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NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

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GB/T 12160-2019 / ISO 9513:2012

Replacing GB/T 12160-2002

Metallic Materials - Calibration of Extensometers Systems Used in Uniaxial Testing

金属材料 单轴试验用引伸计系统的标定

(ISO 9513:2012, IDT)

Issued on: October 18, 2019 **Implemented on: May 1, 2020**

Issued by: State Administration for Market Regulation;

Standardization Administration of the People's Republic of China.

Table of Contents

Foreword

This Standard was drafted in accordance with the rules provided in GB/T 1.1-2009.

This Standard serves as a replacement for GB/T 12160-2002 *Calibration of Extensometers Used in Uniaxial Testing*. In comparison with GB/T 12160-2002, apart from editorial modifications, the main technical changes are as follows:

---Terms and definitions are added (see Chapter 2);

---Pre-calibration inspection is added (see Chapter 6);

---Uncertainty determination is added (see Chapter 10);

---Annex A "Example of Extensometer Calibration Range" and Annex B "Parameters for Extensometer Classification" are deleted (see Annex A and Annex B of Version 2002);

---Informative Annexes are added (see Annex A, Annex B, Annex C, Annex D, Annex E, Annex F, Annex G and Annex H).

This Standard uses the translation method in the equivalent adoption of ISO 9513:2012 *Metallic Materials - Calibration of Extensometer Systems Used in Uniaxial Testing*.

This Standard makes the following editorial modification:

---This Standard includes ISO 9513:2012_Cor 1 and corrects some contents of Figure C.1 and Figure C.2.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee 122 on Testing Machines of Standardization Administration of China (SAC/TC 122).

The drafting organizations of this Standard: SINOTEST Equipment Co., Ltd.; Central Iron & Steel Research Institute; Wuxi Institute of Measurement and Testing; Shenzhen WANCE testing Machine Co., Ltd.; Jilin University; Jilin Institute of Metrology.

The main drafters of this Standard: Yang Zhengwang, Chen Wu, Chen Chao, An Jianping, Zhang Shizhong, Han Dandan, Zhao Hongwei.

The issuing of the previous versions:

---GB 12160-1990, GB/T 12160-2002.

Metallic Materials - Calibration of Extensometers Systems Used in Uniaxial Testing

1 Scope

This Standard specifies a method for the static calibration of extensometer systems used in uniaxial testing, including axial and diametral extensometer systems, both contacting and non-contacting.

2 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

2.1 Extensometer System

equipment used to measure displacement or strain on the surface of a test piece.

NOTE: for the purpose of this Standard, the term “extensometer system” includes the indicator. Some extensometers indicate strain directly (e.g. laser extensometers or digital image correlation techniques). Other extensometers indicate the change in gauge length of a test piece; this is converted into strain by dividing by the relevant gauge length.

2.2 Gauge Length

portion of a test piece where extension is measured.

3 Symbols and Designations

Symbols used throughout this Standard are given in Table 1 together with their designation.

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