BS EN 15389:2008

Industrial valves — Performance characteristics of thermoplastic valves when used as construction products

ICS 91.140.70

National foreword

This British Standard is the UK implementation of EN 15389:2008.

The UK participation in its preparation was entrusted to Technical Committee PSE/7/16, Plastic valves.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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Industrial valves - Performance characteristics of thermoplastic valves when used as construction products

Robinetterie industrielle - Caractéristiques de performance des appareils de robinetterie thermoplastiques utilisés comme produits de construction

Industriearmaturen - Anforderungen an die Gebrauchstauglichkeit von Armaturen aus Thermoplasten bei Verwendung als Bauprodukte

This European Standard was approved by CEN on 18 April 2008.

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 CEN Management Centre or to any CEN member.

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Foreword

This document (EN 15389:2008) has been prepared by Technical Committee CEN/TC 69 “Industrial valves”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by November 2008, and conflicting national standards shall be withdrawn at the latest by November 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies performance requirements and means for evaluation of conformity for valves of thermoplastic material, by reference to product standards, for use in building and civil engineering applications for the delivery of liquid and gaseous fluids.

It also contains information required for the purposes of regulatory marking.

NOTE For information, thermoplastic valves in conformity with this European Standard should be considered suitable for drinking water applications subject to either:

a) compliance with any national regulations in the country of intended destination, which can include testing if this is the demonstration of fitness for drinking water applications;

b) internal coating of the Product and subsequent testing if required by the national regulations in the intended country of destination.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13501-1*, Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823*, Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN ISO 3126, *Plastics piping systems — Plastics components — Determination of dimensions (ISO 3126:2005)*

EN ISO 9001:2000, *Quality management systems — Requirements (ISO 9001:2000)*

EN ISO 9080*, Plastics piping and ducting systems — Determination of the long-term hydrostatic strength of thermoplastics materials in pipe form by extrapolation (ISO 9080:2003)*

EN ISO 12162, *Thermoplastics materials for pipes and fittings for pressure applications — Classification and designation — Overall service (design) coefficient (ISO 12162:1995)*

EN ISO 16135:2006*, Industrial valves — Ball valves of thermoplastics materials (ISO 16135:2006)*

EN ISO 16136:2006*, Industrial valves — Butterfly valves of thermoplastic materials (ISO 16136:2006)*

EN ISO 16137:2006*, Industrial valves — Check valves of thermoplastic materials (ISO 16137:2006)*

EN ISO 16138:2006*, Industrial valves — Diaphragm valves of thermoplastic materials (ISO 16138:2006)*

EN ISO 16139:2006*, Industrial valves — Gate valves of thermoplastic materials (ISO 16139:2006)*

EN ISO 21787:2006*, Industrial valves — Globe valves of thermoplastic materials (ISO 21787:2006)*

ISO 9393-2:2005*, Thermoplastics valves for industrial applications — Pressure test methods and requirements — Part 2: Test conditions and basic requirements*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
nominal size
DN
numerical designation of the size of a component, other than a component designated by thread size, which is a convenient round number approximately equal to the manufacturing dimension in millimetres (mm)

NOTE This can apply to either the internal diameter (DN/ID) or external diameter (DN/OD).

3.2
nominal outside diameter
d_n
specified diameter, in millimetres, assigned to a nominal size

3.3
nominal pressure
PN
numerical designation used for reference purposes related to the mechanical characteristics of the component of a piping system

NOTE For plastic piping systems conveying water it corresponds to the maximum continuous operating pressure in bar, which can be sustained with water at 20 °C for thermoplastics and 35 °C for thermosetting materials, based on the minimum design coefficient.

4 Performance requirements

4.1 Reaction to fire

Where subject to regulatory requirements, the product shall be tested and classified in accordance with 5.1.

4.2 External pressure strength

The external pressure strength of pressure piping systems is deemed to be satisfied by the internal pressure strength as given in 4.3.

4.3 Mechanical strength: Internal pressure strength

4.3.1 Determination of nominal pressure PN

For thermoplastics materials the internal pressure strength of thermoplastics valves shall be determined in accordance with 5.2 and shall be declared by the manufacturer as nominal pressure PN.

4.3.2 Verification of pressure strength

The verification of the internal pressure strength of thermoplastics valves shall be in accordance with 5.3.

4.4 Dimensional tolerances

The manufacturer shall declare the dimensional tolerances for thermoplastics valves and their connection dimensions by reference to the relevant specific European Product Standard as given in Annex A.
Dimensions shall be measured in accordance with 5.4 and shall be within the specified tolerances.

4.5 Effectiveness: tightness (gas and liquid)

Thermoplastics valves shall be tested in accordance with 5.5. No leakage shall occur during the test period.

4.6 Durability of valves

Thermoplastics valves meeting the requirements of this European Standard are deemed to have a reasonable economic working life.

NOTE The valves are expected to last at least the lifetime of the network where they are installed.

If the nature of the fluid is different from water or this fluid or water has a higher temperature than 20 °C, de-rating the pressure shall be in accordance with the following European Standard, as appropriate to the valve type: EN ISO 16135 to EN ISO 16139 and EN ISO 21787.

4.7 Dangerous substances

Materials used in products shall not release any dangerous substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the member state of destination.

NOTE Attention is drawn to NOTE 1 and NOTE 2 in ZA.1.

4.8 Resistance to high temperature

The resistance to high temperature shall be taken from the tabulated values listed in 4.3 of the valve product standards as given in EN ISO 16135:2006 to EN ISO 16139:2006 and EN ISO 21787:2006, as applicable.

4.9 Safeguard against overloading of handle

The safeguard against overloading of handle shall be tested in accordance with 5.7.

4.10 Noise level

The noise emission is dependent on the flow conditions in the pipe system; the manufacturer shall declare the maximum designed flow velocity for the pipe system in which his valve is tested and which is the basis of his declaration. The limitation shall be published in the relevant operating instruction.

NOTE The measurement of noise emission is a regulatory requirement in some, but not all, member states of the European Economic Area (EEA).

5 Calculation and test methods

5.1 Reaction to fire

Classification shall be in accordance with EN 13501-1.

If a higher classification than class E is required, testing shall be performed in accordance with EN 13823.

5.2 Determination of the nominal pressure PN for thermoplastics materials

For thermoplastics materials the nominal pressure PN shall be determined as follows:

a) determine the σ_{LPL} value in accordance with EN ISO 9080. Data provided by either the compound manufacturer or the product manufacturer shall be taken into account;

b) classify the material (MRS) in accordance with EN ISO 12162;

c) determine the PN for a chosen pipe series (SDR series) in accordance with ISO 9393-2:2005, Clauses 5 and 6.

5.3 Internal pressure strength

Internal pressure strength testing shall be in accordance with ISO 9393-2:2005, Clauses 5 and 6.

5.4 Dimensional tolerances

Shall be measured in accordance with EN ISO 3126.

5.5 Effectiveness: tightness gas and liquid

The leak tightness of thermoplastics valves shall be tested in accordance with ISO 9393-2:2005, Clause 7.

5.6 Durability

Thermoplastics Valves conforming with the requirements of this document and with a declared nominal pressure, which is determined according to 5.2 of this European Standard, shall be deemed to be durable for a reasonable economic working life.

5.7 Safeguard against overloading of handle

The Safeguard against overloading of handle shall be tested in accordance with 4.6.5 of the valve product standards as given in Annex A, as applicable.

6 Evaluation of conformity

6.1 General

The conformity of thermoplastics valves with the requirements of this European Standard and with the declared values (including classes) shall be demonstrated by:

— initial type testing;

— factory production control by the manufacturer, including product assessment.

For the purposes of testing, valves may be grouped into families, where it is considered that the results for one or more characteristics from any product within the family are representative for the same characteristics for all products within that family.

A product may be in more than one family for different characteristics.

For type testing the following family groups apply.

a) Size groups for valves as given in Table 1.

Table 1 — Size groups

Size group	Range of nominal diameters, d_n for thermoplastics material
1	DN ≤ 50
2	50 < DN ≤ 300
3	300 < DN

b) Type groups for valves as given in Table 2.

Table 2 — Type groups

Fitting group	Type of valves
1	Ball valves
2	Diaphragm valves
3	Butterfly valves
4	Other valves

6.2 Initial type testing

6.2.1 General

Type tests shall be carried out on new products and whenever there is a change in design, in material and/or in production method, other than routine in-process adjustment and extension of the product range (see Table 3). A change of supplier of a material or stabiliser does not lead to a change in performance if the chemical composition remains the same.

Material modifications within limits may be considered as a not change of material. The limits are as defined in the relevant material standards given in Annex B.

For tests previously performed in accordance with the provisions of the standards listed in Annex A, as applicable, (same product, same characteristic(s), same test method, same system of attestation, etc.) the results may be taken into account.

All characteristics given in Clause 4 shall be subject to calculation and/or initial type testing.

6.2.2 Initial type test requirements

The initial type testing of the characteristics according to Clause 4 shall be performed in accordance with the sampling procedure given in Table 3.

Table 3 — Type testing of valves

Essential characteristics	Requirement Clause of this European Standard	Testing relevant to [a]			Sampling procedure (minimum sampling)	Acceptance
		I	M	E		
Reaction to fire	4.1	+	+	—	Once/compound or formulation [b]	see classification in EN 13501-1
External pressure strength	4.2	+	+	+	See internal pressure strength	Pass/fail
Mechanical strength: Internal pressure strength	4.3	+	+	+	One diameter/size group/ valve type group/compound or formulation	Pass/fail
Dimensional tolerances	4.4	+	—	+	Once/size/valve/compound or formulation	Pass/fail
Effectiveness: tightness gas and liquid	4.5	+	+	+	One diameter/size group/ valve type	Pass/fail
Durability of valves	4.6	+	+	+	Once/compound or formulation	By the classification of the long-term strength performance
Dangerous substances	4.7	+	+	—	See notes in Table ZA.1	Pass/fail
Resistance to high temperature	4.8	+	+	+	One diameter/size group/ valve group	Declared values
Safeguard against overloading of handle	4.9	+	—	+	One diameter/size group/ valve group	Pass/fail
Noise level	4.10	+	—	+	One diameter/size group/ valve group	Noise emission declared as decibels

[a] I is initial type test in case of new system;
M is change of material;
E is extension of the product range with new size group or fitting group.
\+ denotes testing relevant for the characteristic-occurrence-combination.

[b] In case of single burning item (SBI) test the vertical part is size 110 and the horizontal part size 40, which is then representative for all dimensions.

Test reports shall be kept by the manufacturer for at least 10 years after discontinuation of the product.

6.3 Factory production control

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform to the stated performance characteristics. The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product.

If the manufacturer has the component designed, manufactured, assembled, packed, processed and labelled by subcontracting, FPC of the original manufacturer may be taken into account. However, where subcontracting takes place, the manufacturer shall retain the overall control of the component and ensure that

he receives all the information that is necessary to fulfil his responsibilities according to this European Standard. The manufacturer who subcontracts all of his activities may in no circumstances discharge himself of his responsibilities to a subcontractor.

All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures. This production control system documentation shall ensure a common understanding of conformity evaluation and enable the achievement of the required component characteristics and the effective operation of the production control system to be checked.

Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the conformity of the component with its technical specifications. Its implementation may be achieved by controls and tests on raw materials and constituents, processes, manufacturing equipment and finished components, including material properties in components, and by making use of the results thus obtained.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded and retained for the period specified in the manufacturers FPC procedures.

The specifications of all incoming raw materials and components shall be documented, and the inspection scheme for ensuring their conformity shall be established.

Manufacturers operating a quality system, which conforms to or is no less stringent than the relevant requirements of EN ISO 9001 and which is made specific to products covered by this European Standard shall be deemed to satisfy the FPC requirements of this European Standard.

6.3.2 FPC requirements

The FPC of the characteristics according to Clause 4 shall be performed in accordance with the sampling procedure given in Table 4.

Table 4 — Factory production control of valves

Essential characteristics	Requirement clause of this European Standard	Test method	Sampling procedure (minimum sampling)	Acceptance
Reaction to fire	4.1	Identification of compound or formulation	Once/batch	See classification in EN 13501-1
External pressure strength	4.2	See internal pressure strength	See internal pressure strength	Pass/fail
Mechanical strength: Internal pressure strength	4.3	Assembly control and/or final inspection	Once/batch	Pass/fail
Dimensional tolerances	4.4	EN ISO 3126 or according to the manufacturers quality plan	Once/batch	Pass/fail
Effectiveness. tightness gas and liquid	4.5	Indirect testing: see dimensional tolerances	Once/batch	Pass/fail
Durability of valves	4.6	Indirect testing: see internal pressure strength, and check of compound or formulation	Once/batch	Pass/fail
Dangerous substances	4.7	See notes in Table ZA.1	See notes in table ZA.1	Pass/fail
Resistance to high temperature	4.8	Identification of compound or formulation	Once/batch	Tabulated values
Safeguard against overloading of handle	4.9	Identification of compound or formulation	Once/batch	Pass/fail
Noise level	4.10	Identification of compound or formulation	Once/batch	Noise emission declared as decibels

6.3.3 FPC system requirements

6.3.3.1 Personnel

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product conformity, shall be defined. This applies in particular to personnel that need to initiate actions preventing product non-conformities from occurring, actions in case of non-conformities and to identify and register product conformity problems. Personnel performing work affecting product conformity shall be competent on the basis of appropriate education, training, skills and experience for which records shall be maintained.

6.3.3.2 Equipment

All weighing, measuring and testing equipment necessary to achieve, or produce evidence of, conformity shall be calibrated or verified and regularly inspected according to documented procedures, frequencies and criteria. Control of monitoring and measuring devices shall comply with the appropriate clause of EN ISO 9001:2000.

All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use, wear or failure do not cause inconsistency in the manufacturing process.

Inspections and maintenance shall be carried out and recorded in accordance with the manufacturer's written procedures and the records retained for the period defined in the manufacturer's FPC procedures.

6.3.3.3 Design process

The factory production control system shall document the various stages in the design of the products, identify the checking procedure and those individuals responsible for all stages of design.

During the design process itself, a record shall be kept of all checks, their results, and any corrective actions taken. This record shall be sufficiently detailed and accurate to demonstrate that all stages of the design phase, and all checks, have been carried out satisfactorily. Compliance with EN ISO 9001:2000, 7.3 shall be deemed to satisfy the requirements of this sub-clause.

6.3.3.4 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their conformity. The verification of conformity of the raw material with the specification shall be in accordance with EN ISO 9001:2000, 7.4.3.

6.3.3.5 In-process control

The manufacturer shall plan and carry out production under controlled conditions. Compliance with EN ISO 9001:2000, 7.5.1 and 7.5.2 shall be deemed to satisfy the requirements of this sub-clause.

6.3.3.6 Traceability and marking

Individual products and product batches shall be identifiable and traceable with regard to their production origin. The manufacturer shall have written procedures ensuring that processes related to affixing traceability codes and/or markings (see ZA.3) are inspected regularly. Compliance with EN ISO 9001:2000, 7.5.3 shall be deemed to satisfy the requirements of this sub-clause.

6.3.3.7 Non-conforming products

The manufacturer shall have written procedures which specify how non-conforming products shall be dealt with. Any such events shall be recorded as they occur and these records shall be kept for the period defined in the manufacturer's written procedures. Compliance with EN ISO 9001:2000, 8.3 shall be deemed to satisfy the requirements of this sub-clause.

6.3.3.8 Corrective action

The manufacturer shall have documented procedures that instigate action to eliminate the cause of non-conformities in order to prevent recurrence. Compliance with EN ISO 9001:2000, 8.5.2 shall be deemed to satisfy the requirements of this sub-clause.

6.3.3.9 Handling, storage and packaging

The manufacturer shall have procedures providing methods of product handling and shall provide suitable storage areas preventing damage or deterioration.

6.4 One-off products and products produced in very low quantities

Products produced as a one-off and products produced in very low quantities (less than 20 per year) are assessed as follows.

For initial type assessment, the provisions of Table 3 apply, with the following exceptions:

— for reaction to fire the classification of other products made out of the same compound or formulation may be used;

— external and internal pressure strength need not be tested. It may be assumed that by calculation of the defined geometry and material properties this requirement is fulfilled;

— durability need not be tested. Nevertheless the manufacturer shall declare the PN of its product according to the geometrical design and the used compound or formulation.

The FPC system of one-off products and products produced in very low quantities shall ensure that raw materials and/or components are sufficient for the product; the provisions of Table 4 apply when full and series production commences. The manufacturer shall maintain records allowing traceability of the product.

For prototypes where the intention is to move to series production, initial assessment of the factory and FPC shall be carried out before the production is running and/or before the FPC is in practice. The following shall be assessed:

— the FPC-documentation;

— the factory.

In the initial assessment of the factory and FPC it shall be verified:

a) that all resources necessary for the achievement of the product characteristics required by this European Standard can be available;

b) that the FPC-procedures in accordance with the FPC-documentation can be implemented and followed in practice;

c) that procedures are in place to demonstrate that the factory production processes can produce a valve complying with the requirements of this European Standard and that the valve will be the same as the initial type testing samples, for which compliance with this European Standard has been verified.

Annex A
(normative)

Product standards for building and civil engineering applications for the delivery of liquid and gaseous fluids

EN 1452-4:1999, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 4: Valves and ancillary equipment*

EN ISO 10931:2005, *Plastics piping systems for industrial applications — Poly(vinylidene fluoride) (PVDF) — Specifications for components and the system (ISO 10931:2005)*

EN 12201-4:2001, *Plastics piping systems for water supply — Polyethylene (PE) — Part 4: Valves*

EN 13244-4:2002, *Plastics piping systems for buried and above-ground pressure systems for water for general purposes, drainage and sewerage — Polyethylene (PE) — Part 4: Valves*

EN ISO 15493:2003, *Plastics piping systems for industrial applications — Acrylonitrile-butadiene-styrene (ABS), unplasticized poly(vinyl chloride) (PVC-U) and chlorinated poly(vinyl chloride) (PVC-C) — Specifications for components and piping systems — Metric series (ISO 15493:2003)*

EN ISO 15494:2003, *Plastics piping systems for industrial applications — Polybutene (PB), polyethylene (PE), polypropylene (PP) — Specifications for components and the system — Metric series (ISO 15494:2003)*

EN ISO 16135:2006, *Industrial valves — Ball valves of thermoplastics materials (ISO 16135:2006)*

EN ISO 16136:2006, *Industrial valves — Butterfly valves of thermoplastics materials (ISO 16136:2006)*

EN ISO 16137:2006, *Industrial valves — Check valves of thermoplastics materials (ISO 16137:2006)*

EN ISO 16138:2006, *Industrial valves — Diaphragm valves of thermoplastics materials (ISO 16138:2006)*

EN ISO 16139:2006, *Industrial valves — Gate valves of thermoplastics materials (ISO 16139:2006)*

EN ISO 21787:2006, *Industrial valves — Globe valves of thermoplastics materials (ISO 21787:2006)*

NOTE This list represents the situation at the time this document was published. It may be amended once new standards are developed.

Annex B
(normative)

Standards for assessment of conformity for building and civil engineering applications for the delivery of liquid and gaseous fluids

This Annex is normative as far as the assessment of conformity information contained in the listed standards and referred to in Clause 6 for the essential characteristics is concerned.

ENV 1452-7:2000, *Plastics piping systems for water supply — Unplasticized poly(vinyl chloride) (PVC-U) — Part 7: Guidance for the assessment of conformity*

CEN/TS 1456-2:2003, *Plastics piping systems for buried and above-ground drainage and sewerage under pressure — Unplasticized poly(vinyl chloride) (PVC-U) — Part 2: Guidance for the assessment of conformity*

CEN/TS 12201-7:2003, *Plastics piping systems for water supply — Polyethylene (PE) — Part 7: Guidance for the assessment of conformity*

CEN/TS 13244-7:2003, *Plastics piping systems for buried and above-ground pressure systems for water for general purposes, drainage and sewerage — Polyethylene (PE) — Part 7: Guidance for the assessment of conformity*

EN ISO 16135:2006, *Industrial valves — Ball valves of thermoplastics materials (ISO 16135:2006)*

EN ISO 16136:2006, *Industrial valves — Butterfly valves of thermoplastics materials (ISO 16136:2006)*

EN ISO 16137:2006, *Industrial valves — Check valves of thermoplastics materials (ISO 16137:2006)*

EN ISO 16138:2006, *Industrial valves — Diaphragm valves of thermoplastics materials (ISO 16138:2006)*

EN ISO 16139:2006, *Industrial valves — Gate valves of thermoplastics materials (ISO 16139:2006)*

EN ISO 21787:2006, *Industrial valves — Globe valves of thermoplastics materials (ISO 21787:2006)*

NOTE This list represents the situation at the time this document was published. It may be amended once new standards are developed.

Annex ZA
(informative)

Clauses of this European Standard addressing the provisions of EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/131 "Pipes, tanks and ancillaries not in contact with water intended for human consumption" given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this Annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the construction products covered by this Annex for their intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING: Other requirements and other EU Directives, not affecting the fitness for intended use, can be applicable to the construction products falling within the scope of this European Standard.

NOTE 1 In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Commission's CIRCA site "dangerous substances" (accessed through the responsible unit: http://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm)

This Annex has the same scope as Clause 1 of this standard with regard to the products covered. It establishes the conditions for the CE marking of valves made of plastics materials intended for the use indicated in Table ZA.1 and shows the relevant clauses applicable.

Table ZA.1 — Relevant clauses

Construction Product:	Valves made of plastics materials
Intended uses:	Building and civil engineering applications for the delivery of liquid and gaseous fluids

Essential characteristics	Requirement clauses of this standard	Levels and/or classes	Notes
Reaction to fire	4.1	A to F	See classification in EN 13501-1
External pressure strength	4.2	none	Pass/fail
Mechanical strength: internal pressure strength	4.3	none	Pass/fail
Dimensional tolerances	4.4	none	Pass/fail
Effectiveness. tightness gas and liquid	4.5	none	Pass/fail
Durability of valves	4.6	none	Classification of long-term strength performance
Dangerous substances	4.7	none	Awaiting the conclusions coming from M/336
Resistance to high temperature	4.8	none	Tabulated values
Safeguard against overloading of handle	4.9	none	Pass/fail
Noise level	4.10	none	Noise emission declared as decibels

The requirement on a certain characteristic is not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended end use of the product. In this case, manufacturers placing their products on the market of these MSs are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option “No performance determined” (NPD) in the information accompanying the CE marking (see ZA.3) may be used.

ZA.2 Procedure for attestation of conformity of valves made of thermoplastic materials

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity of plastics valves indicated in Table ZA.1, in accordance with the Decision of the European Commission (1999/472/EC and amendment 2001/596/EC) as given in Annex III of the mandate M/131 for pipes, tanks and ancillaries not in contact with water intended for human consumption, is shown in Table ZA.2 for the indicated intended uses and relevant levels or classes.

Table ZA.2 — Systems of attestation of conformity

Product(s)	Intended use(s)	Level(s) or class(es) *(Reaction to fire)*	Attestation of conformity system(s)
Valves	in installations in areas subject to resistance to fire regulations, and in installations in areas subject to reaction to fire regulations, used for the transport/distribution/storage of gas/fuel intended for the supply of building heating/cooling systems, from the external storage reservoir or the last pressure reduction unit of the network to the inlet of the boiler/heater/cooler system(s) of the building(s),	any	**1**
	in installations in areas subject to reaction to fire regulations, used for the transport/disposal/storage of water not intended for human consumption.	A1 [a], A2 [a], B [a], C [b], A1 [b], A2 [b], B [b], C [b], D, E, (A1 to E)[c], F	**1** **3** **4**
	in installations for the transport/distribution/storage of gas/fuel intended for the supply of building heating/cooling systems, from the external storage reservoir or the last pressure reduction unit of the network to the inlet of the boiler/heater/cooler system(s) of the building(s). in installations subject to regulation on Energy conservation, used for the transport/disposal/storage of water not intended for human consumption, and for heating systems.	—	**3**
	in installations for the transport/disposal/storage of water not intended for human consumption	—	**4**

System 1: See CPD Annex III.2.(I), without audit-testing of samples

System 3: See CPD Annex III.2 (ii), Second possibility

System 4: See CPD Annex III.2 (ii), Third possibility

[a] Products/materials for which a clearly identifiable stage in the production process results in an improvement in the reaction to fire classification (e.g. an addition of fire retardant or a limiting of organic material.

[b] Products/materials not covered by footnote a.

[c] Products/materials that do not require to be tested for reaction to fire (e.g. products/materials of Class A 1 according to the Decision 96/603/EC).

The attestation of conformity of plastics valves indicated in Table ZA.1 shall be according to the evaluation of conformity procedures indicated in Table ZA.3a, Table ZA.3b or Table ZA.3c, as applicable, resulting from the application of the clauses of this European Standard indicated therein.

Table ZA.3.a — Assignment of evaluation of conformity tasks for thermoplastic valves under system 1

Tasks		Content of task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all declared characteristics of Table ZA.1	6.3
	Initial type testing	Except for "reaction to fire", all declared characteristics of Table ZA.1	6.2
Task under the responsibility of the notified body	Factory production control (FPC)	Parameters related to Reaction to fire	6.2
	Initial type testing	Reaction to fire	6.2
The factory production control procedures for reaction to fire to be carried out by the manufacturer may be determined by agreement with the notified body.			

Table ZA.3.b — Assignment of evaluation of conformity tasks for thermoplastic valves under system 3

Tasks		Content of task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to all declared characteristics of Table ZA.1	6.3
	Initial type testing	Except for "reaction to fire", all declared characteristics of Table ZA.1	6.2
	Initial type testing by a notified body (laboratory)	Reaction to fire	6.2

Table ZA.3.c — Assignment of evaluation of conformity tasks for thermoplastic valves under system 4

Tasks		Content of task	Evaluation of conformity clauses to apply
Tasks for the manufacturer	Factory production control (FPC)	Parameters related to all declared characteristics of Table ZA.1	6.3
	Initial type testing	All declared characteristics of Table ZA.1	6.2

ZA.2.2 EC Certificate and Declaration of conformity

In case of products with system 1: When compliance with the conditions of this Annex is achieved, the certification body shall draw up a certificate of conformity (EC Certificate of conformity), which entitles the manufacturer to affix the CE marking. The certificate shall include:

— name, address and identification number of the certification body;

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use, ...);

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);

— the number of the certificate;

— conditions and period of validity of the certificate, where applicable;

— name of, and position held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up and retain a declaration of conformity (EC Declaration of conformity) including the following:

— name and address of the manufacturer, or his authorised representative established in the EEA;

— name and address of the certification body;

— description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking;

NOTE 2 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN), and a reference to the initial type test report(s) and factory production control records (if appropriate);

— particular conditions applicable to the use of the product (if necessary);

— number of the accompanying EC Certificate of conformity;

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

In case of products under system 3: When compliance with the conditions of this Annex is achieved, the manufacturer or his agent established in the EEA shall draw up and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 3 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

NOTE 4 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN), and a reference to the initial type test report(s) and factory production control records (if appropriate);

— particular conditions applicable to the use of the product, (if necessary);

— name and address of the notified laboratory(ies);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

In case of products under system 4: When compliance with this Annex is achieved, the manufacturer or his agent established in the EEA shall draw up and retain a declaration of conformity (EC Declaration of conformity), which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production;

NOTE 5 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use,...), and a copy of the information accompanying the CE marking;

NOTE 6 Where some of the information required for the declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this EN);

— particular conditions applicable to the use of the product (if necessary);

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative.

The above mentioned declaration and certificate shall be presented in the official language(s) or language(s) accepted in the Member State in which the product is to be used.

NOTE 7 Duplication of information between the declaration and certificates should be avoided. To avoid duplication of information, cross-reference between documents may be made when one contains more information than the other.

ZA.3 CE marking and labelling

ZA.3.1 CE marking requirements

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE-marking. The CE-marking symbol to affix shall be in accordance with Directive 93/68/EEC and shall be shown on the valves, or it may be on the accompanying label or on the packaging or on the accompanying commercial documents e.g. a delivery note.

NOTE 1 The CE marking symbol may be placed alone on the product, but all other information including CE marking symbol shall appear in at least one location.

The following information shall accompany the CE marking symbol (where relevant):

— identification number of the certification body (only for products under system 1);

— name or identifying mark of the manufacturer (see Note 1 in ZA.2.2);

— number of the EC Certificate of conformity (only for products under system 1);

— the last two digits of the year in which the CE marking was affixed;

— reference to this European Standard;

— description of the product: generic name, material, dimensions, ... and intended use (may be by code or by reference to a specification);

— information on those relevant essential characteristics listed in Table ZA.1 which are to be declared:

  — declared values and, where relevant, level or class (including “pass” for pass/fail requirements, where necessary) to declare for each essential characteristic as indicated in "Notes" in Table ZA.1;

  — “No performance determined” for characteristics where this is relevant;

  — as an alternative, a standard designation which shows some or all of the relevant characteristics (where the designation covers only some characteristics, it will need to be supplemented with declared values for other characteristics as above).

The "No performance determined" NPD option may not be used where the characteristic is subject to a threshold level. Otherwise, the NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements in the Member State of destination.

Figure ZA.1 gives an example of the information to be given on the product, label, packaging and/or commercial documents.

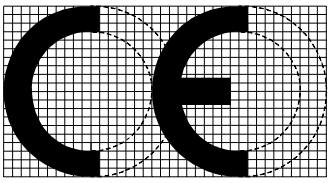 01234	CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC. Identification number of the certification body (where relevant, see NOTE 2)
AnyCo Ltd, PO Box 21, B-1050 Brussels	Name or identifying mark and registered address of the manufacturer
08	Last two digits of the year in which the marking was affixed
01234-CPD-00234	Certificate number (where relevant, see NOTE 3)
EN 15389	Number of this European Standard
Ball valve of PVC-U	Name and material
DN 50 PN 10 P	Dimension PN
	Intended use (may be by code or by reference to a specification). See CEN/TR 15438:2007 [1] for guidance.
Reaction to fire — Class F External pressure strength — pass Mechanical strength — pass Dimensional tolerances (EN ISO 16135) — pass Effectiveness: Tightness — pass Durability of valves — pass Resistance to high temperature — 0,35 Safeguard against overloading of handle — pass Noise level — 15db (1) awaiting the conclusions coming from M/336	Information on regulated characteristics

Figure ZA.1 — Example of CE marking information

NOTE 2 The identification of the notified body is only relevant for system 1.

NOTE 3 Reference to the Certificate number can only be made under system 1.

In addition to any specific information relating to dangerous substances, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE 4 European legislation without national derogations need not be mentioned.

ZA.3.2 Simplified CE marking with reference to a web site

ZA.3.2.1 General

In situations when a manufacturer wants to use a web site to provide part of the information required for CE marking as given in ZA.3.1 then a simplified CE marking may be used and affixed on the product itself, on a label attached to it, on its packaging or on the accompanying commercial documents.

Such simplified CE marking shall contain all information mentioned in ZA.3.1 except the information on relevant essential characteristics listed in Table ZA.1. Instead of this list of characteristics an unambiguous reference shall be used allowing the declared performances for this specific product to be obtained. The minimum rules for the proper use of a web site for the CE marking, complementing the simplified CE marking information are given in ZA.3.2.2.

These references shall be:

— the address of a web site providing the information on the characteristics;

— a unique, unambiguous reference, permitting to retrieve the complete information required in ZA.3.1 belonging to the product to which the simplified CE marking is affixed. When products are modified leading to changes in performances, this shall be clearly identifiable.

In addition the following minimum information shall be specified on the simplified CE marking (where relevant):

— identification number of the certification body (only for products under system 1);

— name or identifying mark of the manufacturer (see Note 1 in ZA.2.2);

— number of the EC Certificate of conformity (only for products under system 1);

— the last two digits of the year in which the CE marking was affixed;

— reference to this European Standard;

— material (may be by code or by reference to a specification);

— dimensions;

— declared performance of the product: strength, level or class (where relevant);

— intended use (may be in codified format or by reference to a product specification, etc.).

Figure ZA.2 gives an example of the short format information to be given on the product, label, packaging and/or commercial documents.

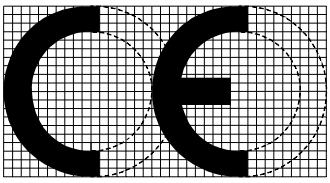 01234	CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC. Identification number of the certification body (where relevant, see NOTE 1)
AnyCo Ltd www.anyco.com **08** 01234-CPD-00234	Name or identifying mark of the manufacturer Web site address to access further information Last two digits of the year in which the marking was affixed Certificate number (where relevant, see NOTE 2)
EN 15389	Number of this European Standard
Ball valve of PVC-U DN 50 PN 10 P	Name and material Dimension PN Intended use (may be by code or by reference to a specification). See CEN/TR 15438:2007 [1] for guidance.
www.anyco.com/ce/ (Tracking reference)	Accurate unique, unambiguous reference to the part of the website where the characteristics ot Table ZA.1 are given (see Note 3)

Figure ZA.2 — Example of CE marking information with a link to a web site

NOTE 1 The identification of the notified body is only relevant for system 1.

NOTE 2 Reference to the Certificate number can only be made under system 1.

NOTE 3 The tracking reference can be by reference to e.g. "Catalogue 2007/1" or "Code and Batch number" of the product etc. It is up to the manufacturer to define its tracking reference of the product.

In addition to any specific information relating to dangerous substances, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE 4 European legislation without national derogations need not be mentioned.

ZA.3.2.2 Minimum rules for the proper use of a web site for CE marking information

When the conditions set in ZA.3.2.1 are met, the requirements permitting the use of a web site should comply with the following provisions:

— With the unique, unambiguous reference given on the simplified label for CE marking, the complete CE marking information as given in ZA.3.1 for this specific product shall be provided;

— Website information on CE marking shall be suitably protected, preventing modification of data by external parties;

— Website information shall be dated;

— As far as the unique, unambiguous reference of the product is concerned the information shown on the simplified version of the CE marking shall be at all times coherent with the information on the web site. Changes to the CE marking information on the web site shall be reflected by a new unique, unambiguous reference of the product and consequently by a new simplified CE marking;

— The web site shall allow printing the data. The print outs shall clearly reproduce all data accompanying the CE symbol as given in ZA.3.1 and the web site address;

— Access to web sites, which shall allow consultation with all possible internet browsers, shall be available at all times (except for short maintenance periods);

— Web site data management shall be subject to a manufacturer's procedure, ensuring that internal responsibilities as regards the data on the website are laid down.

Bibliography

[1] CEN/TR 15438:2007, *Plastics piping systems — Guidance for coding of products and their intended uses*

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