BS EN 13407:2015

BSI Standards Publication

Wall-hung urinals — Functional requirements and test methods

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National foreword

This British Standard is the UK implementation of EN 13407:2015. It supersedes BS EN 13407:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/503, Sanitary appliances.

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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Compliance with a British Standard cannot confer immunity from legal obligations.

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Wall-hung urinals - Functional requirements and test methods

Urinoirs muraux - Prescriptions fonctionnelles et méthodes d'essai

Wandhängende Urinale - Funktionsanforderungen und Prüfverfahren

This European Standard was approved by CEN on 5 June 2015.

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European foreword

This document (EN 13407:2015) has been prepared by Technical Committee CEN/TC 163 “Sanitary appliances”, the secretariat of which is held by UNI.

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of an identical text or by endorsement, at the latest by January 2016 and conflicting national standards shall be withdrawn at the latest by April 2017.

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 supersedes EN 13407:2006.

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 the EU Construction Products Regulation.

For relationship with EU Construction Products Regulation, see informative Annex ZA, which is an integral part of this document.

Since the latest version of EN 13407, the most significant technical changes are the following:

a) the introduction of term “product type”;

b) the introduction of the clause “Dangerous substances”;

c) the modification of the marking of products;

d) the replacement of clause “Evaluation of conformity” by “Assessment and verification of constancy of performance – AVCP” and replacement of Annex ZA by a new one in accordance with provisions of Regulation 305/2011.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies constructional and performance requirements together with test methods for wall-hung urinals made of vitreous china or stainless steel that are used for personal hygiene.

This European Standard does not apply to slab and stall urinals nor to waterless urinals.

2 Normative references

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

EN 80, *Wall-hung urinals — Connecting dimensions*

EN 274-1, *Waste fittings for sanitary appliances — Part 1: Requirements*

EN 12056-2, *Gravity drainage systems inside buildings — Part 2: Sanitary pipework, layout and calculation*

3 Terms and definitions

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

3.1
wall-hung urinal
sanitary appliance comprising a bowl to be fixed to a wall, for receiving urine and water used for flushing and directing both into a drainage system

Note 1 to entry: See Figure 1:

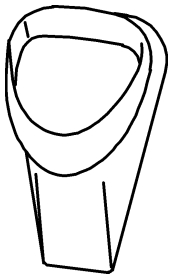


Figure 1 — Wall-hung urinal

3.2
slab urinal
sanitary appliance comprising a floor channel and a slab or sheet fixed to a wall, for receiving urine and water used for flushing and directing both into a drainage system

Note 1 to entry: See Figure 2:

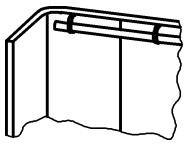


Figure 2 — Slab urinal

3.3
stall urinal
sanitary appliance for receiving and directing urine and water used for flushing to the drainage system consisting of a floor-mounted stall secured to a wall with an integral outlet

Note 1 to entry: See Figure 3:

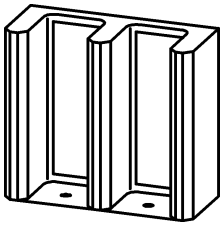


Figure 3 — Stall urinal

3.4
urinal with siphonic action
urinal in which urine is removed by siphonage (suction) induced by flushing water flowing through either an integral trap or a dedicated separate trap assembled in accordance with the manufacturer's instruction

3.5
wash-down urinal
non-siphonic acting urinal with or without integral trap

3.6
waterless urinal
sanitary appliance for receiving urine and directing it into a drainage system, which functions without the use of water

3.7
flushing cistern
cistern for storage and discharge of a defined volume of flushing water for removal of urine from urinals

3.8
flush valve
valve connected directly to a water supply, which delivers a pre-determined volume of flushing water for removal of urine from a urinal

3.9
cleanability
characteristics which allow surfaces intended to come into contact with water and/or urine and cleansing materials to be visibly smooth, non-absorbent and free from acute internal corners, such that they can be kept visibly free from dirt and/or stains when subject to a regular maintenance regime, which may include, when appropriate, specific instructions for use and care specified by the manufacturer

3.10
product type
construction product with a set of representative performance levels or classes in relation to its Essential Characteristics, produced using a given combination of raw materials or other elements in a specific production process

4 Principles of design

4.1 General

Wall-hung urinals in accordance with Table 1 shall meet the following requirements:

— for connection to supply and drainage systems the connecting dimensions shall be in accordance with EN 80 or the manufacturer shall provide or recommend necessary auxiliary components;

— wall-hung urinals shall function with flushing device(s) supplying flushing volumes and/or flow rates as specified by the manufacturer in accordance with Table 2.

Table 1 — Types of wall-hung urinals

Type	Construction
I	Siphonic action urinal with flushing rim and with integral trap or with dedicated trap specified by the manufacturer
II	Wash-down urinal with or without flushing rim and with integral trap or with dedicated trap specified by the manufacturer
III	Wash-down urinal with or without flushing rim and without dedicated trap
IV	Urinal of type I, II or III with dedicated flushing device specified by the manufacturer

4.2 Flushing volume and flow rate

The flushing volumes and flow rates for particular flushing devices shall be as given in Table 2.

Table 2 — Flushing devices, volumes and flow rate

<table>
<tr><td rowspan="3">Type of urinal</td><td colspan="3">Flushing device for testing</td></tr>
<tr><td colspan="2">Flush valve (C) in accordance with Annex A</td><td>Manually operated flushing cistern (A) in accordance with Annex B</td><td>Automatic flushing cistern (B) in accordance with Annex C</td></tr>
<tr><td>Flushing volume
l</td><td>Flow rate
l/s</td><td>Flushing volume
l</td><td>Flushing volume
l</td></tr>
<tr><td>I</td><td rowspan="4">> 0,5 ≤ 5,0</td><td>$0{,}5\ ^{+0{,}1}_{-0{,}2}$</td><td rowspan="4">> 0,5 ≤ 5,0</td><td rowspan="3">—</td></tr>
<tr><td>II</td><td>$0{,}2\ ^{+0{,}2}_{-0{,}1}$</td></tr>
<tr><td>III</td><td>≤ 0,2</td><td rowspan="2">> 0,5 ≤ 4,5</td></tr>
<tr><td>IV</td><td>$0{,}5\ ^{+0{,}1}_{-0{,}4}$</td></tr>
</table>

5 Classification

Wall-hung urinals are classified as described below:

— Class 1: Wall-hung urinals intended to be installed in drainage systems of type I, II or IV in accordance with EN 12056-2 and tested in accordance with Clause 6.

— Class 2: Wall-hung urinals intended to be installed in drainage systems of type III in accordance with EN 12056-2 and tested in accordance with Clause 7.

6 Functional requirements and test methods for class 1 products

6.1 Depth of water seal

When tested as described in 6.6.1.2, the depth of water seal in urinals of types I and II shall be not less than 50 mm. Ensure that the trap will be re-filled up to not less than 50 mm.

Traps in accordance with EN 274-1 are exempted from this test.

6.2 Flushing requirements

6.2.1 Wash of bowl

When tested as described in 6.6.1.3.1, the arithmetic average of any un-flushed area of the surface to be tested shall not be greater than 80 cm^2 after five flushing operations.

The surface to be tested is defined as described below:

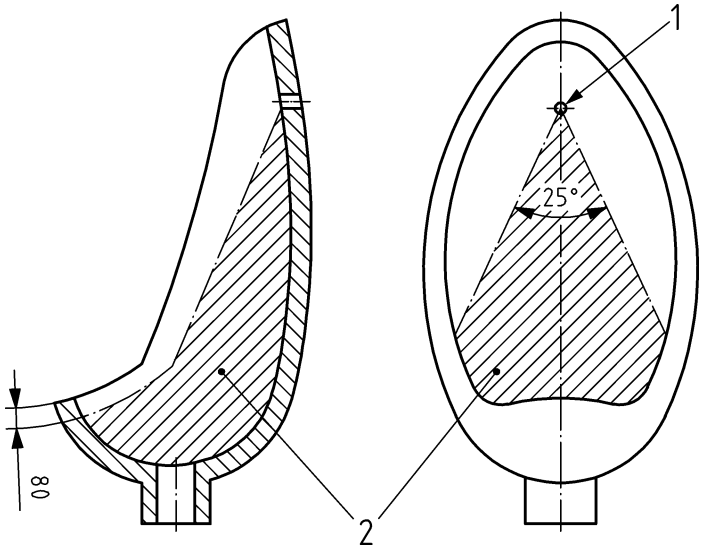
a) for urinals with flushing rim: the area below the flushing rim and above the water surface in the trap;

b) for urinals without flushing rim: the surface enclosed by:

   1) an angle of 25° on the surface of urinal beginning from the central point of the water inflow, and

   2) a line in a distance of 80 mm from the edge of the bowl (see Figure 4).

Dimensions in millimetres



Key

1 spreader or central inlet hole

2 surface to be tested

Figure 4 — Surface to be tested for urinals without flushing rim flushed by a spreader or inlet holes

6.2.2 Flushing of three plastics balls

When tested as described in 6.6.1.3.2, at least two plastics balls shall be flushed out of the trap of the urinal in each of five separate flushing operations with three balls.

When tested as described in 6.6.1.3.2, type I urinals shall flush with a siphonic action when not connected to the drainage pipe.

Urinals of types II and III are excluded from this test.

6.2.3 Oversplashing

When tested as described in 6.6.1.3.3, the flushing water shall not splash beyond the edge of the bowl and wet the floor. Only a few small drops on the floor are permissible.

6.2.4 Discharge

When tested as described in 6.6.1.3.4, no flushing water shall run over the rim of the bowl.

6.3 Water absorption

When tested as described in 6.6.2, the arithmetic average for water absorption of glazed ceramic urinals shall not exceed 0,75 % by mass where no individual value shall exceed 1,00 %.

Experience has shown that urinals made of stainless steel comply with this requirement.

6.4 Load resistance

When tested in accordance with 6.6.3, the wall-hung urinal shall not crack, become detached from the wall or show permanent distortion.

6.5 Durability of class 1 products

Class 1 products conforming with the requirements of 6.1 to 6.4 are deemed to be durable.

6.6 Test methods

6.6.1 Testing the depth of water seal and flushing tests

6.6.1.1 General

For testing the depth of water seal and flushing requirements with the device(s) indicated by the manufacturer, i.e. a flush valve in accordance with Annex A and/or with a flushing cistern in accordance with either Annex B or Annex C, install the urinal to be tested in accordance with the manufacturer's instructions on a firm flat vertical surface and connect the water inlet and the trap.

The flow rate shall be adjusted in accordance with the manufacturer's specification.

6.6.1.2 Depth of water seal

Fill the trap with water by flushing twice. After the second flush, check that the trap complies with 6.1.

6.6.1.3 Flushing tests

6.6.1.3.1 Sawdust test

6.6.1.3.1.1 Test apparatus

For urinals without rim, a template made of a flexible sheet in accordance with Figure 5.

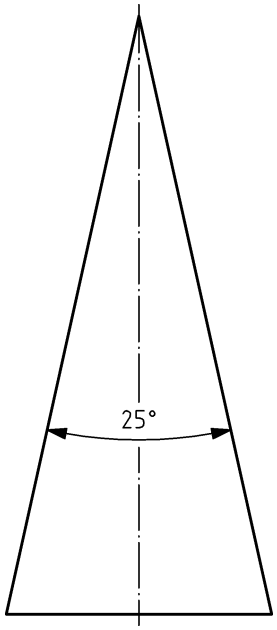


Figure 5 — Template for testing urinals without flushing rim

6.6.1.3.1.2 Test material

20 g of fine dry wood sawdust.

6.6.1.3.1.3 Method

For urinals without rim draw the perimeter of the surface to be tested (see Figure 4) using the template and a water resistant ink.

Moisten the surface to be tested of all types of urinals. Immediately afterwards, sprinkle the sawdust as completely and evenly as possible over the moistened surface.

Flush the urinal with the flushing volume and/or flow rate indicated by the manufacturer and measure any un-flushed area of the surface to be tested.

Perform this procedure five times and check the compliance with 6.2.1.

6.6.1.3.2 Flushing of three plastics balls

6.6.1.3.2.1 Test material

Three balls of non-absorbent material, e.g. polyethylene, each having a mass of (3,7 ± 0,2) g and a diameter of (20 ± 0,2) mm[1)].

6.6.1.3.2.2 Method

For each flushing operation place the three balls into the urinal. Without the urinal being connected to a drainage pipe, flush the urinal with the flushing volume and/or flow rate specified by the manufacturer. Verify that the balls are flushed out of the trap of the urinal. Remove any balls left in the urinal or its trap.

Perform the test five times, checking for compliance with the requirements of 6.2.2 each time.

6.6.1.3.3 Oversplashing test

Using the flushing device(s) with the maximum volume for flushing cistern and maximum flow rate for flush valve in accordance with Table 2, flush the urinal and record any visible evidence of water on the floor in the area below.

6.6.1.3.4 Discharge

The test is made with the maximum flow rate in accordance with Table 2 for a minimum of 2 min in the case of a flush being provided by a flush valve, and with the maximum flushing volume in accordance with Table 2 in the case of a flush being provided by a flushing cistern in accordance with 4.2.

Record any evidence of water flowing over the rim of the bowl.

6.6.2 Determination of water absorption

6.6.2.1 Test apparatus

6.6.2.1.1 Balance accurate to 0,05 g.

6.6.2.1.2 Oven controlled at a test temperature of (105 ± 2) °C.

6.6.2.1.3 Desiccator with fresh prepared silica gel.

6.6.2.1.4 Chamois leather and a fine brush.

6.6.2.1.5 Heated bath with constant water level.

6.6.2.1.6 Deionized water.

6.6.2.1.7 Pair of fine tweezers.

6.6.2.2 Method

— Break three samples glazed on one face from the urinal. The unglazed surface area of the samples shall be approximately 30 cm^2 and the thickness shall be not greater than 12 mm including the glaze.

— Dry the samples at a temperature of 105 °C for (180 ± 5) min.

1) Suitable balls are available from Gebauer GmbH, Kugelfabrik, P.O. Box 425, 36004 Fulda, Germany, or CIMAP, Avenue Paul Adam 21 – 25, 75017 Paris, France. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of these products.

— Allow the samples to cool in the desiccator.

— Weigh each sample to an accuracy of 0,05 g; this mass is m_0.

— Using the fine tweezers place the samples in the bath and fill with deionized water. Ensure they do not touch the sides or the bottom of the bath.

— Heat the water to boiling point for (120 ± 5) min. At the end of this period stop the heating procedure and leave the samples immersed for a further (20 ± 1) h.

— Using the fine tweezers take the samples from the water and dry them immediately with the slightly dampened chamois leather. Any cavities or holes shall be dried using the fine brush.

— Weigh each sample immediately; this mass is m_1.

— Calculate for each sample its water absorption WA in percentage using Formula (1):

$$WA = \frac{m_1 - m_0}{m_0} 100 \quad (1)$$

6.6.3 Static load test

Install the urinal in accordance with the manufacturer's instructions onto a smooth vertical surface with a layer of mortar or other facing material used for pointing between the back of the urinal and the smooth surface.

A vertical force of (1,00 ± 0,01) kN shall be applied for a period of 1 h on the middle of the front edge (see Figure 6).

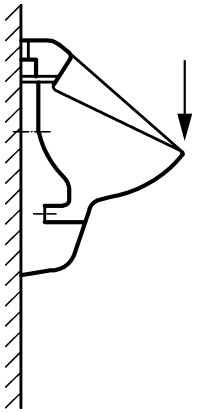


Figure 6 — Load test

7 Functional requirements and test methods for class 2 products

7.1 Depth of water seal

When tested as described in 7.5.1, the depth of water seal of urinals of types I, II and IV shall be not less than 75 mm. Ensure that the trap will be re-filled up to not less than 75 mm.

Traps in accordance with EN 274-1 are exempted from this test.

7.2 Cleanability

When tested in accordance with 7.5.2, wall-hung urinals shall have smooth and readily cleansed non-absorbent functional surfaces which are free from acute internal corners which would be difficult to clean, i.e. surfaces intended to or likely to come into contact with water and/or urine during use and cleaning.

NOTE Functional surfaces do not include inlet and outlet holes, outlet grills, etc.

7.3 Load resistance

When tested in accordance with 6.6.3, class 2 products shall meet the requirements of 6.4.

7.4 Durability of class 2 products

Class 2 products confirming the requirements of 7.1 to 7.3 are deemed to be durable.

7.5 Test methods

7.5.1 Depth of water seal

Install the urinal to be tested as described in 6.6.1.1.

Fill the trap with water by flushing twice. After the second flush check the compliance with 7.1.

7.5.2 Cleanability

— Visually examine the functional surfaces of the wall-hung urinals using a suitable light source.

— Record any failure to comply with 7.2.

Imperfections that do not affect the functionality of the surface shall not constitute a failure.

8 Dangerous substances

National regulations on dangerous substances may require verification and declaration on release, and sometimes content, when construction products covered by this standard are placed on those markets.

In the absence of European harmonized test methods, verification and declaration on release/content should be done taking into account national provisions in the place of use.

NOTE An informative database covering European and national provisions on dangerous substances is available at the Construction website on EUROPA.

9 Marking

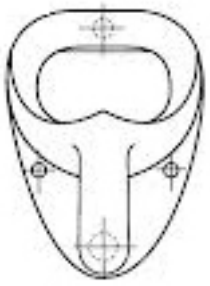
The intended use of wall-hung urinals is personal hygiene in accordance with the scope of this standard.

NOTE The intended use is also mentioned in Annex ZA, Tables ZA.1.1 and ZA.1.2. The abbreviation “PH” for the intended use personal hygiene might be used for CE marking.

A schematic drawing of the product may optionally follow the abbreviation for personal hygiene.

EXAMPLE 1 Use of full text: personal hygiene.

EXAMPLE 2 Use of abbreviation: PH.



EXAMPLE 3 Use of the abbreviation and the optional schematic drawing: PH

Wall-hung urinals belong always to one class and type at least. For each class and type a set of requirements to be tested (see 10.2.2) is defined. Due to this a wall-hung urinal can be described with a designation code which includes all fulfilled essential requirements.

The relevant product characteristics and the Essential Characteristics for wall-hung urinals including their abbreviations are given in Tables 3 and 4.

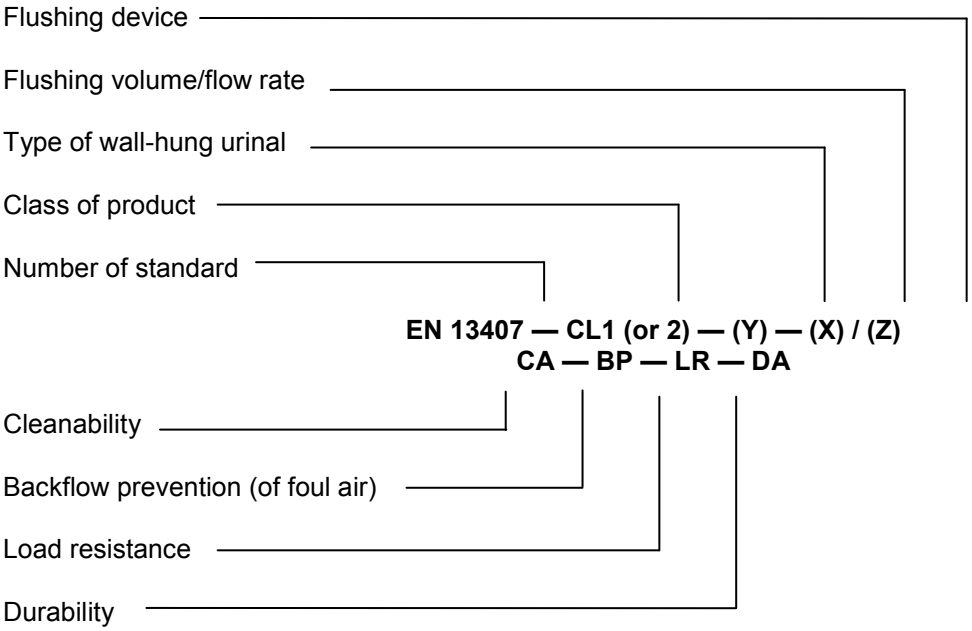
Table 3 — Characteristics and abbreviations for class 1 products

Abbreviation	Characteristics
EN 13407	Number of European standard for wall-hung urinals for product description
CL 1	Class 1 product in accordance with Clause 6
(Y)	Type of urinal (I, II, III or IV) in accordance with Table 1
(X)	Flushing volume and optionally flow rate specified by the manufacturer
(Z)	Flushing device: A for manually operated flushing cistern B for automatic flushing cistern C for flush valve
CA	Cleanability
BP	Backflow prevention (foul air)
LR	Load resistance
DA	Durability

Table 4 — Characteristics and abbreviations for class 2 products

Abbreviation	Characteristics
EN 13407	Number of European standard for wall-hung urinals for product description
CL 2	Class 2 product in accordance with Clause 7
(Y)	Type of urinal (I, II, III or IV) in accordance with Table 1
(X)	Flushing volume and optionally flow rate specified by the manufacturer
(Z)	Flushing device: A for manually operated flushing cistern B for automatic flushing cistern C for flush valve
CA	Cleanability
BP	Backflow prevention (foul air)
LR	Load resistance
DA	Durability

All wall-hung urinals shall be designated in accordance with the following system:



The declaration of the characteristics of the second line is considered being covered by the declaration of the relevant class. However, the characteristics should be listed when one of those characteristics is not declared.

EXAMPLE 4 Class 1 wall-hung urinal of type I requiring a flush volume of 3 l supplied by a flush valve.

EN 13407 — CL 1 — I — 3 C

EXAMPLE 5 Class 2 wall-hung urinal of type III requiring a flush volume of 5 l supplied by an automatic flushing cistern.

EN 13407 — CL 2 — III — 5 B

EXAMPLE 6 Class 1 wall-hung urinal of type IV requiring a flushing volume of 2 l and a flow rate of 0,2 l/s supplied by a dedicated flush valve.

EN 13407 — CL 1 — IV — 2/0,2 C

10 Assessment and verification of constancy of performance – AVCP

10.1 General

The compliance of wall-hung urinals with the requirements of this standard and with the performances declared by the manufacturer in the DoP shall be demonstrated by:

— determination of the product type (see 10.2);

— factory production control by the manufacturer (FPC), including product assessment (see 10.3).

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the conformity of the product with its declared performance(s).

10.2 Type testing

10.2.1 General

All performances related to characteristics included in this standard shall be determined when the manufacturer intends to declare the respective performances unless the standard gives provisions for declaring them without performing tests. (e.g. use of previously existing data, CWFT and conventionally accepted performance).

Assessment previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same AVCP system on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

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

Products may be grouped in different families for different characteristics.

Reference to the assessment method standards should be made to allow the selection of a suitable representative sample.

In addition, the determination of the product type shall be performed for all characteristics included in the standard for which the manufacturer declares the performance:

— at the beginning of the production of a new or modified wall-hung urinals (unless a member of the same product range); or

— at the beginning of a new or modified method of production (where this may affect the stated properties); or

— they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the modified wall-hung urinals design, in the raw material or in the supplier of the components, or in the method of production (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of assessment methods of other product standards, these characteristics need not be re-assessed. The specifications of these components shall be documented.

Products bearing regulatory marking in accordance with appropriate harmonized European specifications may be presumed to have the performances declared in the DoP, although this does not replace the responsibility on the wall-hung urinals manufacturer to ensure that the wall-hung urinals as a whole are correctly manufactured and its component products have the declared performance values.

10.2.2 Test samples, testing and compliance criteria

The number of samples of wall-hung urinals to be tested/assessed shall be in accordance with Table 5 and/or Table 6.

Table 5 — Type testing for class 1 products

Characteristic to be tested	Assessment method according to clauses of this standard	Number of samples	Requirement and Compliance criteria
Depth of water seal	6.6.1.2	1	6.1
Wash of bowl	6.6.1.3.1	1	6.2.1
Flushing of three plastic balls	6.6.1.3.2	1	6.2.2
Over-splashing	6.6.1.3.3	1	6.2.3
Discharge	6.6.1.3.4	1	6.2.4
Water absorption	6.6.2	1	6.3
Load resistance	6.6.3	1	6.4

Table 6 — Type testing for class 2 products

Characteristic to be tested	Assessment method According to clauses of this Standard	Number of samples	Compliance criteria
Depth of water seal	7.5.1	1	7.1
Cleanability	7.5.2	1	7.2
Load resistance	6.6.3	1	7.3

10.3 Factory production control (FPC)

10.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market comply with the declared performance of the essential 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.

The results of inspections, tests or assessments requiring action shall be recorded. The action to be then when control values or criteria are not met shall be recorded.

NOTE Manufacturers having an FPC system, which complies with EN ISO 9001 and which addresses the provisions of the present European Standard, are considered as satisfying the FPC requirements of the Regulation (EU) No. 305/2011.

10.3.2 Equipment

10.3.2.1 Testing

All weighing, measuring and testing equipment shall be calibrated and regularly inspected in accordance with the documented procedures, frequencies and criteria.

10.3.2.2 Manufacturing

All equipment used in the manufacturing process shall be regularly inspected and maintained to ensure use; wear or failure does 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.

10.3.3 Raw materials and components

The specifications of all incoming raw materials and components shall be documented, as shall the inspection scheme for ensuring their compliance. In case supplied kit components are used, the constancy of performance system of the component shall be that given in the appropriate harmonized technical specification for that component.

10.3.4 Product testing and assessment

The manufacturer shall establish and document procedures to ensure that the stated values of all of the characteristics are maintained.

10.3.5 Non-complying products

The manufacturer shall have written procedures which specify how non-complying 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.

Where the product fails to satisfy the acceptance criteria, the provisions for non-complying products shall apply, the necessary corrective action(s) shall immediately be taken and the products or batches not complying shall be isolated and properly identified.

Once the fault has been corrected, the test or verification in question shall be repeated.

The results of controls and tests shall be properly recorded. The product description, date of manufacture, test method adopted, test results and acceptance criteria shall be entered in the records under the signature of the person responsible for the control/test.

With regard to any control result not meeting the requirements of this European Standard, the corrective measures taken to rectify the situation (e.g. a further test carried out, modification of manufacturing process, throwing away or putting right of product) shall be indicated in the records.

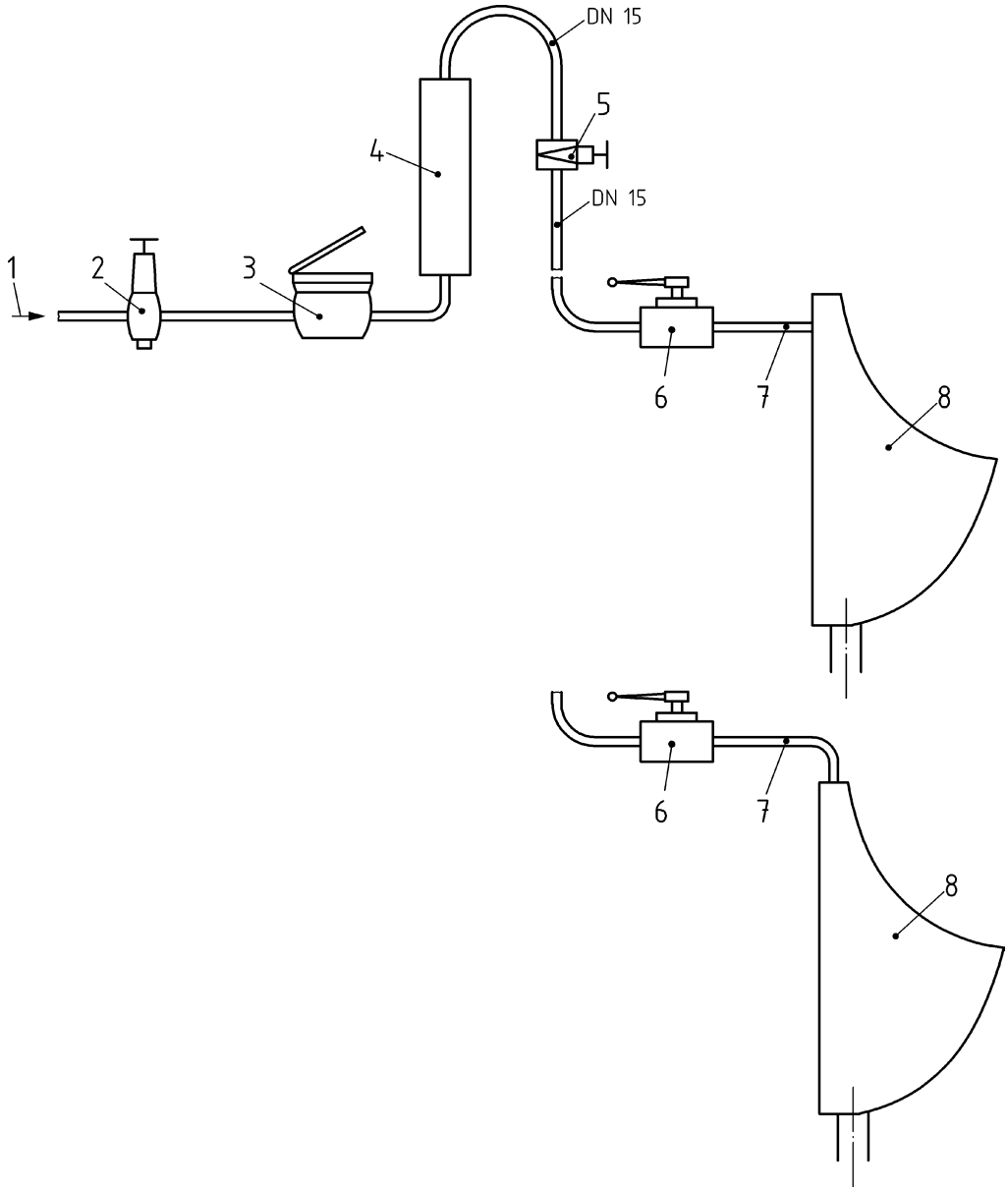
10.3.6 Corrective action

The manufacturer shall have documented procedures that instigate action to eliminate the cause of non-conformities in order to prevent recurrence.

Annex A
(normative)

Test rig for urinals intended to be flushed by a flush valve

For testing the flushing performance of a urinal intended to be flushed by a flush valve a test rig in accordance with Figure A.1 shall be used.



Key

1	water supply	5	control valve
2	pressure regulator	6	automatic magnetic interrupter DN 15 with quick-break characteristics
3	water meter	7	flexible pipe with maximum length of 200 mm and an inner diameter of 12 mm supported in a way that it is self-draining on closing the automatic magnetic interrupter
4	flow meter	8	urinal

Figure A.1 — Test rig for urinal with flush valve

For testing urinals with a dedicated flushing device the items 5, 6 and 7 of test rig given in Figure A.1 are to be omitted.

NOTE It is advisable to adjust the flushing volume by means of a time relay at the automatic magnetic interrupter.

Annex B
(normative)

Test rig for urinals intended to be flushed by a manually operated flushing cistern

For testing the flushing performance of a urinal intended to be flushed by a manually operated flushing cistern a test rig in accordance with Figure B.1 shall be used.

The procedures a) and b) shall be carried out successively.

a) Procedure to test the flush rate of the flushing cistern:

   1) Insert the restrictor (see Figure B.4) into the flush pipe as shown in Figure B.1.

   2) Fill the cistern to the water level of 5,0 l and mark it.

   3) Start the flushing operation.

   4) Add 0,5 l of water to the residual water and mark the lower measuring point.

   5) Add a further 1,0 l water (volume for flush rate measurement) and mark the upper measuring point.

   6) Add water to reach the urinal flushing water level of 5,0 l.

   7) Flush the cistern and measure the flow rate during delivery of the 1,0 l flushed between the upper and lower measuring points. The arithmetic average of flow rate of five flushing operations shall be (0,5 ± 0,1) l/s.

b) Procedure to test the urinal:

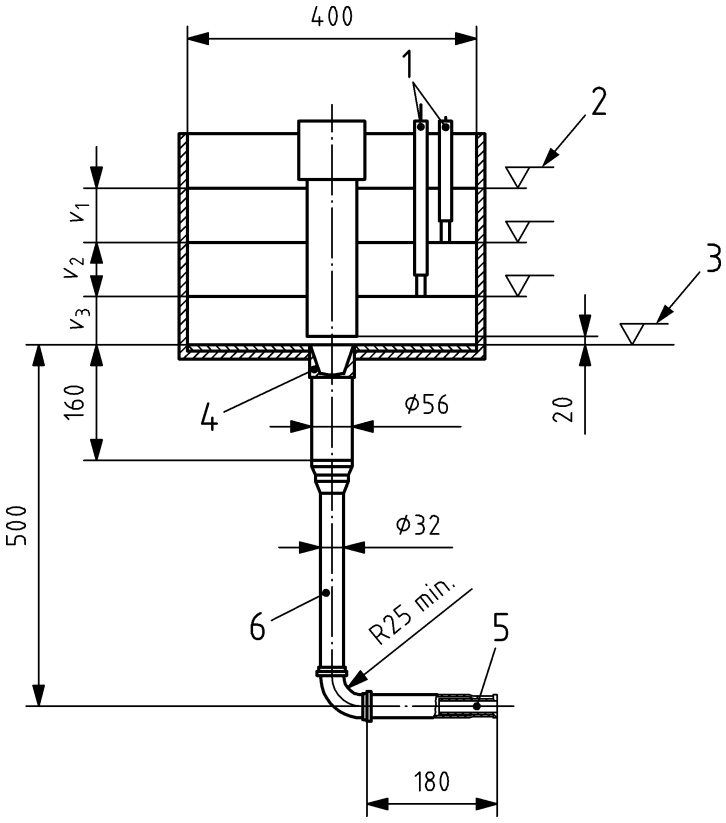
   1) Remove the restrictor (item 5 in Figure B.1) from flush pipe (item 6 in Figure B.1).

   2) Connect the urinal to be tested to the flush pipe as shown in Figure B.2.

   3) Fill the flushing cistern to the water volume prescribed by the manufacturer of the urinal and mark it.

   4) Perform the tests as specified in Clause 6 with the flushing volume prescribed by the manufacturer of urinal.

Dimensions in millimetres



Key

1 upper and lower water level sensors connected to a level control unit and an electronic timer

2 nominal water level (5 l)

3 residual water level

4 outlet valve (see Figure B.3)

5 restrictor (see Figure B.4)

6 polyethylene flush pipe, wall thickness 3 mm

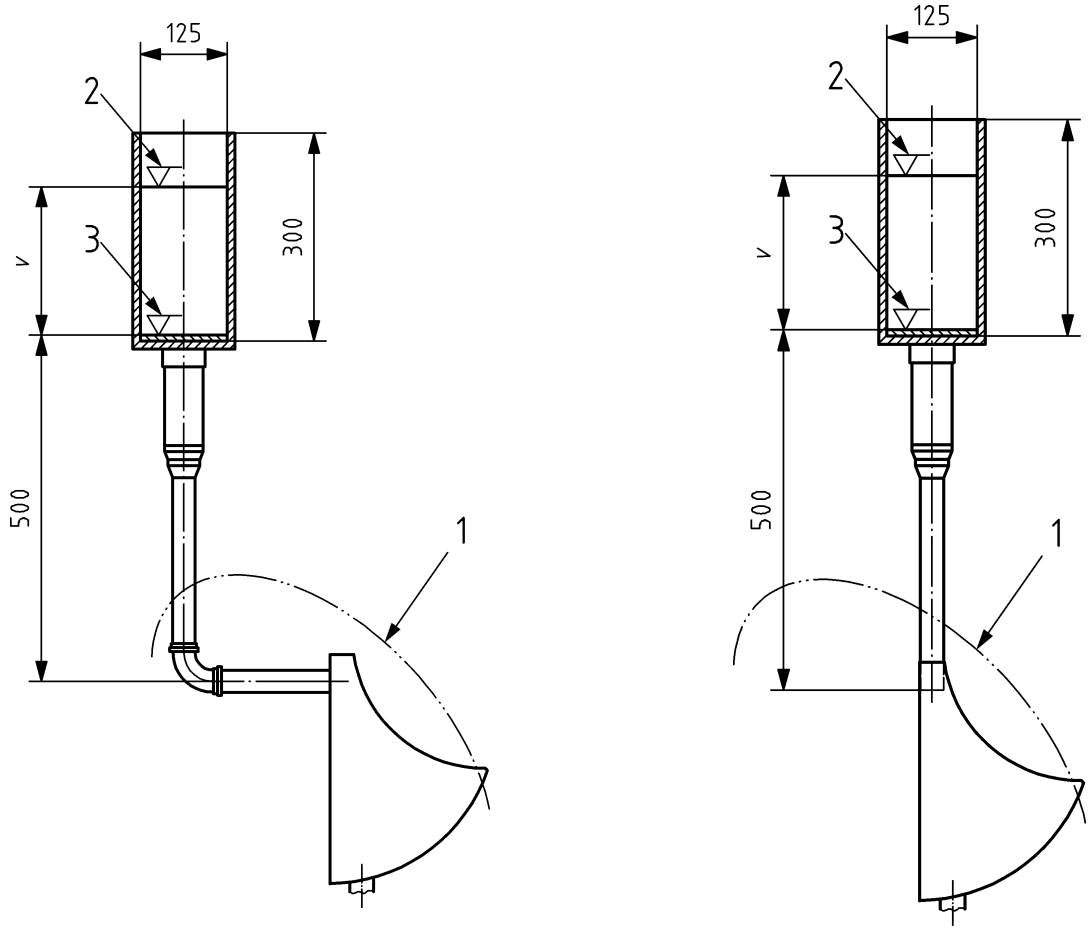
V_1 starting volume

V_2 measuring volume (1 l)

V_3 finishing volume (0,5 l)

Figure B.1 — Test rig for flushing cisterns

Dimensions in millimetres



Key

1 to be defined by manufacturer

2 nominal water level

3 residual water level

V flushing volume

Figure B.2 — Testing with urinal

Dimensions in millimetres

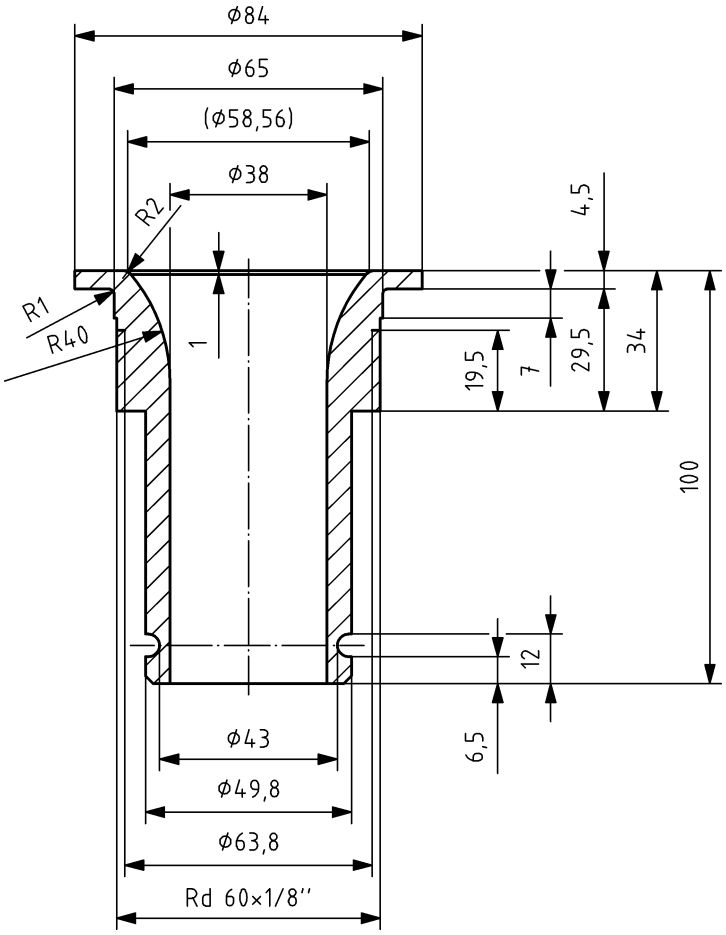


Figure B.3 — Test flushing cistern outlet with integral connection for flush pipe

Dimensions in millimetres

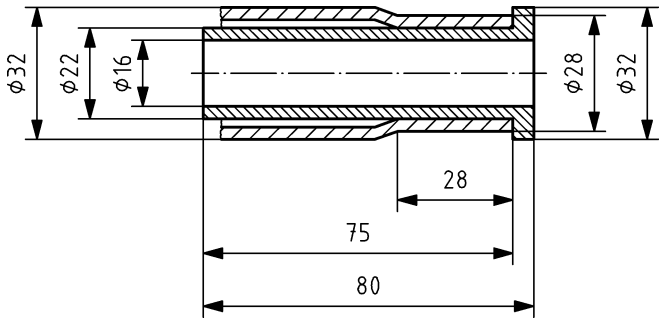


Figure B.4 — Restrictor

Annex C
(normative)

Test rig for urinals intended to be flushed by an automatic flushing cistern with valve-less outlet device

For testing the flushing performance of single urinals operated by automatic flushing cistern with valve-less outlet device, a test rig in accordance with Figure C.1 shall be used.

The procedures a) and b) shall be carried out successively:

a) Procedure to test the flow rate of the automatic flushing cistern:

   1) Assemble the automatic flushing cistern which shall deliver a flush volume as specified by the manufacturer of the urinal to be tested, and the flush pipe as shown in Figure C.1.

   2) Fill the cistern slowly, until a flush occurs automatically.

   3) Repeat the procedure three times, measuring the flush volume on each occasion, and calculate the average.

   4) Fill the cistern again and record the time from the beginning of the flush.

   5) Record the time taken for the flush to be completed.

   6) Repeat steps 4) and 5) three times.

   7) The flow rate average of three flushing operations shall be not less than 0,5 l/s.

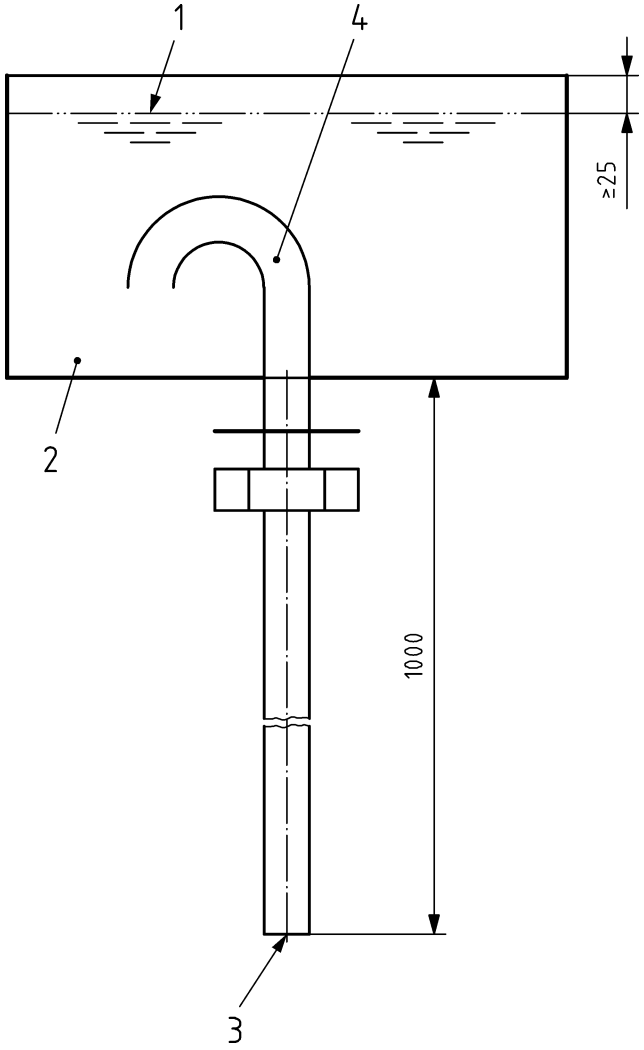
b) Procedure to test the urinal:

   1) Connect the urinal to be tested to the flush pipe using a spreader as instructed by the manufacturer.

   2) To initiate a flush, fill the cistern to the level at which a flush occurs automatically.

   3) Perform the flushing tests as specified in 7.5.1 with the flushing volume prescribed by the manufacturer of the urinal.

Dimensions in millimetres



Key

1 maximum water level

2 flushing cistern sized to deliver a nominal flush of 4,5 l or a volume recommended by the manufacturer of the urinal to be tested

3 flow rate at open end of pipe to be not less than 0,5 l/s

4 valve-less outlet device constructed so that water can only discharge during a flush

Figure C.1 — Test rig for automatic flushing cistern with valve-less outlet device

Annex ZA
(informative)

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

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/110 “Sanitary Appliances” as amended by M/139 given to CEN by the European Commission and the European Free Trade Association.

If this European Standard is cited in the Official Journal of the European Union (OJEU), the clauses of this standard, shown in this annex, are considered to meet the provisions of the relevant mandate, under the Regulation (EU) No. 305/2011.

This annex deals with the CE marking of the wall-hung urinals intended for the uses indicated in Table ZA.1.1 and Table ZA.1.2 and shows the relevant clauses applicable.

This annex has the same scope as in Clause 1 of this standard related to the aspects covered by the mandate and is defined by Table ZA.1.1 and Table ZA.1.2.

Table ZA.1.1 — Relevant clauses for class 1 products

Construction product: **Intended use:**	**Wall-hung urinal of class 1** **Personal hygiene**		
Essential Characteristics	**Requirement clauses in this European Standard**	**Regulatory classes**	**Notes**
Backflow prevention (of foul air)	6.1	—	Pass/Fail
Cleanability	6.2, 6.3	—	Pass/Fail
Load resistance	6.4	—	Pass/Fail
Durability	6.5	—	Pass/Fail

Table ZA.1.2 — Relevant clauses for class 2 products

Construction product: **Intended use:**	**Wall-hung urinal of class 2** **Personal hygiene**		
Essential Characteristics	**Requirement clauses in this European Standard**	**Regulatory classes**	**Notes**
Backflow prevention (of foul air)	7.1	—	Pass/Fail
Cleanability	7.2	—	Pass/Fail
Load resistance	7.3	—	Pass/Fail
Durability	7.4	—	Pass/Fail

The declaration of the product performance related to certain Essential Characteristics is not required in those Member States (MS) where there are no regulatory requirements on these Essential Characteristics for the intended use of the product.

In this case, manufacturers placing their products on the market of these MS are not obliged to determine nor declare the performance of their products with regard to these Essential Characteristics and the option “No performance determined” (NPD) in the information accompanying the CE marking and in the declaration of performance (see ZA.3) may be used for those Essential Characteristics.

ZA.2 Procedure for assessment and verification of constancy of performance (AVCP) of wall-hung urinals

ZA.2.1 System of AVCP

The AVCP system of wall-hung urinals indicated in Table ZA.1.1 and Table ZA.1.2, established by EC Decision 96/578/EC (OJ L254 of 8.10.1996 p 49) amended by EC Decision(s) 2001/596/EC (OJ L 209 p 33 of 2.8.2001) and 2002/592/EC (OJ L 192 p 57 of 20.7.2002) is shown in Table ZA.2 for the indicated intended use(s) and relevant level(s) or class(es) of performance.

Table ZA.2 — System of AVCP

Product	Intended use	Level(s) or class(es)	AVCP system(s)
Urinal	Personal hygiene	—	4
System 4: See Regulation (EU) No. 305/2011 (CPR) Annex V, 1.5.			

The AVCP of the wall-hung urinals in Tables ZA.1.1 and ZA.1.2 shall be according to the AVCP procedures indicated in Table ZA.3 resulting from application of the clauses of this or other European Standard indicated therein. The content of tasks of the notified body shall be limited to those Essential Characteristics as provided for, if any, in Annex III of the relevant mandate and to those that the manufacturer intends to declare.

Table ZA.3 — Assignment of AVCP tasks for wall-hung urinals used under system 4

Tasks		Content of task	AVCP clauses to apply
Task for the manufacturer	Determination of the product type on the basis of type testing, type calculation, tabulated values or descriptive documentation of the product	Essential Characteristics of relevant Table ZA.1.1 or Table ZA.1.2 relevant for the intended use which are declared	10.2
	Factory production control (FPC)	Parameters related to Essential Characteristics of relevant Table ZA.1.1 or Table ZA.1.2 relevant for the intended use	10.3

ZA.2.2 Declaration of performance (DoP)

ZA.2.2.1 General

The manufacturer draws up the DoP and affixes the CE marking on the basis of the different AVCP systems set out in Annex V of the Regulation (EU) No. 305/2011:

— the factory production control carried out by the manufacturer;

— the determination by the manufacturer of the product type on the basis of type testing, type calculation, tabulated values or descriptive documentation of the product.

ZA.2.2.2 Content

The model of the DoP is provided in Annex III of the Regulation (EU) No 305/2011.

In accordance with this Regulation, the DoP shall contain, in particular, the following information:

— the reference of the product type for which the declaration of performance has been drawn up;

— the AVCP system or systems of the construction product, as set out in Annex V of the CPR;

— the reference number and date of issue of the harmonized standard which has been used for the assessment of each Essential Characteristic;

where applicable, the reference number of the Specific Technical Documentation used and the requirements with which the manufacturer claims the product complies.

The DoP shall in addition contain:

a) the intended use or uses for the construction product, in accordance with the applicable harmonized technical specification;

b) the list of Essential Characteristics, as determined in the harmonized technical specification for the declared intended use or uses;

c) the performance of at least one of the Essential Characteristics of the construction product, relevant for the declared intended use or uses;

d) where applicable, the performance of the construction product, by levels or classes, or in a description, if necessary based on a calculation in relation to its Essential Characteristics determined in accordance with the Commission determination regarding those Essential Characteristics for which the manufacturer shall declare the performance of the product when it is placed on the market or the Commission determination regarding threshold levels for the performance in relation to the Essential Characteristics to be declared.

e) the performance of those Essential Characteristics of the construction product which are related to the intended use or uses, taking into consideration the provisions in relation to the intended use or uses where the manufacturer intends the product to be made available on the market;

f) for the listed essential characteristics for which no performance is declared, the letters “NPD” (No Performance Determined).

Regarding the supply of the DoP, Article 7 of the Regulation (EU) No. 305/2011 applies.

The information referred to in Article 31 or, as the case may be, in Article 33 of Regulation (EC) No 1907/2006 (REACH) shall be provided together with the DoP.

ZA.2.2.3 Examples of DoP

The following gives examples of a filled-in DoP for wall-hung urinals.

EXAMPLE 1 Full-text version of DoP with attached list of product numbers (identification codes) for this DoP:

DECLARATION OF PERFORMANCE

No. ABC1234

1. Unique identification code of the product-type:

For product number(s) see list attached

2 Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11(4):

Wall-hung urinal

3. Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Personal hygiene (PH)

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required under Article 11(5):

AnyCo SA,
PO Box 21
B-1050 Brussels, Belgium
Tel. +32987654321
Fax: +32123456789
Email: anyco.sa@provider.be

5. Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2):

Anyone Ltd
Flower Str. 24
West Hamfordshire
UK-589645 United Kingdom
Tel. +44987654321
Fax: +44123456789
e-mail: anyone.ltd@provider.uk

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in CPR (305/2011/EU), Annex V:

System 4

7. In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Determination of product type and factory production control by the manufacturer

8. Declared performance

Essential Characteristics[a]	Performance	Harmonized technical specification
Backflow prevention (of foul air) (BP)	Pass	EN 13407:2015
Cleanability (CA)	Pass	
Load resistance (LR)	Pass	
Durability (DA)	Pass	
[a] Specific performance of Essential Characteristics are given by the designation code as cited in the attachment.		

9. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

……

(name and function)

……..…… ……..……

(place and date of issue) (signature)

Attachment to Declaration of Performance

No. ABC1234

Product no.	Collection (optional)	Description (optional)	CE marking (optional)	Digits (optional)
6620 01	Amadea	Wall-hung urinal	EN 13407 — CL 1 — I — 3 C	11
…..				

……

(name and function)

……..…… ……..……

(place and date of issue) (signature)

(page/pages)

EXAMPLE 2 Short-text version of DoP with attached list of product numbers (identification codes) for this DoP:

Declaration of Performance

No. ABC1234

1) **For product number (identification code) see list attached**

2) **Wall-hung urinal**

3) **Personal hygiene (PH)**

4) **Ceramic sanitary ware Manufacturer**
Any Street 1
12345 Example City
Country
Ph.: +49 987-8654-0
Fax: +49 987-8654-1
info@sanitary-plant.com

5) **n.a.**

6) **System 4**

7) **Determination of product type and factory production control by the manufacturer**

8)

Essential Characteristics[a]	Performance	Harmonized technical specification
BP	Pass	EN 13407:2015
CA	Pass	
LR	Pass	
DA	Pass	
[a] Specific performance Essential Characteristics are given by the designation code as cited in the attachment.		

9) The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

……

(name and function)

…… ……

(place and date of issue) (signature)

(page/pages)

Attachment to Declaration of Performance

No. ABC1234

Product no.	Collection (optional)	Description (optional)	CE marking (optional)	Digits (optional)
6620 01	Amadea	Wall-hung urinal	EN 13407 — CL 1 — I — 3 C	11
…..				

……

(name and function)

……..…… ……..……

(place and date of issue) (signature)

(page/pages)

ZA.3 CE marking and labelling

The CE marking symbol shall be in accordance with the general principles set out in Article 30 of Regulation (EC) No. 765/2008 and shall be affixed visibly, legibly and indelibly:

— to the wall-hung urinal,

or

— to a label attached to it.

Where this is not possible or not warranted on account of the nature of the product, it shall be affixed:

— to the packaging,

or

— to the accompanying documents.

The CE marking shall be followed by:

— the last two digits of the year in which it was first affixed;

— the name and the registered address of the manufacturer, or the identifying mark allowing identification of the name and address of the manufacturer easily and without any ambiguity;

— the unique identification code of the product type;

— the reference number of the declaration of performance;

— the level or class of the performance declared;

— the reference to the harmonized technical specification applied;

— the intended use as laid down in the harmonized technical specification applied.

The CE marking shall be affixed before the construction product is placed on the market. It may be followed by a pictogram or any other mark notably indicating a special risk or use.

Figures ZA.1 and ZA.2 give examples of the information related to products subject to AVCP under system 4 to be given on the label.

CE	*CE marking, consisting of the "CE"-symbol*
AnyCo Ltd, PO Box 21, B-1050	*Name and the registered address of the manufacturer, or identifying mark*
15	*Last two digits of the year in which the marking was first affixed*
ABC1234	*Reference number of the DoP*
6620 01	*Unique identification code of the product type*
PH	*Intended use of the product as laid down in the European Standard applied*
EN 13407 — CL 1 - I - 2 C	*No. of European Standard applied, as referenced in OJEU and level or class of the performance declared*

Figure ZA.1 — Example CE marking information of wall-hung urinals

CE	*CE marking, consisting of the "CE"-symbol*
AnyCo Ltd, PO Box 21, B-1050	*Name and the registered address of the manufacturer, or identifying mark*
15	*Last two digits of the year in which the marking was first affixed*
ABC1234	*Reference number of the DoP*
6620 01	*Unique identification code of the product-type*
Personal hygiene	*Intended use of the product as laid down in the European Standard applied*
EN 13407 — CL 1 - I - 2 C **BP - LR - DA**	*No. of European Standard applied, as referenced in OJEU and level or class of the performance declared*

Figure ZA.2 — Example CE marking information of wall-hung urinals with limited set of declared characteristics

Bibliography

[1] EN ISO 9001, *Quality management systems - Requirements (ISO 9001)*

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