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

GB/T 44507-2024

**Test method of leatherette - Determination and evaluation of
surface scratch**

人造革合成革试验方法 表面耐刮擦的测定及评价

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Test methods
 - 4.1 Method A-Metal Finger Scratching Method
 - 4.1.2 Test equipment

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. Please note that the content 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 Technical Committee for Standardization of Plastic Products (SAC/TC48). This document was drafted by: Suzhou Ruigao New Materials Co., Ltd., Changhong Meiling Co., Ltd., Hefei Ketian Waterborne Technology Co., Ltd. Responsible Company, Ma'anshan Ruigao Technology Co., Ltd., Kunshan Achilles New Materials Technology Co., Ltd., Zhejiang Meisheng New Materials Co., Ltd., Shanghai Hai Automobile Group Co., Ltd. Passenger Vehicle Branch, Zhejiang Hexin New Materials Co., Ltd., Kunshan Beice Testing Technology Co., Ltd., Beijing CHJ Information Technology Co., Ltd., Shanghai Weilai Automobile Co., Ltd., Lishui Quality Inspection and Testing Institute, Shandong Tongda Haidao New Materials Co., Ltd., Zhejiang Luoxing Chemical Co., Ltd., Tenshou (Fujian) Microfiber Technology Co., Ltd., Hubei Qili Polymer Materials Co., Ltd. Co., Ltd., Anhui Amway Materials Technology Co., Ltd., Foshan Weisda New Materials Co., Ltd., Chongqing Shuangxiang Microfiber Materials Co., Ltd., Fujian Huaxia Synthetic Leather Co., Ltd., Nantong Deyi New Materials Co., Ltd., Suzhou Best Decoration New Materials Co., Ltd., Zhejiang Jiake New Materials Material Technology Co., Ltd., Dongguan Hebiao Technology Co., Ltd., and Shanghai Dingzhen Testing Technology Co., Ltd. The main drafters of this document are. Gao Jingang, Yang Hao, Fan Xuefu, Sun Fengyun, Zhang Tao, Zhu Youkui, Zhao Jianming, Qian Neng, Yin Jianwei, Lan Bi, Wu Yuan, Xu Yiyan, Wang Weixin, Ben Xianli, Xu Xiaofeng, Ji Yijie, Ying Yueyue, Xu Xuri, Yao Dusheng, Zhou Wenzhi, Liu Aiming, Jia Yisong, Hong Aijun, Yang Wentao, Li Hualin, Chen Qiaojian, Sun Bin, Zheng Sixian, Qu Xinghe, Wei Guo. Test methods for artificial leather and synthetic leather Determination and

evaluation of surface scratch resistance

1 Scope

GB/T 44507-2024 gives the Chinese method for determining and evaluating the surface scratch resistance of artificial and synthetic leather. Scratch resistance is what separates a synthetic leather that still looks acceptable after a year in a car seat, a sofa or a handbag from one that does not, and it is the property customers complain about most; but a scratch is a visual defect as much as a mechanical one, so a method has to define both how the surface is marked and how the mark is judged. The standard sets the principle, the apparatus and the scratching stylus with its geometry and load, the specimen and its conditioning, the scratching procedure with the defined load, speed and pattern, and then the evaluation: the visual assessment against a grey scale or a rating scale under specified lighting and viewing geometry, the instrumental measurement of the gloss and colour change where used, the reporting of the grade and the load at which damage first appears. It takes effect on 1 April 2025.

This document describes the scratch resistance test of artificial leather and synthetic leather using the metal finger scratch method (Method A), the paper clip scratch method (Method B) and the rotary scratch method. The principle of the rubbing method (C method), test instruments, specimens, test procedures, evaluation of test results, expression of results and test report. This document is applicable to the determination and evaluation of the scratch resistance of artificial leather, synthetic leather and their products.

2 Normative references

The contents of the following documents constitute essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 2918 Standard environment for conditioning and testing of plastic specimens QB/T 1149-2011 Paper clips QB/T 2726-2005 Physical and mechanical tests on leather - Determination of wear resistance

3 Terms and definitions

There are no terms or definitions that require definition in this document.

4.1 Method A-Metal Finger Scratching Method

4.1.1 Principle The metal finger scratching method is divided into two methods. single finger scratching and five finger scratching. Place the test surface of the sample upward and fix it

on the metal finger scratching test Use one finger or five fingers to apply a specified load on the specimen, and move the mobile platform for a certain distance at a specified speed. Under the specified light source, evaluate the scratch degree of the sample surface after scratching.

4.1.2 Test equipment

4.1.2.1 Metal finger scratch tester The metal finger scratch tester is equipped with a movable platform for moving samples. The movable platform is installed under 5 metal fingers. The fingers are independent of each other, and the metal fingers are replaceable (the metal finger material is tungsten carbide, and the finger tip is a hemispherical shape with a diameter of $1.0\text{mm}\pm0.1\text{mm}$). The metal finger is loaded with loads of different masses, and the load can be applied to the surface of the sample through the metal finger. The load is specified in Table 1. The schematic diagram of the scratch test machine structure is shown in Figure 1, and the schematic diagram of the metal finger is shown in Figure 2.