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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

中华人民共和国国家标准

GB/T 232—2010
Replace GB/T 232—1999

Metallic materials – Bend test

金属材料 弯曲试验方法

(ISO 7438: 2005, MOD)

Issued on Sept 02, 2010 Implemented on Jun 01 2011

Issued by **General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China**
Standardization Administration of the People's Republic of China (SAC)

Contents

Foreword

This standard modification adopts international standard ISO 7438:2005 *Metallic Materials Bending Test* (English version).

This standard is re-drafted according to ISO 7438:2005, in order to facilitate comparison, it has listed the comparation schedule of this national standard terms and international standard tems in Annex A

The main technical differences between this standard and the international standard are as follows:

——Add the referenced Chapter 2 *Normative Reference Documents*;

——Add the referenced Figure 3 and Figure B.1 in Chapter 3;

——Add “other bending device which complies with the principle of bending test (for example, turning plate bending device, etc)” in 5.5;

——Add “cutting position and direction of sample should be in accordance with the requirements of the relevant product standard” in 6.1. If no specific provisions for steel products, it should be in accordance with GB / T 2975 requirements.

For ease of use, the standard does 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.

Ths standard replaces GB/T 232-1999 *Metallic Materials Bending Test Method*

The revision of this standard does the modification on the following main technical content of GB / T 232-1999:

——Canceled “flexual center” term;

——Canceled the formila for determing specimen length;

——Modified the provisions of specimen thickness;

——Add the provisions on radius values of rounded angle for rectangular specimen;

——Add the provisions on the terms that “it shuld take safety measures and protecting device during test process”;

——Add the provisions on the terms that the test speed should be （1±0.2)mm/s when occurring disputes;

——Add Annex A and Annex B.

Annex A and B of this Standard is informative annex.

This Standard is proposed by China Iron and Steel Association.

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

Chief draft units of this Standard: Shougang Company Limited, China Metallurgical Information

& Standardization Institute and Central Iron and Steel Research Institute.
Chief drafters of this Standard: Wang Ping, Liu Weiping, Dong Li, Ren Dandan and Gao Yifei.
History editions replaced by this Standard as following:
GB/T 232-1963, GB/T 232-1982, GB/T 232-1988, GB/T 232-1999.

Metallic materials – Bend test

1 Scope

This Standard specifies a method for determining the ability of metallic materials to undergo plastic deformation in bending.
This Standard applies to test pieces taken from metallic products, as specified in the relevant product standard. It is not applicable to certain materials or products, for example tubes in full section or welded joints, for which other standards exist.

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 2975 Steel and steel products--Location and preparation of test pieces for mechanical testing (GB/T 2975-1998, eqv ISO 377: 1997)

3 Symbols and Designations

Symbols and designations used in the bend test are shown in Figures 1, 2, 3 and Figure B.1 and specified in Table 1.

Table 1 — Symbols and designations

Symbol	Designation	Unit
a	Thickness or diameter of test piece (or diameter of the inscribed circle for pieces of polygonal cross-section)	mm
b	Width of the test piece	mm
L	Length of the test piece	mm
l	Distance between supports	mm
D	Diameter of the former	mm
α	Angle of bend	degrees
r	Internal radius of bend portion of test piece after bending	mm
f	Displacement of the former	mm
c	Distance between the plane including the horizontal axis of supports and the central axis of the rounded portion of the former before test	mm
p	Distance between the vertical planes including the central axis and the vertical axis of each support and the vertical plane including the horizontal central axis of the former after test	mm

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