



DRAFT TANZANIA STANDARD

Physical and mechanical properties of wood - Test methods for small clear wood specimens - Part 7: Determination of ultimate tensile stress perpendicular to grain

TANZANIA BUREAU OF STANDARDS

This draft Tanzania Standard was published under the authority of the Board of Directors of Tanzania Bureau of Standards on yy-mm-dd.

Tanzania Bureau of Standards (TBS) is the statutory national standards body for Tanzania established under the Standards Act No. 3 of 1975, repealed and replaced by the Standards Act No. 2 of 2009.

The Building and Construction Divisional Standards Committee (BCDC), under whose supervision this Tanzania Standard was prepared, consists of representatives from the following organizations:

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 - Ministry of Works and Transport (MoWT)

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 - Tanzania Forestry Research Institute (TAFORI)

 - Sokoine University of Agriculture (SUA)

 - Sao Hill Industries Ltd

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0 National Foreword

The Tanzania Bureau of Standards is the statutory national standards body for Tanzania, established under standards Act No. 3 of 1975, amended by Act No. 2 of 2009.

This draft Tanzania Standard is being prepared by BCDC 6 Sawn timber, Sawn logs and Wood based Components technical committee under the supervision of the Building and Construction Divisional Committee (BCDC).

This draft Tanzania Standard is the identical adoption of *ISO 13061-7:2014 Physical and mechanical properties of wood - Test methods for small clear wood specimens - Part 7: Determination of ultimate tensile stress perpendicular to grain* published by International Organization for Standardization.

This draft Tanzania Standard replaces TZS 2043-7: 2017 *Physical and mechanical properties of wood - Test methods for small clear wood specimens - Part 7: Determination of ultimate tensile stress perpendicular to grain* which has been revised.

Terminologies and conventions

The text of the International Standard is hereby recommended for approval without modification.

Some terminologies and certain conventions are not identical with those used as Tanzania Standard; attention is drawn to the following:

The comma (,) has been used as decimal marker (.) for metric dimensions. In Tanzania Standards, its current practice to use a full point on the baseline as decimal marker.

Whenever the words "International Standard" appear, referring to this standard, they should be interpreted as "Tanzania Standard".

**Physical and mechanical properties of
wood — Test methods for small clear
wood specimens —**

**Part 7:
Determination of ultimate tensile
stress perpendicular to grain**

*Propriétés physiques et mécaniques du bois — Méthodes d'essais sur
échantillons de bois sans défauts —*

*Partie 7: Détermination de la contrainte de rupture en traction
perpendiculaire aux fibres*





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Published in Switzerland

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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 documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 WTO principles in the Technical Barriers to Trade (TBT), see the following URL: [Foreword — Supplementary information](#).

The committee responsible for this document is ISO/TC 218, *Timber*.

This first edition of ISO 13061-7 cancels and replaces ISO 3346:1975, which has been technically revised with regards to the sizes, moisture content of test pieces, and adjustment for moisture content.

ISO 13061 consists of the following parts, under the general title *Physical and mechanical properties of wood — Test methods for small clear specimens*:

- *Part 1: Determination of moisture content for physical and mechanical tests*
- *Part 2: Determination of density for physical and mechanical tests*
- *Part 3: Determination of ultimate strength in static bending*
- *Part 4: Determination of modulus of elasticity in static bending*
- *Part 6: Determination of ultimate tensile stress parallel to grain*
- *Part 7: Determination of ultimate tensile stress perpendicular to grain*

The following are under preparation:

- *Part 5: Determination of strength in compression perpendicular to grain*
- *Part 10: Determination of impact bending strength*
- *Part 11: Determination of resistance to impact indentation*
- *Part 12: Determination of static hardness*
- *Part 13: Determination of radial and tangential shrinkage*
- *Part 14: Determination of volumetric shrinkage*
- *Part 15: Determination of radial and tangential swelling*

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- *Part 16: Determination of volumetric swelling*
- *Part 17: Determination of strength in compression parallel to grain*

Introduction

The main purpose of this International Standard is to establish the common international point of member countries of the International Organization for Standardization (ISO), concerning testing methods for small clear wood specimens and general requirements for determining physical and mechanical properties of wood.

Physical and mechanical properties of wood — Test methods for small clear wood specimens —

Part 7:

Determination of ultimate tensile stress perpendicular to grain

1 Scope

This part of ISO 13061 specifies a method for the determination of ultimate tensile stress of wood perpendicular to grain of small clear specimens in the radial and tangential directions by measuring the breaking load applied statically perpendicular to the longitudinal axis of a test piece.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 3129, *Wood — Sampling methods and general requirements for physical and mechanical testing of small clear wood specimens*

ISO 13061-1, *Physical and mechanical properties of wood — Test methods for small clear specimens — Part 1: Determination of moisture content for physical and mechanical tests*

ISO 13061-2, *Physical and mechanical properties of wood — Test methods for small clear specimens — Part 2: Determination of density for physical and mechanical tests*

ISO 24294, *Round and Sawn Timber — Vocabulary*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in ISO 24294 apply.

4 Principle

The ultimate tensile stress perpendicular to grain is determined by application of a gradually increasing load in the direction perpendicular to the grain of a test piece until failure.

5 Apparatus

5.1 Testing machine capable of ensuring constant rate of loading or of movement of the loading head and allowing measurement of the load to an accuracy of 1 %.

The grips of the testing machine shall be such that the load is applied perpendicular to its longitudinal axis of the test piece and shall prevent twisting of the test piece.

5.2 Measuring instrument capable of measuring the dimensions of the gauge portion of the test piece to the nearest 0,1 mm.

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