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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 28377-2019

Replacing GB 28377-2012

**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

1 Scope

China's mandatory water efficiency standard for urinals - one of a family of fittings standards issued together on the same day, alongside the taps, the showers and the squatting pans, which between them cover most of the water a building uses. It specifies the water efficiency grades, the technical requirements and the test methods for urinals. The quantity regulated is the volume of the flush, and what makes a urinal a different problem from a WC is that the flush has no solids to carry: its job is to rinse the bowl surface and to refill the trap, and beyond a fairly small volume additional water does neither better. That is why urinals can be held to a flush far smaller than any other sanitary fitting, and why the requirements here are as much about the bowl and the flushing pattern as about the volume - a poorly shaped bowl needs more water to rinse, and a poorly distributed flush leaves a dry patch that becomes an odour problem and then, invariably, a reason for somebody to increase the flush volume. So the standard sets the flush volume grades together with the flushing performance the fitting must achieve at that volume: the rinsing of the whole wetted surface, and the replacement of the water in the trap seal. The minimum allowable value is the threshold above which a urinal may not be sold, and the water conservation evaluation value is the higher threshold used for certification. Issued on 31 December 2019 and in force since 1 July 2020, it replaces GB 28377-2012.

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

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 Water efficiency grades of urinal Average water consumption of urinal Grade-

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