BRITISH STANDARD

BS EN 28233:1992
BS 2782-11: Method 1131: 1992
ISO 8233:1988

Thermoplastics valves — Torque — Test method

The European Standard EN 28233:1990 has the status of a British Standard

UDC 621.646-036.073:620.1:531.781

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This British Standard, having been prepared under the direction of the Plastics and Rubber Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on
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Contents

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National foreword

This British Standard has been prepared under the direction of the Plastics and Rubber Standards Policy Committee and is the English language version of EN 28233:1990 *Thermoplastics valves — Torque — Test method,* published by the European Committee for Standardization (CEN). It is identical with ISO 8233:1988, published by the International Organization for Standardization (ISO).

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 4, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 28233

December 1990

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Descriptors: Plastics, thermoplastic resins, cocks, torque, tests, testing, conditions

English version

Thermoplastics valves — Torque — Test method

(ISO 8233:1988)

Robinets en matériaux thermoplastiques — Couple de manoeuvre — Méthode d'essai (ISO 8233:1988)

Armaturen aus Thermoplasten — Drehmoment — Prüfmethode (ISO 8233:1988)

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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

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Foreword

Based on the positive result of the Formal Vote procedure, the International Standard ISO 8233:1988 *Thermoplastics valves — Torque — Test method*

is adopted as a European Standard.

In accordance with the Common CEN/CENELEC Rules, 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 United Kingdom.

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1 Scope

This International Standard specifies a test method for the determination of the opening and closing torque of thermoplastics valves.

2 Field of application

This International Standard applies to all types of thermoplastics valves intended to be used for the transport of fluids.

3 References

ISO 161-1, *Thermoplastics pipes for the transport of fluids — Nominal outside diameters and nominal pressures — Part 1: Metric series.*

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

ISO 7349, *Thermoplastics valves — Connection references.*

4 Definitions

For the purposes of this International Standard, the definition of the nominal diameter (DN) given in ISO 6708 and the following definitions apply.

4.1
closing torque

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

4.2
opening torque

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

4.3
nominal pressure (PN)

alphanumeric designation, used for reference purposes, related to the mechanical strength of a valve. Usually it corresponds to the service pressure, in bar[1)], with water at 20 °C, for which the valve is designed (see ISO 161-1)

5 Test specimen

The test specimen shall be an unused valve, unless otherwise specified in the specific product standard.

6 Test conditions

6.1 Water or air at the nominal pressure of the valve (0,6 MPa max. when using air), connected in accordance with ISO 7349, at 23 ± 2 °C shall be applied to the test specimen as indicated in clause **8**.

6.2 Other test conditions, including the use of other fluids and/or other temperatures, may also be prescribed by specifications for valves for particular applications, such as those for the transport of gaseous fuels.

7 Apparatus

NOTE If air is used as the test medium, it is necessary to take appropriate safety precautions for the use of compressed gases.

7.1 *Pump,* capable of delivering a pressure at least equivalent to the nominal pressure of the valve under test.

7.2 *Device,* capable of supplying the required torque with an accuracy of ± 2 %.

7.3 *Measuring instrument,* between the torque device and the valve, which shall permit the continuous reading of the torque with the required accuracy of ± 2 %, and the recording of its maximum value.

8 Procedure

8.1 Torque test before conditioning

At least 12 h before carrying out this test, open and close the valve ten times to ensure smooth operation.

8.1.1 With the valve closed, raise the pressure gradually over 60 s to the nominal pressure of the valve and maintain it for 5 min.

8.1.2 Connect the valve handle to the torque device and measuring instrument and apply a torque, increasing it gradually until the opening torque is reached. Complete the opening of the valve in accordance with the requirements specified in the Table.

8.1.3 Record the opening torque of the valve, if possible during the whole operation.

8.1.4 Close the valve to full tightness at nominal pressure and record the closing torque, if possible during the whole operation.

8.1.5 The measured test results shall meet the test requirements in the relevant product standard.

8.2 Torque test after conditioning

8.2.1 Condition the test valve by maintaining it closed at the nominal internal pressure for the time required by the specific product standard.

8.2.2 Repeat the test described in **8.1.1** to **8.1.4**. The valve shall also meet the requirements of **8.1.5**.

8.2.3 Bidirectional valves shall be tested according to this procedure in both directions.

[1)] 1 bar = 10^5 Pa

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Table

Type	Nominal size[a] DN	Operating time[a,b] s	Operating speed r/min
Quarter-turn valves	$DN \leqslant 50$	2	—
	$DN > 50$	$\frac{DN}{30}$	—
Multiple-turn valves	$DN \leqslant 50$	—	≈ 20
	$DN > 50$	—	≈ 10

[a] For valves for piping systems sized on the basis of e.g. ISO 161-1, the value of the nominal outside diameter, expressed in millimetres, of the corresponding pipe is used in place of the value given for DN.

[b] If calculated, the operating time shall be rounded up to the nearest whole second.

9 Test report

A test report shall be provided for every valve tested and shall contain the following information:

a) reference to this International Standard and test designation (clause **8**);

b) complete identification of the valve type:

— material of the valve body and seals,

— nominal size (DN), socket diameter (D_1) or spigot diameter (nominal outside diameter)[2)],

— nominal pressure (PN) of the valve,

— manufacturer's name or trade-mark,

— if necessary, flow direction;

c) date of test;

d) recorded values of the opening and closing torque, before and after conditioning.

[2)] In accordance with ISO 161-1.

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National annex NA (informative)
Committees responsible

The United Kingdom participation in the preparation of this European Standard was entrusted by the Plastics and Rubber Standards Policy Committee (PRM/-) to Technical Committee PRM/61, upon which the following bodies were represented:

British Board of Agrément
British Gas plc
British Plastics Federation
British Plumbing Fittings Manufacturers' Association
British Valve and Actuator Manufacturers' Association
Department of the Environment (Property Services Agency)
Department of the Environment (Building Research Establishment)
Department of the Environment (Construction Directorate)
Department of Transport
Electricity Association
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