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

GB/T 11942-2022

Replacing GB/T 11942-1989

Test method of chroma for colour building materials

彩色建筑材料色度测量方法

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part

1. Structure and Drafting Rules for Standardization Documents" drafting. This document replaces GB/T 11942-1989 "Chromaticity Measurement Method for Colored Building Materials". Compared with GB/T 11942-1989, except for In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Deleted the separate provisions for simple spectrophotometers (see 4.2 of the 1989 edition);
- b) Added the Luther condition (Luther condition) of photoelectric integration type colorimetric instruments (see 4.2);
- c) Added the relevant content of CIE standard illuminant A (see 4.3.1);
- d) Changed the "geometric conditions" (see 4.3.2, 4.5 of the 1989 edition);
- e) Deleted the "working color board" and added "ceramic standard white board" and "standard sample of visible light reflectance of coated glass" (see Chapter 5, Chapter 5 of the 1989 edition);
- f) Change "measurement of tristimulus value" to "measurement of color" (see 7.2, 7.3 of the 1989 edition);
- g) Deleted "calculation of dominant wavelength λ_D (or complementary color wavelength λ_C) and excitation purity P_e " (see 8.5 of the 1989 edition). Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents. This document is proposed and managed by China Building Materials Federation. This document is drafted by: Building Materials Industry Technology Supervision Research

Center, Beijing Aobotai Technology Co., Ltd., Yuantest Testing Technology (Jiangsu) Co., Ltd., Beixin Group Building Materials Co., Ltd., China Construction Eighth Bureau Fourth Construction Co., Ltd., Zhonghe Huafeng Construction Group Co., Ltd. Co., Ltd., China Construction Second Engineering Bureau Co., Ltd., China Railway Eleventh Bureau Group Co., Ltd., Anhui Kaiyuan Road and Bridge Co., Ltd., China Construction Zhuqiqi Engineering Bureau Co., Ltd., Suzhou Shiming Technology Co., Ltd., Shenzhen Sanenshi Technology Co., Ltd., Hangzhou Caipu Technology Co., Ltd. Company, Ningbo Urban Infrastructure Construction and Development Center, Beijing Kangguang Optical Instrument Co., Ltd., Meichao Group Co., Ltd., Shaanxi University of Technology China Railway Engineering Service Co., Ltd., China Road and Bridge Engineering Co., Ltd., China Railway Beijing Engineering Bureau Group Co., Ltd., Beijing Chentaike Instrument Device Technology Co., Ltd. The main drafters of this document. Wang Huan, Zhang Zhemin, Wu Wenjie, Liu Ying, Ni Yongcao, Han Yanzhang, Hu Zhongyuan, Wei Xueling, Huang Daquan, Yuan Jing, Wang Xinping, Yuan Kun, Zhang Kun, Zhang Mao, Liu Fengxian, Luo Gansheng, Chen Qijian, Fu Yitie, Li Shengying, Peng Jianyao, Gong Lei, Lu Shiming, Su Chaoyang, Zou Xiangyu, Li Kaifu, Sun Fangping, Yu Yang, Zhang Yaru, Zhang Shu, Yao Quande. The release status of previous versions of this document and the documents it replaces are as follows:

---First released in 1983 as GB 3950-1983;

1 Scope

GB/T 11942-2022 is the Chinese national standard on test method of chroma for colour building materials, in the field of construction materials and building. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 30 December 2022 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 July 2023. Classification: ICS 91.100, CCS Q04. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the instrument, standard sample, sample, measurement, value calculation, and measurement report of the chromaticity measurement method for colored building materials. This document applies to the colorimetric measurement of non-fluorescent colored building materials. This document does not apply to colored building materials with fluorescent properties Color measurement.

2 Normative references

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

GB/T 3977 Color Representation Method

GB/T 3978 Standard illuminants and geometric conditions

GB/T 3979 Measurement method of object color

GB/T 5698 Color Terminology

3 Terms and Definitions

The following terms and definitions defined in GB/T 3978, GB/T 3979 and GB/T 5698 apply to this document.

3.1 Chroma Quantitative indicators of object color properties.

4 Instruments

4.1 Spectrophotometer A spectrophotometric colorimeter is an instrument that can measure the spectral reflectance or spectral transmittance of a material and obtain color parameters through calculation. Light The spectrophotometric colorimeter should meet the following conditions.

- a) The wavelength range of the instrument used for chromaticity measurement should include 380nm~780nm, and the wavelength range of the instrument used for color difference measurement should be at least Including 400nm~700nm;
- b) The half width of the wavelength is generally not more than 5nm, and the maximum is not more than 10nm;
- c) The wavelength error is not greater than 1nm;
- d) The wavelength interval is not greater than 5nm;
- e) The photometric accuracy should be within 0.5% of the full scale within the photometric range;
- f) The instrument can be based on the selected standard chromaticity observer color matching function, CIE standard illuminant or the relative spectral function of the illuminant Ratio distribution (see Appendix A), and the measured spectral transmittance and spectral reflectance calculated to obtain tristimulus values, tristimulus values See Appendix B for the calculation of.