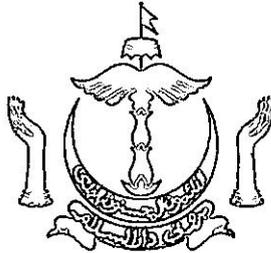


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PLAWAI BRUNEI DARUSSALAM
BRUNEI DARUSSALAM STANDARD

Timber Structures – Testing of Unilateral Punched Metal Plate Fasteners and Joints

MINISTRY OF DEVELOPMENT
NEGARA BRUNEI DARUSSALAM

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**Construction Planning and Research Unit
Ministry of Development
Old Airport, Jalan Berakas
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Negara Brunei Darussalam**

Timber Structures – Testing of Unilateral Punched Metal Plate Fasteners and Joints

PIAWAI BRUNEI DARUSSALAM

PBD ISO 8969

First Edition

PBD ISO 8969

National Foreword

This Brunei Darussalam Standard reproduces verbatim ISO 8969: 1990 and implements it as the Brunei Darussalam National Standard.

This Brunei Darussalam Standard is published under the direction of the Technical Committee on Timber Standards.

Attention is drawn to the fact that this Brunei Darussalam Standard does not confer any immunity from legal obligations in any contract for compliance to the Standard.

The Brunei Darussalam Standards are subject to periodical review according to the current needs of the local industries to keep abreast of progress in the industries concerned. Suggestions of amendments will be recorded and in due course brought to the notice of the committees concerned.

Amendments issued since publication :

Amd No.	Date of issue	Text affected

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INTERNATIONAL
STANDARD

ISO
8969

First edition
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**Timber structures — Testing of unilateral
punched metal plate fasteners and joints**

*Structures en bois — Essai des connecteurs métalliques de fixation à dents
embouties unilatéralement et des assemblages*



Reference number
ISO 8969 : 1990 (E)

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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 8969 was prepared by Technical Committee ISO/TC 165, *Timber structures*.

Annex A forms an integral part of this International Standard.

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Timber structures — Testing of unilateral punched metal plate fasteners and joints

1 Scope

This International Standard specifies test methods for determining the strength and stiffness of joints made with punched metal plate fasteners in load-bearing timber structures, as follows:

- a) load-slip characteristics and maximum load resulting from the lateral resistance of the embedded projections, at various angles between the direction of the applied force and
 - the axis of the plate (load-plate angle α),
 - the direction of the grain of the timber (load-grain angle β);
- b) the tensile strength of the plate at various angles α ;
- c) the compression strength of the plate at various angles α ;
- d) the shear strength of the plate at various angles α .

This International Standard is linked to ISO 6891, which gives general test requirements.

In addition, a method for testing the nail root in alternate bending is specified in annex A.

NOTE — This International Standard is based on the recommendations of the joint committee RILEM/CIB 3TT (Working Commission W 18, *Timber structures*, of the International Council for Building Research, Studies and Documentation, and Commission 3TT, *Testing methods for timber*, of the International Union of Testing and Research Laboratories for Materials and Structures respectively) published (in English and French) in *Matériaux et Constructions*, Vol. 15, No. 88, 1982.

The nail bend test is based on European Union of Agrément M.O.A.T. No. 16:1979.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated

were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3130:1975, *Wood — Determination of moisture content for physical and mechanical tests*.

ISO 3131:1975, *Wood — Determination of density for physical and mechanical tests*.

ISO 6891:1983, *Timber structures — Joints made with mechanical fasteners — General principles for the determination of strength and deformation characteristics*.

ISO 8970:1989, *Timber structures — Testing of joints made with mechanical fasteners — Requirements for wood density*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 punched metal plate fastener: Fastener made of metal plate of thickness not less than 0,9 mm and not more than 2,5 mm, having integral projections punched out in one direction and bent perpendicular to the plane of the plate, being used as a splice plate to join two or more pieces of timber of the same thickness. For this purpose the projections of the plate are fully embedded in the timber, using a press or roller, so that the contact surface of the plate is flush with the surface of the timber.

3.2 axis of plate: Direction giving the highest tensile strength of the plate (since in many cases the punching pattern of the plate gives rise to two main directions perpendicular to each other with different strength properties).

4 Symbols

The following symbols are used in this International Standard:

- | | |
|-----|------------------------------------|
| b | width of plate, in millimetres; |
| h | depth of specimen, in millimetres; |