

ICS 19.060; 77.040.10  
CCS N 71



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

**GB/T 18658-2018**

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**Charpy V-notch reference test pieces for indirect verification of  
pendulum impact testing machines**

**Issued on: July 13, 2018**

**Implemented on: February 1, 2019**

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**Issued by: State Administration for Market Regulation, China National  
Standardization Administration**

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5.1 Performance

1 sample length 55.00  $0^{+0.30}_{-0}$  mm

2 Half length of the specimen 27.5  $\pm 0.2^{*}$  mm

3 sample height 10.00  $\pm 0.06$  mm

4 sample width 10.00  $\pm 0.07^{*}$  mm

5 The cross-sectional height of the notch is 8.00  $\pm 0.06$  mm

6 Notch angle 45.0  $\pm 1.0^{*}$  degrees ( $^{\circ}$ )

7 Notch bottom radius of curvature 0.250  $\pm 0.025$  mm

8 The angle between adjacent faces is 90.00  $\pm 0.15^{*}$  degrees ( $^{\circ}$ )

10 Anvil fillet radius 1.00  $0.10^{+0}_{-0}$  mm

11 Anvil slope angle 11  $\pm 1.0$  degrees ( $^{\circ}$ )

12 Span span 40.00  $0.10^{+0}_{-0}$  mm

13 Distance of the pendulum impact blade to the symmetry plane of the anvil -  $\pm 0.25^{*}$  mm

14 Impact edge angle 30  $\pm 1$  degree ( $^{\circ}$ )

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### Foreword

The national standard for the Charpy pendulum impact test series of metallic materials consists of the following three separate standards.

---GB/T 229 metal material Charpy pendulum impact test method;

---GB/T 3808 pendulum impact tester inspection;

---GB/T 18658 Pendulum impact tester for indirect inspection with Charpy V-notch standard specimens.

This standard is one of the national standards of this series.

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GB/T 18658-2002 "Charpy impact tester for Charpy V-notch standard test", and

Compared with GB/T 18658-2002, the main technical changes are as follows.

--- Modified the name;

--- Turned the last two paragraphs of Chapter 1 into two notes (see Chapter 1, Chapter 1 of the.2002 edition);

--- Updated the national standards cited in the list of normative references (see Chapter 2, Chapter 2 of the.2002 edition);

---Divided into four categories and renumbered, modified the definition of individual terms (see Chapter 3,.2002 edition)

Chapter 3);

The --- symbol has been increased from 3 to 36. Among them, the two symbols "b" and "BV" have been added to the standard, and eight abbreviations have been added. Will be able to

The basic symbol of the quantity is changed from the original "A" to "K" (see Chapter 4, Chapter 4 of the.2002 edition);

---Adjusted the structure of Chapters 5 and 6 and rewritten the article number (see Chapters 5 and 6, Chapter 5 of the.2002 edition and

Chapter 6);

--- Added the informative Appendix A "The uncertainty of the calibration energy (KV) value of the Charpy impact standard sample" (see Appendix A);

--- Added references.

This standard uses the redrafting method to modify the international standard ISO 148-3:2008 "Metal material Charpy pendulum impact test"

Part 3. Preparation and Characteristics of Charpy V-notch Specimens for Indirect Inspection of Pendulum Impact Tester.

The technical differences between this standard and ISO 148-3:2008 and their reasons are as follows.

--- Regarding the normative reference documents, this standard has made technical adjustments to adapt to the technical conditions of China, within the adjustment

The content is reflected in Chapter 2, "Regulatory References", and the specific adjustments are as follows.

\* Replace ISO 148-1 with GB/T 229 modified to adopt international standards;

\* Replaced ISO 148-2 with GB/T 3808 modified to international standards.

--- Increased the scope of application.

--- Delete the positive sign " " or minus " - " before the deviation of the dimension deviation or the lower deviation of "0" in Table 2.

--- Added two symbols "b" and "BV" to the header of Table 3, before the technical specification of the third column "Maximum allowable indication error"

Added the sign "+/-".

There are technical differences between this standard and ISO 148-3:2008, and the terms involved in these differences have been passed on the outer margins of the margins.

The vertical single line ( ) is marked.

This standard also made the following editorial changes.

--- In line with the existing standard series, the standard name was changed to "Charpy V-notch standard for indirect inspection of pendulum impact tester"

Sample".

## Introduction

The suitability of a pendulum impact tester for metal material acceptance testing is usually based on calibration and sizing of its dial

Qualitative tests, such as the detection of the shape and span of the support sample anvil. Calibration of the dial is generally done by measuring the mass of the pendulum and

Check the pendulum lift for the different readings on the dial. The outstanding advantage of this method of evaluating the impact tester is that only the measurement is traceable to

The amount of national benchmarks. The authenticity of these traceability measurements reduces the need to arbitrate for the suitability of the impact tester for material acceptance testing.

Essential.

However, when testing samples of the same material, it is sometimes found that it is evaluated by the direct test described above and meets all dimensional requirements.

The two test machines gave distinct impact values. The value measured by one test machine satisfies the technical requirements of the material, while the other

The measured value does not meet the requirements, and this difference is commercially important. In order to avoid this difference, the buyer of certain materials will mention

Additional requirements. all impact testing machines sold to them for material acceptance testing are subject to the standard test specimens provided by the buyer.

Conduct an indirect test. Within the specified limit values, only the value measured by the test machine is the same as the value given by the standard sample.

Can be received.

GB/T 3808 draws on the successful experience of using standard samples, and proposes that in addition to direct inspection, standard samples should be used for indirect inspection.

Inspection requirements. This standard is intended to specify the requirements, preparation and identification methods for standard specimens for indirect testing of pendulum impact testing machines.

Pendulum impact tester for indirect inspection

Charpy V-notch standard specimen

## 1 Scope

This standard specifies the technical requirements, preparation and inspection of standard specimens for indirect inspection of pendulum impact test machines in accordance with GB/T 3808.

Method.

The notched specimens described in this standard and their nominal dimensions are strictly