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

GB/T 1043.2-2018

**Plastics -- Determination of Charpy impact properties -- Part 2:
Instrumented impact test**

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Table of Contents

Foreword

1 Scope

2 Normative references

3 Terms and definitions

3.1 and 3.2 of.2008). Expressed in kilojoules per square meter (kJ/m²).

4 Principle

5 instruments

5.1 Testing machine

5.2 Measuring device for force and deflection

5.3 Micrometers and gauges

6 sample

7 Test procedure

Foreword

GB/T 1043 "Determination of impact properties of plastic simply supported beams" is divided into two parts.

--- Part 1. Non-instrumental impact test;

--- Part 2. Instrumented impact test.

This part is the second part of GB/T 1043.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the translation method equivalent to ISO 179-2.1997 "Determination of impact properties of plastic simply supported beams - Part 2. Instrumentation

Determination of impact properties of plastic simply supported beams - Part 2.
Instrumentation impact test - 1988 - Am.

Precision.

This part was proposed by the China Petroleum and Chemical Industry Federation.

This part is under the jurisdiction of the National Plastics Standardization Technical Committee General Method and Product Subcommittee (SAC/TC15/SC4).

This section is responsible for drafting units. China Petroleum and Chemical Corporation,

Beijing Beihua Institute Yanshan Branch, Zhonglan Chenguang Chengdu detection technology

Limited company, Dalian University of Technology.

1 Scope

1.1 This part of GB/T 1043 specifies a test method for determining the impact properties of plastic simply supported beams using force-deflection curves. follow

Several different types of specimens and tests specified in GB/T 1043.1-2008, and according to different material types, specimen types and gaps

Type and specified test parameters.

Describes dynamic effects such as resonance of the sensor-impact knife system, sample resonance, and the relationship between initial contact and inertia peaks (see

See curve b and Appendix A) in Figure 1.

1.2 For a comparison between the test methods of simply supported beams and cantilever beams, see Chapter 1 of GB/T 1043.1-2008.

GB/T 1043.1-2008 is applicable to the impact behavior only by impact strength, and the potential energy of the impact tester is to be compared with the sample to be tested.

The fracture energy is approximately matched (see ISO 13802.1999, Appendix C). This section applies to the use of force-deflection curve or force-time curve detailed table

The impact behavior, as well as the development of automated impact instruments that avoid the energy matching requirements mentioned above.

1.3 For the scope of materials applicable in this section, refer to Chapter 1 of GB/T 1043.1-2008.

1.4 For the general requirements for guaranteeing the test results, refer to Chapter 1 of GB/T 1043.1-2008.

1.5 The test data obtained in this section does not apply to the design calculation of components, and the use of test data is not discussed in this section.

Content. When applying the data obtained by this method, it must be marked with reference to this part or negotiate with relevant parties.

Materials can be obtained by changing the test environment temperature, the notch radius of the sample, the thickness of the sample, and the preparation of samples using different conditions.

Information on the behavior of the break.

This part does not involve the formation mechanism of each point on the analytical force-deflection curve. The analytical method for this mechanism is still in the research stage.

1.6 The results of the measurements are comparable only when the sample preparation conditions and test conditions are the same. Comprehensive evaluation of impact stress on specimens

In response, it is necessary to determine the deformation rate and the effect of temperature on material parameters such as crystallinity and moisture content. Therefore, you cannot use this part.

The impact fracture behavior of the product is directly predicted, but this section can be used to measure the sample taken from the product.

1.7 If the comparability of this part and GB/T 1043.1-2008 is established through preliminary tests, the impact strength can be determined by this part.

the result of.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 1043.1-2008 Determination of impact properties of simply supported beams - Part 1. Non-instrumental impact (ISO 179-1:2000,

IDT)

ISO 13802:1999 Plastic pendulum impact tester for pendulum impact test, Izod impact test and tensile impact

Test (Plastics-Verification of pendulum impact-testing machines-Charpy, Izod and tensile impact-

Testing)

3 Terms and definitions

The following terms and definitions as defined in GB/T 1043.1-2008 apply to this document.

3.1

Impact speed impact velocity

V_0

The speed at which the impact knife is relative to the sample holder when an impact occurs. Expressed in meters per second (m/s).

3.2

Inertia peak

After the first time the impact knife contacts the sample, the sample is accelerated, and the force of the inertia of the contact portion is changed to form force-time or force-deflection.

The first peak on the curve. (See curve b in Figure 1, and Appendix A).

3.3

Impact force

The force exerted by the impact blade on the specimen in the direction of impact. Expressed in Newtons (N).

3.4

Deflection

The displacement of the impact knife relative to the sample holder during the impact is based on the position at which the impact knife and the sample first contact. In millimeters (mm) indicates.

3.5

Impact energy impactenergy

The energy consumed to accelerate, deform, and fracture the specimen at deflection s . Expressed in joules (J).

The measurement method is to calculate the integral area from the initial point of the impact to the deflection s below the force-deflection curve.

3.6

Maximum impact maximumimpactforce

FM

The force value at the maximum impact force on the force-time or force-deflection curve (see Figure 1). Expressed in Newtons (N).

3.7

Maximum impact deflection deflection atmaximumimpactforce

sM

Deflection at maximum impact force FM (see Figure 1). Expressed in millimeters (mm).