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

- a) the impact test parameters, including;
 - the mass of the falling weight (see 4.2);
 - the geometry of the striker (see 4.2);
 - the height of the fall of the striker (see 6.1);
- b) maximum stop torque (see 6.3 and 6.5);
- c) if applicable, the test temperature(s) (see clause 3).

4 Apparatus

4.1 A clamping fixture, with a means of clamping the valve at both outlets to a base which is rigid and moveable.

4.2 A falling weight testing machine, conforming to EN 744, with the testing parameters as specified by the referring standard.

4.3 A device for measuring the operating torque of the valve and the strength of the stop mechanisms.

4.4 A temperature-controlled environment, maintained at (-20 ± 2) °C.

4.5 A temperature-controlled environment, maintained at (40 ± 2) °C.

4.6 A temperature-controlled water bath, maintained at (20 ± 2) °C.

4.7 Other equipment, as follows:

- a) a compressed air supply capable of maintaining the specified pressure (see 6.6);
- b) a pressure measurement device, capable of checking conformity to the specified pressure (see 6.6);
- c) a temperature measurement device(s) capable of checking conformity to the temperatures specified in 4.4, 4.5, 4.6, 6.1, 6.2, 6.4 and 6.6;
- d) end-closures connected to the ends of the valve, allowing, by means of an appropriate system, sealing and connecting to the pressurising equipment.

5 Test piece

The test piece shall comprise a valve, in the as-manufactured condition, complete with operating cap or other mechanism and end-closures (see 4.7).

6 Procedure

6.1 General

6.1.1 Measure and record the opening and closing torques of the valve in accordance with EN 28233.

6.1.2 Mount the valve in the clamping fixture (4.1) so that when tested in accordance with 6.1.4 the striker will impact upon the position on the valve mechanism most likely to impair its performance.

Set the falling weight testing machine so that the height of fall of the striker to the point of contact with the valve mechanism (see 6.1.4) will be as specified (see note to clause 3).

6.1.3 Place the valve and fixture assembly in the temperature-controlled environment and condition it at (-20 ± 2) °C for a minimum of 2 h.

6.1.4 Remove the valve and fixture assembly from the temperature-controlled environment. Within 30 s position the assembly in the testing machine and release the falling weight so that the striker falls onto the applicable point of the valve operating mechanism (see 6.1.2).

6.1.5 Inspect the test piece visually for and record the details of the position and appearance of any evidence of cracking after impact.

NOTE: Attention is drawn to the need to contain the possible effects of failure of components subjected to impact testing or destructive testing.

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6.2 Assessment of operating torque at -20 °C

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Following the impact test recondition the valve at (-20 ± 2) °C for a minimum of 2 h.

Measure and record the opening and closing torques in accordance with EN 28233.

6.3 Assessment of the resistance of the stop mechanism at -20 °C

Immediately following testing in accordance with 6.2, apply the maximum stop torque, as specified by the referring standard, to the valve in the open and closed positions.

Record any evidence of damage and/or malfunction.

6.4 Assessment of operating torque at 40 °C

Following testing in accordance with 6.2 and 6.3, recondition the valve at (40 ± 2) °C for a minimum of 24 h.

Measure and record the opening and closing torque in accordance with EN 28233.

6.5 Assessment of the resistance of the stop mechanism at 40 °C

Immediately following testing in accordance with 6.4, apply the maximum closing torque, as specified by the referring standard, to the valve in the open and closed positions.

Record any evidence of damage and/or malfunction.

6.6 Assessment of external leaktightness

Following testing in accordance with 6.5, connect the valve to the pneumatic pressure source [see item a) of 4.7] and condition it in a water bath at (20 ± 2) °C for a minimum of 12 h.

With the valve in the half-open position pressurise the valve pneumatically to at least 6 bar. Maintain this pressure for at least 1 h while monitoring it for, and recording, any signs of external leakage.

NOTE: Attention is drawn to the need to contain the possible effects of failure of components subjected to impact testing or destructive testing.

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7 Test report <https://standards.iteh.ai/catalog/standards/sist/cb8a54b5-f9b9-4ffa-81b4-0d9100e92269/sist-en-1705-1997>

The test report shall include the following information:

- a) the reference to this standard and to the referring standard;
- b) a full identification of the product, including manufacturer and production date;
- c) the test temperatures;
- d) the values of opening and closing torques measured prior to impact (see 6.1), and following impact at both -20 °C and 40 °C (see 6.2 and 6.4), and a description of any visible evidence of cracking after impact (see 6.1);
- e) the torque applied to the operating stop mechanisms and any signs of consequent damage or malfunction;
- f) the results of the leaktightness test (see 6.6);
- g) any factors which may have affected the results, such as any incidents or any operating details not specified in this standard;
- h) the date of test.