



**International
Standard**

ISO 844

**Rigid cellular plastics —
Determination of compressive
properties**

*Plastiques alvéolaires rigides — Détermination des
caractéristiques de compression*

**Eighth edition
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 61, *Plastics*, Subcommittee SC 10, *Cellular plastics*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 249, *Plastics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This eighth edition cancels and replaces the seventh edition (ISO 844:2021), which has been technically revised.

The main changes are as follows:

- the term “compression” changed to “compressive” throughout the document, including the title;
- the scope has been modified to include details of Procedure A and Procedure B;
- “relative deformation” has been changed to “compressive strain”;
- “nominal relative deformation” has been changed to “nominal compressive strain”;
- “necking” has been changed to the more descriptive “force-drop”.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

For the determination of compressive properties, it is common practice to apply a uniform compressive deformation to a standard test specimen, especially for quality assurance. However, the test specimen has a complex and inhomogeneous deformation state, under compression, which is not subjected to further analysis in such an evaluation. Measurement results are, therefore, not easily transferable to other test specimens or products. This document describes Procedure A, which determines the nominal compressive properties. Procedure B determines conventional compressive properties.

Procedure A employs relative plate displacement for the determination of compressive properties.

Procedure B employs displacement measuring devices directly positioned on the specimen (contact or optical extensometer) or similar devices that measure the specimen displacement.

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Rigid cellular plastics — Determination of compressive properties

1 Scope

This document specifies methods for determining the compressive strength, the corresponding compressive strain, the compressive stress at 10 % nominal compressive strain, and the compressive modulus of rigid cellular plastics.

Two procedures are specified. Procedure A and Procedure B.

Procedure A utilizes the compression plate displacement for the nominal property determination. It is used to determine:

- compressive strength and the corresponding nominal compressive strain;
- compressive stress at 10 % nominal compressive strain;
- nominal compressive modulus.

Procedure B uses an extensometer and determines the conventional properties. It is used to determine:

- compressive strength and the corresponding compressive strain;
- compressive modulus.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 291, *Plastics — Standard atmospheres for conditioning and testing*

ISO 1923, *Cellular plastics and rubbers — Determination of linear dimensions*

ISO 7500-1, *Metallic materials — Calibration and verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Calibration and verification of the force-measuring system*

ISO 9513, *Metallic materials — Calibration of extensometer systems used in uniaxial testing*

3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>