



EUROPEAN ASSESSMENT DOCUMENT

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FLANGED BALANCING VALVES

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This European Assessment Document (EAD) has been developed taking into account available up-to-date technical and scientific knowledge at the time of issue and is established in accordance with the relevant provisions of Regulation (EU) 305/2011 as a basis for the preparation and issuing of European Technical Assessments (ETA).

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1 SCOPE OF THE EAD

1.1 Description of the construction product

This EAD applies to flanged balancing valves with circular connections.

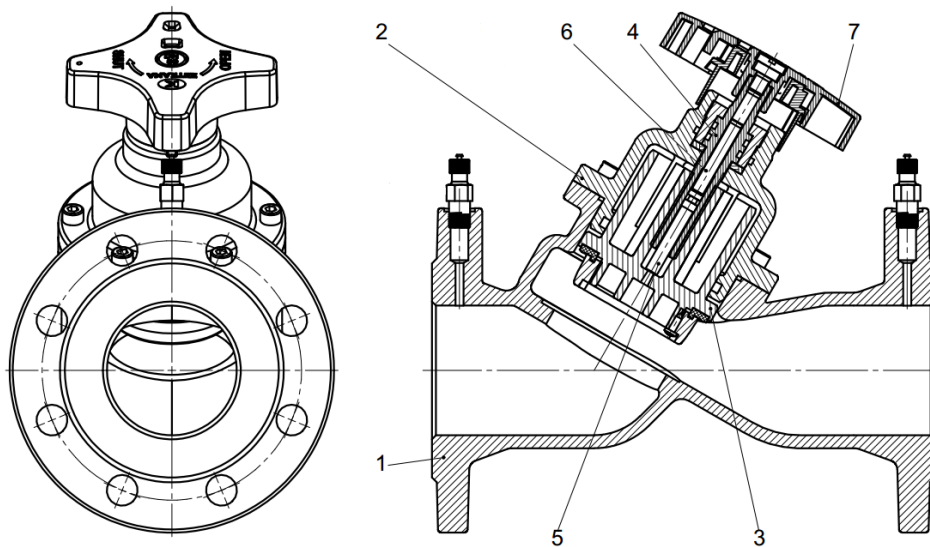
The product is not covered by a harmonised European standard (hEN).

The product falls also under the Directive 2014/68/EU and is covered by EN 12266-1:2012, which is a harmonised standard under the Directive 2014/68/EU. The essential characteristic “shell strength” relevant for the Directive 2014/68/EU is not covered by this EAD.

Flanged balancing valves are made of materials listed below:

- cast iron,
- ductile iron,
- brass,
- other materials resistant to corrosion.

Balancing valve is used to establish the flows in various parts of the system. Schematic drawing of construction of flanged balancing valve is shown in Figure 1.



Key: 1 – body, 2 – bonnet, 3 – disc, 4 – stem, 5 – open limiter, 6 – tap screw, 7 – hand wheel

Figure 1. Schematic drawing of the flanged balancing valve

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise his clients on the transport, storage, maintenance, replacement and repair of the product as he considers necessary.

It is assumed that the product will be installed according to the manufacturer’s instructions or (in absence of such instructions) according to the usual practice of the building professionals.

Relevant manufacturer’s stipulations having influence on the performance of the product covered by this European Assessment Document, shall be considered for the determination of the performance and detailed in the ETA.

1.2 Information on the intended use(s) of the construction product

1.2.1 Intended use(s)

Flanged balancing valves are intended to use for the distribution medium in heating and HVAC (solutions of ethylene and propylene glycol in water) systems and other non-aggressive medium installations inside buildings. Balancing valves can be assembled on supply or return lines.

The operating temperature is -10 °C up to a maximum of +120 °C and maximum operating pressure is 1,6 MPa.

1.2.2 Working life/Durability

The assessment methods included or referred to in this EAD have been written based on the manufacturer's request to take into account a working life of the flanged balancing valves for the intended use of 10 years when installed in the works. These provisions are based upon the current state of the art and the available knowledge and experience.

When assessing the product, the intended use as foreseen by the manufacturer shall be taken into account. The real working life may be, in normal use conditions, considerably longer without major degradation affecting the basic requirements for works¹.

The indications given as to the working life of the construction product cannot be interpreted as a guarantee neither given by the product manufacturer or his representative nor by EOTA when drafting this EAD nor by the Technical Assessment Body issuing an ETA based on this EAD, but are regarded only as a means for expressing the expected economically reasonable working life of the product.

¹ The real working life of a product incorporated in a specific works depends on the environmental conditions to which that works is subject, as well as on the particular conditions of the design, execution, use and maintenance of that works. Therefore, it cannot be excluded that in certain cases the real working life of the product may also be shorter than the assumed working life.

2 ESSENTIAL CHARACTERISTICS AND RELEVANT ASSESSMENT METHODS AND CRITERIA

2.1 Essential characteristics of the product

Table 2.1 shows how the performance of the flanged balancing valves is assessed in relation to the essential characteristics.

Table 2.1 Essential characteristics of the product and methods and criteria for assessing the performance of the product in relation to those essential characteristics

No	Essential characteristic	Method of verification and assessment	Type of expression of product performance
Basic Works Requirement 2: Safety in case of fire			
1	Reaction to fire	2.2.1	Class
Basic Works Requirement 4: Safety and accessibility in use			
2	Leak tightness of valve body	2.2.2	Description
3	Hydraulic characteristics	2.2.3	Level
4	Watertightness of the closure	2.2.4	Description
Basic Works Requirement 5: Protection against noise			
5	Noise emission	2.2.5	Level
Aspects of durability linked with the Basic Works Requirements			
6	Durability	2.2.6	Description

2.2 Methods and criteria for assessing the performance of the product in relation to essential characteristics of the product

This chapter is intended to provide instructions for TABs. Therefore, the use of wordings such as “shall be stated in the ETA” or “it has to be given in the ETA” shall be understood only as such instructions for TABs on how results of assessments shall be presented in the ETA. Such wordings do not impose any obligations for the manufacturer and the TAB shall not carry out the assessment of the performance in relation to a given essential characteristic when the manufacturer does not wish to declare this performance in the Declaration of Performance.

2.2.1 Reaction to fire

The flanged balancing valves are considered to satisfy the requirements for performance class A1 of the characteristic reaction to fire in accordance with the Decision 96/603/EC amended by the Decision 2000/605/EC without the need for testing on the basis of it fulfilling the conditions set out in that Decision and its intended use being covered by that Decision.

The class A1 shall be stated in the ETA.

2.2.2 Leak tightness of valve body

The leak tightness of valve body shall be determined in accordance with EN 12266-1:2012, Annex A.3.

In the ETA shall be stated that no failure or leakage during the test was observed.

2.2.3 Hydraulic characteristics

The hydraulic characteristics (flow coefficients K_v) shall be determined in accordance with EN 1267:2012.

The flow coefficients K_v shall be stated in the ETA.

2.2.4 Watertightness of the closure

The watertightness of the closure shall be determined in accordance with EN 12266-1:2012, Annex A.4.

In the ETA shall be stated that no failure or leakage during the test was observed.

2.2.5 Noise emission

The noise emission shall be determined as appliance sound pressure level L_{ap} in accordance with EN ISO 3822-1:1999.

The appliance sound pressure level L_{ap} (expressed in decibels) shall be stated in the ETA.

2.2.6 Durability

The durability shall be determined in accordance with EN 1074-2:2000, Annex D.

In the ETA shall be stated that no failure or leakage during the test was observed.

3 ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

3.1 System(s) of assessment and verification of constancy of performance to be applied

For the products covered by this EAD the applicable European legal act is: Decision 1999/472/EC amended by the Decision 2001/596/EC.

The system is: 4.

3.2 Tasks of the manufacturer

The cornerstones of the actions to be undertaken by the manufacturer of the flanged balancing valves in the procedure of assessment and verification of constancy of performance are laid down in Table 3.2.

Table 3.2 Control plan for the manufacturer; cornerstones

No	Subject/type of control	Test or control method	Criteria, if any	Minimum number of samples	Minimum frequency of control
Factory production control (FPC) [including testing of samples taken at the factory in accordance with a prescribed test plan]					
1	Raw materials	Checking of delivery documentation	Compliance with required materials	-	Each melt
2	Appearance	Visual examination	No cracks, scratches and surface defects	3	Each melt
3	Dimensional tolerances	Measurement using universal devices	Laid down in the control plan	1	Every 100 th product
4	Leak tightness of valve body	EN 12266-1:2012 Annex A.3	2.2.2	1	Every 20 th product
5	Watertightness of the closure	EN 12266-1:2012 Annex A.4	2.2.4	1	Every 20 th product
6	Durability	EN 1074-2:2000 Annex D	2.2.5	1	EN 1074-1:2000 p. 6.2

4 REFERENCE DOCUMENTS

Directive 2014/68/EU of the European Parliament and of the Council of 15 May 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment

EN 1267:2012	Industrial valves. Test of flow resistance using water as test fluid
EN 12266-1:2012	Industrial valves. Testing of metallic valves. Pressure tests, test procedures and acceptance criteria. Mandatory requirements
EN 1074-1:2000	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. General requirements
EN 1074-2:2000	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Part 2: Isolating valves
EN ISO 3822-1:1999	Acoustics. Laboratory tests on noise emission from appliances and equipment used in water supply installations. Method of measurement