Metallic materials - Tensile testing –
Part 1 : Method of test at room temperature

(ISO 6892-1: 2009, MOD)
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Foreword

The modification of this section adopts the international standard ISO 6892-1:2009 Metallic Materials—Tensile Testing—Part1: Method of Test at Room Temperature (English Version). The overall structure, the hierarchical division, the preparation method and the technological content of this section are basically equal to ISO 6892-1:2009. Amendments and supplements to the following part of the international standards are made in this section, and the margin of the page of the terms involved in the text is identified by vertical single-lines:

— In normative references, this section directly reference to China’s national standards corresponding to the international standards.


— The minimum of the three measurements of the original cross-sectional area is replaced by the average in Chapter 7.

— Add some basic principles about the determination of the upper and lower yield strength position in Chapter 12.

— Add the “test results of numerical rounding” in Chapter 22.

— Add the normative Appendix J of successive approximation method for determination of provisions plastic eyes strength (Rp).

— Add examples in the informative Appendix K of unloading force method for determination of provisions residual extension strength.

The details in Appendix B, Appendix C, Appendix D and Appendix E about proportional test pieces and disproportionate test pieces are modified accordingly.

— Modify the evaluation method for estimating the uncertainty and form the Appendix L of evaluating the estimation of the uncertainty of the tensile test measurement results.

For using easily this section also do the following editorial changes:

— Change the word “the International Standard” to “the Standard”;

— Use decimal point “.” instead of commas “,” using as decimal point;

— Delete the preface of the International Standard.

This section replaces GB/T 228-2002 Metallic Materials-tensile Test Method. This section does much amendments and additions to the technical content of the original standards in the following areas:

— Modify the standard name

— Normative references

— Add the control method of the test rate. Method A is strain rate control method

— Test results of numerical rounding

— Evaluation method for estimating the uncertainty of the tensile test measurement results

— Add the informative Appendix A of suggestion for using the computer-controlled tensile testing machine

— Add the informative Appendix F of the only rate of beams estimated after taking into account the stiffness (or softness) of the testing machine.

This Part is proposed by China Iron and Steel Association.

This Part is under the jurisdiction of National Technical Committee on Iron and Steel of Standardization Administration of China

Chief draft units of this Standard: Central Iron and Steel Research Institute, China Metallurgical Information & Standardization Institute, Baosteel Corporation, MTS Systems (Shanghai) Company, Ltd, Shougang Company Limited, Shanghai Hualong Testing Instrument Co., Ltd, Shanghai Entry-Exit Inspection and Quarantine Bureau, Dalian Xiwang Equipment Co., Ltd, Shanghai Material Research Institute and Beijing General Research Institute of Nonferrous Metals.


History editions replaced by this Standard as following:
— GB/T 228-1963, GB/T 228-1976, GB/T 228-1987, GB/T 228-2002;
— GB/T 3076-1982;
Introduction

In this Standard, there are two methods of testing speeds available. The first, method A, is based on strain rates (including crosshead separation rate) and the second, method B, is based on stress rates. Method A is intended to minimize the variation of the test rates during the moment when strain rate sensitive parameters are determined and to minimize the measurement uncertainty of the test results.
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1 Scope

This part of GB/T 228 specifies the method for tensile testing of metallic materials and definition, symbol and specification, test pieces as well as dimension determination, test apparatus, test requirements, performance determination, rounding off for numerical values and test report. This Part is applicable to the determination of tensile testing of metallic material at room temperature.

NOTE Annex A indicates complementary recommendations for computer controlled testing machines.

2 Normative References

The articles contained in the following documents have become this standard when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Standard. For the undated documents so quoted, the latest editions shall be applicable to this Standard.


GB/T 8170 Rules of rounding off for numerical values & expression and judgement of limiting values

GB/T 10623 Metallic material - Mechanical testing – V ocabulary (GB/T 10623-2008, ISO 23718: 2007, MOD)

GB/T 12160 Calibration of extensometers used in uniaxial testing (GB/T 12160-2002, ISO 9513: 1999, IDT)

GB/T 16825.1 Verification of static uniaxial testing machines - Part 1: Tension/compression testing machines - Verification and calibration of the force-measuring system (GB/T 16825.1-2008, ISO 7500-1: 2004, IDT)


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