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**Metallic materials - Guide to test pieces preparation for
mechanical testing**

金属材料 力学性能试验用试样制备指南

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Foreword

This guiding technical document was drafted in accordance with the rules given in GB/T 1.1-2009. This instructional technical document is proposed by China Iron and Steel Industry Association. This guiding technical document is under the jurisdiction of the National Steel Standardization Technical Committee (SAC/TC183). Drafting organization of this guiding technical document. Qiqihar Huagong Machine Tool Co., Ltd., Information Standard Research Institute of Metallurgical Industry, Baoshan Steel Iron and Steel Co., Ltd., Shanxi Taigang Stainless Steel Co., Ltd. Iron and Steel Company, Minmetals Yingkou Medium Plate Co., Ltd., Shandong Iron and Steel Co., Ltd. Laiwu Branch, Shandong Iron and Steel Group Rizhao Co., Ltd. Division, Shanghai Shenli Testing Machine Co., Ltd. The main drafters of this guiding technical document. Wang Hongliang, Zhou Lifu, Dong Li, Xu Weixing, Lian Xiaojie, Gao Yifei, Zhou Zhichao, Zhong Yangyang, Li Tao, Gao Lianghao, Yang Haoyuan, Xu Weicheng, Fang Jian, Wang Yan, Ren Yongxiu, Zhao Naisheng, Li Qinghua, Min Fanqi, Wang Kejie, Lin Xiaogang.

The preparation of samples for mechanical properties testing involves many standards and regulations, such as testing standards, product standards, sample preparation equipment, sample preparation Process, sample processing method, etc. In order to regulate the correlation between the relevant regulations and standards for sample preparation, and to adapt to the development of sample preparation equipment and technology In accordance

with the requirements of the national standardization reform, this guidance technical document was prepared. In order to increase the usefulness of this document, four appendices have been set up in this document. Appendix A describes the standard tests for commonly used mechanical properties tests. Sample, Appendix B introduces the common CNC equipment and special CNC equipment for mechanical sample processing, and Appendix C introduces the CNC equipment for some sample processing. Cases of equipment and different technological processes, Appendix D introduces the case of machining mechanical samples of medium and thick steel plates using different equipment. This document is available for each The mechanics laboratory is used as a reference when planning and designing, preparing sample processing procedures, and selecting processing equipment. Guidelines for preparing test specimens for testing mechanical properties of metallic materials

1 Scope

GB/Z 38434-2019 is the Chinese national standard on metallic materials - guide to test pieces preparation for mechanical testing, in the field of metallurgy. The /Z suffix marks it as a guiding technical document: it does not prescribe requirements that can be certified against, but sets out the technique, the method or the state of the art that the standards bodies recommend following. It was issued on 31 December 2019 by the State Administration for Market Regulation; Standardization Administration of China. As a guiding technical document it carries no separate date of entry into force: it applies from publication. Classification: ICS 77.040.10, CCS H22. 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 guiding technical document gives the terms and definitions for the preparation of test specimens for the mechanical properties of metal materials, and provides common mechanical properties. Guidelines for test samples, sample preparation, sample processing equipment, processing procedures, etc. This instructional technical document is applicable to the mechanical property test of metal plates, bars, tubes, strips, profiles, castings, forgings, welding parts, etc. Preparation and processing of samples.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article Pieces. For undated references, the latest version (including all amendments) applies to this document.

GB/T 2975 Sampling locations and sample preparation for mechanical properties test of steel and steel products

GB/T 10623 Terminology for mechanical properties test of metallic materials

GB/T 20832 Identification of metal material sample axis relative to product texture

3 Terms and definitions

The terms and definitions defined in GB/T 10623 and GB/T 2975 apply to this document.

4 Commonly used mechanical property test specimens

Names, reference standards, sample requirements, and standard sample drawings, scales of commonly used mechanical property test samples listed in this guidance technical document The dimensions, tolerances and corresponding processing methods are shown in Table 1 and Appendix A. Table

1 Test specimens for common mechanical properties The sample name refers to the standard sample requirements