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**Minimum Allowable Values of Water Efficiency and
Water Efficiency Grades for Urinals**

小便器水效限定值及水效等级

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Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative References	4
3 Terms and Definitions	4
4 Water Efficiency of Urinals	5
5 Technical Requirements.....	5
6 Test Methods	6
Appendix A (Normative) Test Methods	7

Minimum Allowable Values of Water Efficiency and Water Efficiency Grades for Urinals

1 Scope

This Standard specifies the water efficiency grade, technical requirements and test methods of the urinals.

This Standard is applicable to the water efficiency evaluation of all types of urinals (excluding waterless urinals) installed on the cold-water supply pipelines in building facilities and the hydrostatic pressure of the water supply is no greater than 0.6MPa.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this document.

GB/T 9195 Classification and Terms of Building and Sanitary Ceramics

3 Terms and Definitions

For the purpose of this document, the terms and definitions given in GB/T 9195 and the following apply.

3.1 Average water consumption of urinals

The water consumption of the urinal that is measured and calculated according to the test method and calculation formula stipulated by the standard.

3.2 Minimum allowable values of water efficiency for urinals

Under the test conditions specified in the standard, the maximum water consumption that is allowed by the urinal.

3.3 Evaluating values of water conservation for urinals

Under the test conditions specified in the standard, the maximum water consumption

that is allowed by the water-saving urinal.

NOTE: The evaluating value of water conservation is a specified requirement for evaluating the water-saving urinals.

4 Water Efficiency of Urinals

The water efficiency of urinals is divided into 3 grades, of which Grade-3 has the lowest water efficiency. The average water consumption of all grades of urinals shall meet the requirements of Table 1.

Table 1 -- Water Efficiency Grade Index of Urinal

unit: L

Water efficiency grades of urinal	Grade-1	Grade-2	Grade-3
Average water consumption of urinal	≤ 0.5	≤ 1.5	≤ 2.5

5 Technical Requirements

5.1 Basic requirements

The urinal shall meet the requirements of the stated implementation standards, and shall be matched with the corresponding flushing device.

5.2 Flushing function requirements

5.2.1 Washing function

Carry out the washing function test according to Appendix A; the total length of the accumulated residual ink line after each flushing is no more than 25mm; and the length of each residual ink line is no more than 13mm.

5.2.2 Sewage replacement function

Carry out the sewage replacement test according to Appendix A; and the dilution rate of the urinal with integral trap shall be no less than 100.

5.2.3 Water seal depth

Carry out the water seal depth test according to Appendix A; the water seal depth of the urinal with integral trap shall be no less than 50mm.

5.2.4 Water seal recovery

Carry out the water seal recovery test according to Appendix A; and the water seal recovery of the urinal with integral trap shall be no less than 50mm. The siphon urinal

- a) Install the tested urinal on the water supply system that meets the requirements of A.1.2 according to the requirements of A.1.1. After connection, there shall be no leakage at all interfaces. Clean the washing surface and trap, and flush the urinal, so that the water seal reaches the normal water level.
- b) At one of the test pressures specified in Table A.1, the flushing device that matches the urinal shall be tested under the exit-factory state by matching the urinal. If the manufacturer has special requirements for the product, it shall be determined according to the product instructions and the stated pressure on the package.
- c) Start the flushing device in the normal way (generally no more than 1s); keep the installation state of the flushing at this time; adjust the test pressure according to Table A.1; and respectively measure three consecutive times under each specified pressure. Record the test pressure of each flushing and the actual water consumption (V_i) of each flushing cycle.

A.1.4 Calculation of average water consumption of urinals

The average water consumption of the urinal is calculated according to Formula (A.1); and the test result is accurate to 0.1L:

$$V = \frac{\sum_{i=1}^6 V_i}{6} \quad \dots\dots\dots (A.1)$$

Where:

V – average water consumption of urinal, in L;

V_i – actual water consumption of urinal, in L.

A.2 Flushing function requirements

A.2.1 Flushing function test

A urinal that is designed to have a water outlet ring that emits water from the water arrangement hole: scrub the washing surface; and draw a continuous horizontal thin ink line along the washing surface at one-third of the vertical distance from the lowest water arrangement hole of the water outlet ring for the urinal to the water seal; the ink line shall extend to 50% of the width of the inner wall of the urinal; and the ink line extends as shown in Figures A.2 a) and A.2 b);

A urinal that is designed to have no water outlet ring and water emits from the middle flusher: scrub the washing surface; and draw a continuous horizontal thin ink line along the washing surface from the lowest water outlet point of the flusher to half the vertical distance of the water seal; the ink line extends to the lowest water outlet point of the

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