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

GB/T 4893.10-2024

**Test of surface coatings of furniture - Part 10: Determination of
surface resistance to scratching**

家具表面漆膜理化性能试验 第10部分：耐划痕测定法

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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 is required. This document is part 10 of GB/T 4893 "Tests for physical and chemical properties of furniture surface paint films". GB/T 4893 has been published as follows part. -- Part

1 Scope

GB/T 4893.10-2024 specifies the determination of scratch resistance of furniture surface coatings, part of the Chinese series on the physical and chemical performance of furniture finishes. Scratch resistance is the property that determines how a table or a cabinet front looks after a year of use, and it is the most common subject of consumer complaint about furniture, but it is also easily misreported because a scratch is judged visually and the judgement depends on the lighting and the observer. The standard sets the principle, the apparatus with its scratching stylus of defined geometry and its loading arrangement, the specimen and its conditioning, the procedure with the loads applied in a defined sequence and the scratch pattern, the examination of the surface under specified lighting and viewing conditions, the determination of the minimum load at which a permanent scratch is produced, the rating and the report. It takes effect on 1 April 2025.

This document describes a method for determining the scratch resistance of paint films on furniture surfaces. This document applies to all cured surfaces of painted furniture and is carried out on unused furniture or test panels. test. This document is not applicable to leather and textile surfaces.

2 Normative references

This document has no normative references.

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Test panel A test piece having a test surface.

Note. The test sample is cut from the furniture, or an independent sample made of the same material and finishing method as the furniture.

3.2 scratch scratching trace A visible and measurable mark made by the tip of a stylus on the test surface under a specified load.

3.3 Scratching resistance The minimum load required to produce a scratch with a width greater than or equal to

0.30 mm on the paint film on the surface of furniture using a scratching needle.

Note. The unit is Newton (N).

3.4 Preliminary assessments of the scratching resistance The minimum load that produces a specified scratch on a test surface.

3.5 Intermediate assessment of scratching resistance The average value of the preliminary assessment of the scratch resistance of a test surface.

3.6 final value of scratching resistance The average of the intermediate ratings of the scratch resistance of the three test surfaces.

4 Principle

Scratch resistance is the minimum load (in units) required to produce a scratch of a specified width on the paint film on the surface of furniture using a scratching needle (see 7.2).

6 Gloss determination method; -- Part

7.Determination of resistance to temperature difference between hot and cold; -- Part

9 Determination of impact resistance; -- Part

10.Determination of scratch resistance. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by China Light

Industry Federation. This document is under the jurisdiction of the National Furniture Standardization Technical Committee (SAC/TC 480). This document was drafted by: Guangdong Product Quality Supervision and Inspection Institute, Guangdong Lin's Home Furnishing Co., Ltd., Guangdong Zhongtai Furniture Group Co., Ltd., Shunde Vocational and Technical College, Guangdong Weifa Custom Home Furnishing Co., Ltd., Guangdong Tianciwan Laboratory Equipment Manufacturing Co., Ltd., Guangdong Huasheng Furniture Group Co., Ltd., Zhaoqing Yaodonghua Decoration Materials Technology Co., Ltd., Zhongshan Donggang Furniture Manufacturing Co., Ltd., Zhongshan Kejin Office Supplies Co., Ltd., Zhongshan Haibang Furniture Industry Co., Ltd., Hengjie Sanitary Ware Group Co., Ltd., Guangzhou Xiangte Gangyi Office Equipment Co., Ltd., Guangdong Shenmuwang Sanitary Ware Co., Ltd., Mengtian Home Furnishing Group Co., Ltd., Jiangshan Oupai Door Industry Co., Ltd. Limited Company, Jiangxi Ruidun Intelligent Technology Co., Ltd., Shanghai Quality Supervision and Inspection Technology Research Institute, Shenzhen Metrology and Quality Inspection Research Institute, Guangdong Ruizhi Environmental Protection Technology Co., Ltd., Beijing Product Quality Supervision and Inspection Institute, Ruian Baoyuan Chemical Co., Ltd., Zhejiang Light Industry Industrial Product Quality Inspection Institute, Guangdong Fumei New Material Technology Co., Ltd., Guangdong Dongguan Quality Supervision and Inspection Center, Guangdong Xinchuang Materials Technology Co., Ltd., Guangdong Agilent New Materials Technology Co., Ltd., Dongguan Boshi Youcheng Furniture Co., Ltd., Luoyang Huadu Furniture Group Co., Ltd., Guangzhou Shenwei New Material Technology Co., Ltd. The main drafters of this document are: Wang Hongqiang, Hai Lingchao, Hong Weicheng, Liu Yage, Cheng Weixiang, Wang Yongguang, Wang Jin, Liu Jiaquan, Lei Wen, Chen Deyi, Yao Yonghong, Zeng Minhua, Qiqi Wang, Sun Shudong, Cai Yongfeng, Zhong Wenhan, Lu Jianhui, Jing Jun, Wang Wenjun, Liang Zhiqiang, Zong Shaoliang, Su Ruijie, Yuan Ruotang, Jiang Zhongming, Zhou Xulei, Fan Yaoyun, Nie Kaiming, Guan Jun, Han Zhenyue, Nie Lin, Wang Song, Huang Zhihao, Yuan Huiya.

The physical and chemical properties of furniture surface paint film include resistance to cold liquid, resistance to moisture and heat, resistance to dry heat, adhesion, thickness, gloss, resistance to cold and hot temperature difference, wear resistance, Impact and scratch resistance, etc. Due to the large amount of content, GB/T 4893 is planned to consist of ten parts. -- Part

- 1.Determination of cold liquid resistance. The purpose is to specify the method for determining the cold liquid resistance of furniture surface paint films. -- Part
- 2.Determination of moisture and heat resistance. The purpose is to specify the method for determining the moisture and heat resistance of furniture surface paint films. -- Part
- 3.Determination of dry heat resistance. The purpose is to specify the method for determining the dry heat resistance of furniture surface paint films. -- Part
- 4.Cross-cutting method for adhesion determination. The purpose is to specify the method

for cross-cutting method for adhesion determination of paint films on furniture surfaces.
method. -- Part

5.Thickness determination method. The purpose is to specify the method for determining the thickness of paint films on furniture surfaces. -- Part

6.Gloss determination method. The purpose is to specify the method for determining the gloss of paint films on furniture surfaces. -- Part

7.Determination of resistance to hot and cold temperature differences. The purpose is to specify the method for determining the resistance to hot and cold temperature differences of furniture surface paint films. -- Part

8.Determination of abrasion resistance. The purpose is to specify the method for determining the abrasion resistance of furniture surface paint films. -- Part

9.Impact resistance test method. The purpose is to specify the method for testing the impact resistance of furniture surface paint films. -- Part

10.Determination of scratch resistance. The purpose is to specify the method for determining the scratch resistance of furniture paint surfaces. This document is Part 10 of GB/T 4893, which specifies the method for determining scratch resistance, mainly simulating the scratch resistance of certain objects in real life. After scratching the furniture surface, evaluate the furniture surface's ability to resist scratches from other objects, in order to guide enterprise production, improve furniture surface quality, and standardize It provides technical support for the furniture market order and technical guarantee for protecting the legitimate rights and interests of consumers. Test on physical and chemical properties of furniture surface paint film Part