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

GB/T 37188.1-2019

**Plastics -- Acquisition and presentation of comparable
multipoint data -- Part 1: Mechanical properties**

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2 .1997, IDT);

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Foreword

GB/T 37188 `` Acquisition and Representation of Comparable Plastic Multipoint Data " is divided into 3 parts.

--- Part 1. Mechanical properties;

--- Part 2. Thermal and processing properties;

--- Part 3. Environmental impact on performance.

This part is the first part of GB/T 37188.

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

This section uses the translation method equivalent to ISO 11403-1..2014, "Acquisition and representation of comparable multi-point data for plastics. Part 1. Machines

Mechanical properties ".

The Chinese documents that have a consistent correspondence with the international documents referenced normatively in this section are as follows.

--- GB/T 1040.1-2018 Determination of tensile properties of plastics. Part 1. General (ISO 527-1..2012, IDT);

--- GB/T 1040.2-2006 Determination of tensile properties of plastics. Part 2. Test conditions for molded and extruded plastics

(ISO 527-2..1993, IDT);

--- GB/T 1043.1-2008 Determination of impact properties of simply supported plastic beams. Part 1. Non-instrumental impact test

(ISO 179-1..2000, IDT);

--- GB/T 1043.2-2018 Determination of impact properties of simply supported plastic beams. Part 2. Instrumented impact test (ISO 179-

2 .1997, IDT);

--- GB/T 5471-2008 Compression molding of plastic thermoset samples (ISO 295..2004, IDT);

--- GB/T 9352-2008 compression molding of plastic thermoplastic material samples (ISO 293..2004, IDT);

--- GB/T 17037.1-2019 Preparation of injection moulding samples of plastic thermoplastic materials. Part 1. General principles and versatility

Preparation of test specimens and strip specimens (ISO 294-1..2017, MOD);

--- GB/T 17037.3-2003 Preparation of injection moulding samples for plastics and thermoplastics. Part 3. Small test pieces

(ISO 294-3..2002, IDT);

--- GB/T 37426-2019 Plastic sample (ISO 20753..2018, MOD).

This section is proposed by the China Petroleum and Chemical Industry Federation.

This section is under the jurisdiction of the National Plastics Standardization Technical Committee (SAC/TC15).

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Introduction

GB/T 37188 is based on the findings of plastic users that when comparing the performance of similar materials, especially when the data sources are different, they cannot be used for similar materials.

Comparison of material properties. Even when the same standard test method is used, the data obtained is not sufficient due to the wide range of allowed test conditions.

Comparable. The purpose of this section is to identify specific methods and test conditions that can be obtained and represented as data so that materials can be

Make effective comparisons.

ISO 10350 is a standard for single-point data. The representation of this data is the most basic method for characterizing material properties.

Very useful. The current version specifies test conditions, test procedures, and more large-scale data representations. Multi-point data for each performance

Characterization, they show the relationship of this performance with many variables (such as time, temperature, environmental impact, etc.). This section also includes other

Some performance. This data helps determine whether the material is suitable for a particular application. Although some properties of the material are affected by its properties

The influence of the physical structure is great, and other data are needed from the design considerations, but some of the data obtained from this section can also be used to predict molding

Performance and optimal processing conditions. The tests in this section use multipurpose stretch splines wherever possible, but the polymer structure of the spline

It may still be significantly different from the specific area of the actual molded article. Therefore, in this case, the data obtained are not applicable to the performance of the product.

Accurate design calculations should be made with the material supplier for the applicability of the data required for special performance.

Each part of GB/T 37188 and ISO 10350 jointly determine the method of obtaining and representing a set of core comparable data used in material selection.

law. Adopting these standards can rationalize work while reducing the cost of obtaining data. In addition, reference to these standards can also help

Computer storage modeling of material performance data and data interchange.

This section appropriately specifies the variation of the test parameters, but for some tests, due to the corresponding test condition range for different plastic applications

It is very wide and gives guidelines for the selection of test conditions to ensure that the test conditions can cover the corresponding range when the polymer is applied. This

It is because in general, the properties and specific properties of different polymers are very different, so it is not necessary to update all the information in this section.

Data under test conditions.

In order to better select plastic materials and apply them to various applications, it is necessary to obtain their performance in a wide range.

The test procedures described in this section can help obtain some relevant information about various properties. GB/T 37188 is divided into several parts, each part

Points can be used independently. In order to develop new standards or revise this standard

to include some other properties.

Obtaining and Representing Comparable Multipoint Data for Plastics

Part 1. Mechanical properties

1 Scope

This part of GB/T 37188 specifies test methods for obtaining and representing multi-point data on the mechanical properties of plastics.

- Dynamic modulus;
- Test constant speed tensile properties;
- Ultimate stress and strain;
- tensile stress-strain curve;
- tensile creep;
- impact strength of simply supported beams;
- Piercing impact performance.

The test methods and test conditions in this section are mainly applicable to those that can be injection molded, molded, or made to a specified thickness by machining.

The right size sheet.

2 Normative references

The following documents are essential for the application of this document. For dated references, only the dated version applies to this article

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

ISO 179-1 Determination of impact properties of simply supported plastic beams. Part 1. Non-instrumentated impact tests (Plastics-

Determination of Charpy impact properties-Part 1. Non-instrumented impact)

ISO 179-2 Determination of impact properties of simply supported plastic beams. Part 2. Instrumentation test

Charpy impact properties-Part 2. Instrumented impact test)

ISO 293 Plastics-Compression Moulding of Test Specimens
of thermoplastic materials)