

ICS 91.060
CCS Y 71



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

GB 28378-2019

Replacing GB 28378-2012

**Minimum allowable values of water efficiency and water
efficiency grades for showers**

淋浴器水效限定值及水效等级

Issued on: December 31, 2019

Implemented on: July 1, 2020

**Issued by: State Administration for Market Regulation;
Standardization Administration of China**

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative References...	5
3 Terms and Definitions...	5
4 Water Efficiency Grade of Shower...	6
5 Technical Requirements...	6
7 Appendix A (Normative) Test Methods...	8

Foreword

This Standard was drafted as per the rules specified in GB/T 1.1-2009. This Standard replaced GB 28378-2012 Minimum Allowable Values of Water Efficiency and Water Efficiency Grades for Showers. Compared with GB 28378-2012, this Standard has the major technical changes as follows:

- Modify the scope of the standard;
- Modify some terms and definitions;
- Modify the basic requirements;
- Add the spray force requirements;
- Modify the water efficiency grade index of the shower;
- Modify the uniformity index of the flowrate. This Standard was proposed by Standardization Administration of China, and Resource Conservation and Environmental Protection Department of National Development and Reform Commission. This Standard shall be under the jurisdiction of Standardization Administration of China. Drafting organizations of this Standard. Jomoo Kitchen & Bath Co., Ltd.; China National Institute of Standardization; Guangzhou Monalisa Sanitary Ware Co., Ltd.; Guangdong Yuehua Home Co., Ltd.; National Center for Supervision & Inspection of Drainage Irrigation & Water-Saving Equipment Products Quality; Xiamen Water Nymph Sanitary Technology Co., Ltd.; Anhui Product Quality Supervision & Inspection Research Institute; Guangdong Huayi Plumbing Fittings Industry Co., Ltd.; Hegii Group Co., Ltd.; Quanzhou Lianchuang Kitch & Bathroom Co., Ltd.; Foshan Jiajia Sanitary Ware Co., Ltd.; Qingdao Economic & Technology Development Zone Haier Water Heater Co., Ltd.; Foshan Dongpeng Sanitary Ware Co., Ltd.; Hansgrohe Sanitary Products (Shanghai) Co., Ltd.; Xiamen Solex High-Tech Industries Co., Ltd.; Guangdong Weixiang Sanitary Ware Co., Ltd.; Kaiping Himark Sanitary Ware Co.,

Ltd.; Taizhou Shenhu Sanitary Co., Ltd.; Yinchao Sanitary Ware Co., Ltd.; Guangdong Konna Sanitary Technology Co., Ltd.; Guangdong Toyo Sanitary Ware Equipment Co., Ltd.; Guangdong Creation Trend Yuge Technology Co., Ltd.; Zhejiang Furniture and Hardware Research Institute; Foshan Supervision Testing Center of Quality and Metrology; China Quality Certification Center; and China Building Material Test & Certification Group (Shaanxi) Co., Ltd. Chief drafting staffs of this Standard. Zhu Shuangxi, Bai Xue, Zhang Fan, Lin Xiaowei, Fang Huaming, Zhu Xuedan, Xie Xiaojun, Cai Rong, Ding Weigang, Ding Yanfei, Xie Yuerong, Li Hongshun, Liu Chuan, Zhou huaqiang, Cai Yudong, Zeng Tiansheng, Lei Ting, Liu Zhiqiang, Chen Shiqing, Yuan Qing, Huang Yuanfang, Ding Zuohao, Han Yuanyang, Ruan Weiguang, Li Jianhai, Zheng Hongbo, Huang Yinchao, Chen Shuding, Jiang Conggao, Qiu Taohui, Shao Zhenghui, Zhu Yijun, Huang Jinfei, Lai Yanling, Wu Zhaohui, Yuan Liangyue, Huang Xiaoyan, and Yin Jun. This Standard was first-time published in April, 2012; it is the first-time revision. Minimum Allowable Values of Water Efficiency and Water Efficiency Grades for Showers

1 Scope

China's mandatory water efficiency standard for showers - the fitting that uses more water than any other in a dwelling, and more hot water than anything else, so that a limit on its flow is a limit on both the water bill and the energy bill at once. It specifies the water efficiency grades, the technical requirements and the test methods for showers. The quantity regulated is the flow rate at a defined supply pressure, and the reason a mandatory ceiling works here is the same reason it works for taps, but larger: what a person experiences as a strong shower is the velocity and the pattern of the spray, not the volume passing through it, so a well-designed head at a restricted flow feels no worse than a badly designed one at twice the flow. The standard therefore sets the flow grades together with the requirements that stop a manufacturer meeting the number at the cost of the experience: the spray force and distribution, the uniformity across the spray pattern, and the performance across the range of supply pressures a real installation presents - because a head that meets the limit at the test pressure and floods at high pressure has achieved nothing. The minimum allowable value is the threshold above which a shower may not be manufactured, imported or sold; the water conservation evaluation value is the higher threshold for the water saving certification; and the grades are what is marked at the point of sale. Issued on 31 December 2019 and in force since 1 July 2020, it replaces GB 28378-2012.

This Standard specifies the water efficiency grade, technical requirements and test methods of showers. This Standard is applicable to the water efficiency evaluation for the showers (including sprinkler or sprinkler combinations) that is used in the shower room and other sanitary facilities, and that is installed at the end of the cold and hot water supply pipelines in the building, with a nominal pressure (static pressure) no greater than 1.0MPa, and medium temperature of 4°C ~90°C. This Standard is not applicable to showers with

their own heating device and thermostatic showers.

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 33733 Terminology and Classification for the Kitchen and Sanitary Ware Fittings

3 Terms and Definitions

For the purpose of this document, the terms and definitions given in GB/T 33733 and the following apply.

3.1 Uniformity of flow; ΔF Under different test pressures, the difference between the highest average flowrate and the lowest average flowrate of the hand-held sprinkler for the shower.

3.3 Evaluating values of water conservation for showers Under the test conditions specified in the standard, the maximum flowrate allowed by the water-saving shower.

3.4 Spray force; P Under the test conditions specified in the standard, the impact force reached by the spraying of the hand-held sprinkler for the shower.

4 Water Efficiency Grade of Shower

4.1 The water efficiency grade of shower is divided into 3 grades, of which Grade-3 has the lowest water efficiency.

4.2 The flowrate of each grade of shower shall meet the requirements of Table 1.

4.3 If the hand-held sprinkler has multiple water outlet methods, respectively test the flowrate of each water outlet method; and use the water efficiency grade achieved by the maximum flowrate as the water efficiency grade of the shower.

5 Technical Requirements

5.1 Basic requirements The shower shall meet the requirements of the expressly implemented standards.

5.3 Uniformity of flow Test according to Appendix A, the maximum water flow uniformity of the hand-held sprinkler for the shower shall be no greater than

5.4 Minimum allowable values of water efficiency for showers The minimum allowable values of water efficiency for showers indicate Grade-3 water efficiency.

6 Test Methods

The test methods for spray force, flowrate and uniformity of flow for showers shall be implemented in accordance with Appendix A.

Appendix A

(Normative) Test Methods A.1 Spray force test A.1.1 Spray force test device Use the following test devices, and other test devices with the same effect may also be used.

A.2.1.2 Test device A.2.1.2.1 The schematic diagram of the test device is shown in Figure A.2