GB

NATIONAL STANDARD OF THE

PEOPLE'S REPUBLIC OF CHINA

ICS 83.100

G 32

GB/T 6343-2009 / ISO 845:2006

Replacing GB/T 6343-1995

Cellular Plastics and Rubbers - Determination of Apparent Density

泡沫塑料及橡胶　表观密度的测定

(ISO 845:2006, IDT)

Issued on: May 4, 2009 **Implemented on: November 1, 2009**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine;
Standardization Administration of the People's Republic of China.

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Foreword

This standard is identical to "Cellular Plastics and Rubbers - Determination of Apparent Density" (ISO 845:2006), and its technical contents and text structure are identical to those of the latter.

This standard supersedes "Cellular Plastics and Rubbers - Determination of Apparent (Bulk) Density" (GB/T 6343-1995).

Compared with GB/T 6343-1995, the main changes in this standard are as follows:

- The standard name is revised as "Cellular Plastics and Rubbers - Determination of Apparent Density";
- The definition of volume density is deleted;
- The measuring error of balance is changed to 0.1% from 0.5% (Chapter 4 of this edition);

The specimen number is unified as 5 pieces; the special requirements of soft and semi-rigid material in the former standard are deleted; the description of "5.3 Conditioning" is modified (Chapter 5 in this edition);

- The number of dimension measuring points is specified (Chapter 6 in this edition);
- The application scope of "Formula (2)" is modified, the former closed-cell materials less than 30kg/m^3 is changed to those less than 15kg/m^3 (Chapter 7 in this edition);
- The expression of accuracy is added (Chapter 8 in this edition);
- The contents of test report are added.

This standard is proposed by China National Light Industry Council.

This standard shall be under the jurisdiction of National Technical Committee on Plastic Products of Standardization Administration of China.

Drafting organizations of this standard: Beijing Technology and Business University and China National Center for Quality Supervision & Test of Plastic Products (Beijing).

Chief drafting staff of this standard: Jin Wei and Chen Qian.

The previous edition of the standard superseded by this standard is as follows:

- GB/T 6343-1995.

Cellular Plastics and Rubbers - Determination of Apparent Density

1 Scope

This standard specifies a method for determining the apparent overall density and the apparent core density of cellular plastics and rubbers.

If the material to be tested includes skins formed during a molding/extrusion, the apparent overall density or the apparent core density, or both, can be determined.

If the material does not have skins formed during molding, the term "overall density" is not applicable.

For shaped materials, a different method such as buoyancy method may be used.

2 Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments to (excluding amending errors in the text), or revisions of, any of these publications do not apply. However, all parties coming to an agreement according to this standard are encouraged to study whether the latest edition of the normative document is applicable. For undated references, the latest edition of the normative document applies.

GB/T 2918-1998 Plastics - Standard Atmospheres for Conditioning and Testing (idt ISO 291:1997)

GB/T 6342-1996 Cellular plastics and rubbers - Determination of linear dimensions (idt ISO 1923: 1981)

3 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Apparent overall density

Mass per unit volume of a sample, including all skins formed during molding

3.2 Apparent core density

Mass per unit sample after all skins formed during molding have been removed

4 Apparatus

4.1 Balance

To an accuracy of 0.1%.

4.2 Measuring instruments

In accordance with GB/T 6342-1996.

5 Test Specimens

5.1 Dimensions

Each specimen shall be of a shape such that its volume can be easily calculated. It shall be cut without deforming the original cell structure of the material.

The size of a specimen should preferably be as large as possible, commensurate with the apparatus available and with the shape of the original material. The total volume of a specimen shall be at least 100cm^3.

For rigid materials, when the apparent overall density is being determined using a specimen cut from a larger sample, the ratio of the area of skin formed during molding to the total volume shall be the same for the specimen as for the sample.

5.2 Number

A minimum of 5 specimens shall be tested.

The sample may be a manufactured object whose mass and volume can be measured accurately. Its total mass and total volume may be used to determine the sample density.

5.3 Conditioning

5.3.1 For measurement purposes, wait at least 72h after manufacture before cutting the specimens from product samples.

If required, this period may be reduced to 48h or 16h if experience shows that, 48h or 16h after manufacture, the difference in density compared with the density 72h after manufacture is less than 10%.

5.3.2 The specimen shall be kept for at least 16h at standard atmospheres or in a desiccator (dry conditions) as defined below. This conditioning period may be part of the 72h period following manufacture.

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