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STANDARD

**8659**

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**Thermoplastics valves — Fatigue strength —  
Test method**

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



Reference number  
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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8659 was prepared by Technical Committee ISO/TC 138, *Plastics pipes, fittings and valves for the transport of fluids*.

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International Organization for Standardization  
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## **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.

# 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.

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. At the time of publication, the editions indicated were valid. 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 161-1 : 1978, *Thermoplastics pipes for the transport of fluids — Nominal outside diameters and nominal pressures — Part 1: Metric series.*

ISO 6708 : 1980, *Pipe components — Definition of nominal size.*

ISO 7005-2 : 1988, *Metallic flanges — Part 2: Cast iron flanges.*

ISO 7005-3 : 1988, *Metallic flanges — Part 3: Copper alloy and composite flanges.*

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 nominal pressure (PN):** An alphanumerical designation of pressure, used for reference purposes, which is related to the mechanical strength of the valve. Usually it corresponds to the pressure of water at 20 °C, in bars, for which the valve is designed (see also ISO 161-1).

**3.2 closing torque:** Torque required to close a valve to full tightness at the nominal pressure.

**3.3 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.

**3.4 reference dimensions:** The following are considered to be the reference dimensions:

- nominal size DN (see ISO 6708) for flanged systems (see ISO 7005-2 and ISO 7005-3);
- nominal outside diameter  $D$  for tubes (see ISO 161-1).

## 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.