



SLOVENSKI STANDARD
oSIST prEN ISO 8659:2019
01-julij-2019

Plastomerni ventili - Trajna nihajna trdnost - Preskusna metoda (ISO/DIS 8659:2019)

Thermoplastics valves - Fatigue strength - Test method (ISO/DIS 8659:2019)

Armaturen aus Thermoplasten - Ermüdungsfestigkeit - Prüfverfahren (ISO/DIS 8659:2019)

Robinets en matériaux thermoplastiques - Résistance à la fatigue - Méthode d'essai (ISO/DIS 8659:2019)

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ICS:

23.060.01	Ventili na splošno	Valves in general
83.140.30	Polimerne cevi in fittingi za snovi, ki niso tekočine	Plastics pipes and fittings for non fluid use

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en

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Thermoplastics valves — Fatigue strength — Test method

Robinets en matériaux thermoplastiques — Résistance à la fatigue — Méthode d'essai

ICS: 23.060.01; 83.140.30

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Foreword

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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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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 [or Project Committee] ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*, Subcommittee SC 07, *Valves and auxiliary equipment of plastics materials*.

This second edition cancels and replaces the first edition (ISO 8659:1989), which has been technically revised.

The main changes compared to the previous edition are as follows:

- updating of the normative references and definitions
- specification of the type of valve in the test report and explanation note for the opening torque

Introduction

The aim of this International Standard is to establish certain basic requirements for the endurance testing of plastics valves to ensure that uniform test methods are adopted. This International Standard must be considered in conjunction with any specific requirements in particular product standards applicable to the individual types of valves.

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Thermoplastics valves — Fatigue strength — Test method

1 Scope

This International Standard specifies the endurance test necessary to confirm the ability of hand-operated plastics valves to withstand prolonged use, with repeated opening and closure. It does not specify the ability of valves to withstand adverse conditions, in particular those of chemically aggressive fluid media and/or environments, or excessive fluid velocities and cavitation.

NOTE For what concern the chemical aggression of the materials, a classification table is reported in ISO TR 10358^[1].

This International Standard includes values of the parameters necessary for the proper performance of the endurance test, with the reservation that parameters may be different in particular product standards (see 5.1).

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 16135, *Industrial valves — Ball valves of thermoplastics materials*

ISO 16136, *Industrial valves — Butterfly valves of thermoplastics materials*

ISO 16138, *Industrial valves — Diaphragm valves of thermoplastics materials*

ISO 16139, *Industrial valves — Gate valves of thermoplastics materials*

ISO 21787, *Industrial valves — Globe valves of thermoplastics materials*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 161-1 and the following apply. For the purposes of this International Standard, the following definitions apply.

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

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

3.1 General terms

3.1.1

nominal pressure

PN

an alphanumerical designation of pressure, used for reference purposes, which is related to the mechanical strength of the valve.

Note 1 to entry: Usually it corresponds to the pressure of water at 20 °C, in bars, for which the valve is designed, see also ISO 161-1:2018^[2]

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3.1.2

closing torque

torque exerted over the full closing operation to achieve full tightness of the valve at nominal pressure.

3.1.3

opening torque

torque exerted initially to open the valve from fully closed or over the full opening operation.

3.1.4

fluid velocity

the velocity of a fluid in a pipe connected to a valve of nominal size equivalent to the nominal diameter of the pipe.

3.2 Reference dimensions

3.2.1

nominal size

DN

an alphanumeric designation of size for components of a pipework system, which is used for reference purposes. It comprises the letters DN followed by a dimensionless whole number which is indirectly related to the physical size, in millimetres, of the bore or outside diameter of the end connections.

[SOURCE: ISO 6708:1995]

3.2.2

nominal outside diameter

d_n

specified outside diameter, assigned to a nominal size DN

Note 1 to entry: The nominal outside diameter d_n of pipes is given in ISO 161-1^[2] and of flange adapters and loose backing flanges in ISO/DIS 9624^[4].

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4 Apparatus

Test apparatus, capable of testing the whole valve assembly with its obturator mechanism. Furthermore, it shall include appropriate devices to perform each step separately, or continuously and automatically.

The test apparatus shall include appropriate means to discontinue the test cycle during the pressure period and to maintain the pressure in the closed position.

Pressure gauges shall be accurate to within $\pm 1\%$ of the full- scale reading.

Temperature sensors shall be accurate to within $\pm 2\text{ }^\circ\text{C}$.

NOTE Attention is drawn to the need for adequate safety precautions when using compressed air or gas for this test.

5 Procedure

5.1 Test requirements to be taken from product standards

The following specifications shall be taken from the particular product standard.

- a) any tests which shall be performed before the endurance test, and those which shall be repeated after completion of the endurance test;
- b) whether tightening of the gland packing (if used) during the endurance test is allowed;
- c) acceptance criteria for tests;