

ICS 77.040.10

CCS H 22



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

GB/T 43432.1-2025

Metallic materials - Barcol hardness test - Part 1: Test method

金属材料 巴氏硬度试验 第1部分：试验方法

Issued on: October 31, 2025

Implemented on: May 1, 2026

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

Table of Contents

1 Scope
1.25 C HBaC 40°
2 Normative references
3 Terms and Definitions
4 Scale and Parameters
5 Principles
6 Test equipment
7 Sample
8 Experimental Procedure
9 Uncertainty of the results
12.4 B HBaB 26°

Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 1 of GB/T 43432 "Metallic Materials, Barcol Hardness Test". GB/T 43432 has published the following... part.

2. Inspection and Calibration of Hardness Testers;

3. Calibration of Standard Hardness Blocks Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed by the China Iron and Steel Association. This document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183). This document was drafted by: Shenyang Tianxing Testing Instruments Co., Ltd., China Petroleum Materials and Information Technology Co., Ltd., and Zhejiang Provincial Special Equipment Co., Ltd. Scientific Research Institute, Shandong Jianzhu University, Metallurgical Industry Information and Standardization Research Institute, Shanghai Customs Industrial Products and Raw Materials Testing Technology Center, Jiangsu Province Product Quality Supervision and Inspection Institute, Wuxi Jingmei Precision Slide Rail Co., Ltd. The main drafters of this document are: Zhang Luming, Sun Xuwei, Du Bin, Zhai Tongguang, Yao Xiaotao, Hou Huining, Wu Yiwen, Jia Xin, Qiu Suguo, and Hu Jiansheng. Zhang Yuanbin, Dong Li, Ye Huili, Li Chuande, Tu Yingming, Guo Bicheng, Li Zongming, Liang Zhifa.

GB/T 43432 "Barcol Hardness Test for Metallic Materials" aims to standardize the test methods and instruments for Barcol hardness testing, consisting of three parts. Partial composition.

1. Test Methods. The purpose is to establish the procedures and methods to be followed in the Barcol hardness test.

2. Inspection and Calibration of Barcol Hardness Testers. The purpose is to specify the technical requirements and inspection/calibration methods that Barcol hardness testers must meet. The law specifies direct testing methods for verifying the basic functions of a hardness tester and indirect testing methods for verifying its overall performance.

3. Calibration of Standard Hardness Blocks. The purpose is to determine the technical requirements and calibration specifications that Barcol hardness standard hardness blocks must meet. method. Barcol hardness test of metallic materials Part

1 Scope

GB/T 43432.1-2025 is the Chinese national standard covering the Barcol impressor on metal - a portable spring-loaded indenter that gives a reading in seconds on a part too large to bring to a bench tester, with the surface preparation, the number of readings and the conversion limits. Part 1 of the series, first edition, under the China Iron and Steel Association. Issued on 31 October 2025, it has been in force since 1 May 2026.

This document describes the principle of the Barcol hardness test for metallic materials, and specifies the test equipment, specimens, test procedures, and processing of test results. Test report. This document applies to the Barcol hardness test of metallic materials, with a measurement range equivalent to Vickers hardness of 20HV to 145HV.

1.25 C HBaC 40°

1.25 The "A" in the hardness symbol HBaA can be omitted, and it is represented as HBa.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 8170 Rules for rounding off numerical values and the representation and determination of limiting values

GB/T 43432.2-2023 Metallic materials - Barcol hardness test - Part

3 Terms and Definitions

This document does not contain any terms or definitions that need to be defined.

4. Scale and Parameters The Barcol hardness scale, hardness symbols, indenter cone angle, and nominal values of the spring constant used in this document are shown in Table

1. Table

1. Barcol Hardness Scale, Hardness Symbol, Indenter Cone Angle, and Nominal Value of Spring Elasticity Coefficient Barcol hardness scale, hardness symbol, indenter cone angle nominal value of spring constant of force application N/mm A HBaAa 26°

5 Principles

A steel indenter of specified shape and size is pressed into the sample surface under the pressure of a force spring. The depth to which the indenter penetrates the sample is used to measure the pressure.