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

GB/T 37188.3-2019

**Plastics -- Acquisition and presentation of comparable
multipoint data -- Part 3: Environmental influences on
properties**

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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 Part 3 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 11403-3:2014, Obtaining and Representing Comparable Multipoint Data for Plastics. Part 3.

Environmental Impact on Performance.

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 2918-2018 Standard environment for the conditioning and testing of plastic specimens (ISO 291:2008, MOD);
- 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 27797 (all parts) Preparation method of fiber reinforced plastic test board [ISO 1268 (all parts)];

--- GB/T 37188.1-2019 The acquisition and representation of comparable multi-point data for plastics. Part 1. Mechanical properties
(ISO 11403-1..2014, 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

This part of GB/T 37188 is based on the fact that plastic users find that when comparing the performance of similar materials, especially when the data sources are different, they cannot

For comparison of similar material properties. Even when using the same standard test method, due to the wide range of allowed test conditions, the obtained

The data are also not comparable. The purpose of this standard is to identify specific methods and test conditions that can be used as data

Effective comparison can be made between materials.

ISO 10350 [4] [5] is a standard for single-point data. The representation of this data is the most basic method for characterizing materials.

The primaries are very useful. The current version specifies test conditions, test procedures, and more large-scale data representations. Every performance has multiple points

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

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

Its physical structure has a great impact, and other data are needed when considering design, but some data obtained by using this section can still be used for prediction.

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

The structure may still differ significantly from specific areas of the actual molded article. Therefore, in this case, the data obtained are not applicable to product properties.

For accurate design calculations, the data applicability for special properties should be consulted with the material supplier.

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. But for some performance, there is no

There are also significant shortcomings in establishing corresponding standards or this section, so it is difficult to obtain comparable data for these performances in accordance with this section (see appendix

A). GB/T 37188 is divided into several parts, and each part can be used independently. In order to develop new or revised standards

Can be included.

Obtaining and Representing Comparable Multipoint Data for Plastics

Part 3. Environmental impact on performance

1 Scope

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

- long-term thermal effects;
- Liquid chemicals;
- Stress cracking under constant tensile stress;
- Artificial aging.

The tests are arranged according to the severity of the environmental conditions. The test is performed first in the lightest degree, and the result can be used as a judgement

A reference for whether materials are worth testing in more demanding environments.

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 175 Test methods for determination of liquid chemical penetration effects in plastics (Plastics-Methodsoftestforthedeter-

determinationoftheeffectsofimmersioninliquidchemicals)

ISO 291 Standard Environment for Conditioning and Testing of Plastic Specimens (Placstics-Standardatmospheresforcondi-

tioningandtesting)

ISO 293 Plastics-Compression Moulding of Test Specimens

ofthermoplasticmaterials)

ISO 294-1 Preparation of injection-molded test specimens of plastic thermoplastic materials. Part 1. General principles and multi-purpose test specimens and strips

Preparation of test specimens (Plastics-Injection moulding of testspecimensofthermoplasticmaterials-Part 1.

(Generalprinciples, andmouldingofmultipurposeandbartestspecimens)

ISO 294-2 Injection molding of test specimens of plastics and thermoplastics. Part 2. Small tensile splines (Plastics-