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GB/T 42786-2023

Graduation and test methods on thermal comfort and visual comfort of building shading

建筑遮阳热舒适、视觉舒适性能分级及检测方法

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Foreword

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1.Structure and Drafting Rules of Standardization Documents" Drafting. Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed and managed by the Ministry of Housing and Urban-Rural Development of the People's Republic of China. This document was drafted by: Beijing China Construction Engineering Research Institute Co., Ltd., China Construction Engineering Bureau (Group) Co., Ltd., Guangzhou Construction Materials Industry Research Institute Co., Ltd., Zhejiang University Architectural Design and Research Institute Co., Ltd., Shanghai Construction Science and Technology Inspection Co., Ltd., Guangdong Provincial Construction Science and Technology Research Institute Group Co., Ltd., China Academy of Building Research Co., Ltd., Xiongan Green Research Inspection and Certification Co., Ltd., Beijing University of Architecture and Architecture University of Science and Technology, Hunan University, China Construction Science and Technology Group Co., Ltd., Tianjin Jianke Building Energy Saving and Environmental Testing Co., Ltd., Changzhou Institute of Building Sciences Tuan Group Co., Ltd., China Construction First Engineering Bureau Group Construction Development Co., Ltd., Tianjin 211 Station Inspection Technology Co., Ltd., Beijing Keer Construction Energy Saving Technology Co., Ltd., Guangxi Zhuang Autonomous Region Building Research and Design Institute, Guangdong Chuangming Shade Technology Co., Ltd., Tianjin Jinbeier Construction Construction Engineering Testing and Inspection Technology Co., Ltd., China Construction Second Bureau Third Construction Engineering Co., Ltd., Jiangsu Hengshang Energy Saving Technology Co., Ltd., Jiangsu Hengshang Energy Saving Technology Co., Ltd. Zhou Suming Decoration Co., Ltd., Weisen (Xiamen) Building Materials Industry Co., Ltd., Suzhou Construction Engineering Quality Inspection Center Co., Ltd., Shen Yangzi Weiheng Testing Equipment Co., Ltd., Shimadzu

Enterprise Management (China) Co., Ltd., China National Accreditation Center for Conformity Assessment, PerkinElmer Enterprise Management (Shanghai) Co., Ltd., Beijing Sixth Construction Engineering Quality Inspection Institute Co., Ltd. The main drafters of this document. Ren Jing, Zhang Jinhua, Xue Gang, Wang Xianzhang, Duan Kai, Wang Changjun, Yue Peng, Ma Yang, Luo Tao, Ren Jun, Wang Suilin, Xiong Yaxuan, Feng Xuming, Peng Jinqing, Bai Qian, Qi He, Li Shengying, Wan Chenglong, Xu Ming, Zhang Jun, Zhan Bixiong, Wang Zhe, Wu Yazhou, Lu Linghuan, Lian Jianhua, Shang Jingyuan, Li Jun, Wang Xinbo, Wang Zhiyong, Zhu Yanming, Ji Ling, Wei Zhanhang, Li Zhenquan, Chen Xianhua, Zhang Bin, Qin Bing, Wang Guohua, Mu Lianbo, Lou Yanqiang, Li Huatao, Wang Leilei, Gao Yanrong, Xu Dandan, Gou Xinzhou. Building shading thermal comfort and visual comfort performance classification and Detection method

1 Scope

GB/T 42786-2023 grades and tests the thermal and visual comfort performance of building shading. Shading is the cheapest way to cut the cooling load of a glazed building, and it is chosen almost entirely on appearance, because the two things it actually does - rejecting solar heat and controlling glare - pull against each other and against daylight, and no single number expresses the compromise. The standard supplies the numbers. It sets the grading, the testing and calculation of the optical parameters of the shading material, and the testing and calculation of the thermal and visual comfort performance of the assembly, with normative annexes on the double-beam spectrophotometer and its accuracy, the reference glass and the opacity performance tester, and informative annexes recommending the total solar transmittance classification for combinations and the inner surface temperature of the transparent envelope. It took effect on 1 March 2024.

This document specifies the classification of thermal comfort and visual comfort performance of building shading, testing and calculation of optical parameters of shading materials, thermal comfort, visual comfort Sensory comfort performance test and calculation and test report. This document is applicable to the classification and testing of thermal comfort and visual comfort performance of building sunshade products. This document does not apply to materials with fluorescent or Sunshade products made of materials with retroreflective properties.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to the date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 2680 Architectural glass visible light transmittance, direct sunlight transmittance, total

solar energy transmittance, ultraviolet transmittance and visible light transmittance Determination of window glass parameters

GB/T 11976 Lighting performance classification and detection methods of building exterior windows

GB/T 30592 Testing method for solar heat gain coefficient of light-transmitting envelope structures JGJ/T 151 Thermal calculation procedures for building doors, windows and glass curtain walls JG/T 274 General technical requirements for building sunshade JG/T 281 Test method for thermal insulation performance of building sunshade products JG/T 440 Testing method for shading performance of building doors and windows

3 Terms, definitions and symbols

3.1 Terms and definitions The terms and definitions defined in JGJ/T 151, JG/T 274 and the following apply to this document.

3.1.1 Thermal comfort performancethermalcomfort The thermal comfort performance of building shading mainly includes solar heat gain control performance, secondary heat gain control performance and direct transmission protection performance.

3.1.2 Solar gain control performance controlofsolargains When the sunshade product is fully extended and closed, it can reduce the building's cooling load in summer by reducing indoor solar heat gain. Evaluation parameters is the total solar transmittance.

3.1.3 The ratio of heat gain from solar radiation entering the room through the light-transmitting enclosure structure to the amount of incident solar radiation.