
**Timber structures — Structural
insulated panel roof construction —
Test methods**

*Structures en bois — Panneaux sandwich porteurs isolants pour
toitures — Méthode d'essais*

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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.

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/TC 165, *Timber structures*.

Introduction

This International Standard includes tests for tensile bonding strength of the panels, ageing, shear, creep performance, horizontal in-plane performance and out-of-plane bending performance. The tests applicable to panels for particular applications are indicated, while the test requirements include laboratory conditions, some advice is given in notes on the numbers of samples to be tested and the reporting of results.

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Timber structures — Structural insulated panel roof construction — Test methods

1 Scope

This International Standard specifies test methods for determining, for use in roofs, the structural properties of double-sided load bearing structural insulated panels having

- two face layers, at least one of which is a wood-based structural panel, and
- a core made of a thermally insulating material having sufficient shear strength to cause the face layers to act together structurally.

NOTE 1 Gypsum-based structural boards can be used as one face layer.

NOTE 2 Panels can contain internal framing or bracing.

NOTE 3 The performance of panels with non-structural insulation is generally calculable according to design codes such as EN 1995-1-1, or tested according to appropriate standards.

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.

ASTM D7446-09, *Standard Specification for Structural Insulated Panel (SIP) Adhesive for Laminating Oriented Strand Board (OSB) to Rigid Cellular Polystyrene Thermal Insulation Core materials*

ASTM D1183, *Standard Practices for Resistance of Adhesives to Cyclic Laboratory Aging Conditions*

3 Terms and definitions

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

3.1

structural insulated panel

SIP

panel with two load bearing skins, one *bonded* (3.4) to each face of a rigid, lightweight, homogenous core material with sufficient shear strength to cause the face layers to act together structurally

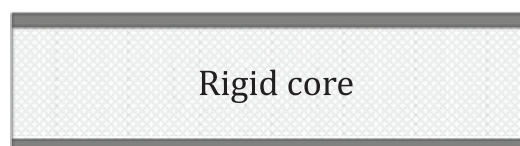


Figure 1 — Cross section of a structural insulated panel

Note 1 to entry: Homogenous core is made of one material with no internal joints requiring bonding.