

Ladders - Part 2: Requirements, testing, marking
CONSOLIDATED TEXT

This document is a preview generated by EVS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 131-2:2010+A1:2012 sisaldab Euroopa standardi EN 131-2:2010+A1:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 131-2:2010+A1:2012 consists of the English text of the European standard EN 131-2:2010+A1:2012.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.05.2012.	Date of Availability of the European standard is 23.05.2012.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 97.145

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:
Aru 10, 10317 Tallinn, Eesti; www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:
Aru 10, 10317 Tallinn, Estonia; www.evs.ee; phone 605 5050; e-mail info@evs.ee

English Version

Ladders - Part 2: Requirements, testing, marking

Échelles - Partie 2: Exigences, essais, marquage

Leitern - Teil 2: Anforderungen, Prüfung, Kennzeichnung

This European Standard was approved by CEN on 20 May 2010 and includes Amendment 1 approved by CEN on 16 April 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents	Page
Foreword.....	3
Introduction.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	6
4 Requirements	6
4.1 General.....	6
4.2 Materials.....	7
4.3 Design.....	12
4.4 Surface finish.....	12
4.5 Hinges (turning points).....	13
4.6 Opening restraints.....	13
4.7 Rungs/steps/platforms.....	13
4.8 Platform.....	15
4.9 Antiskid devices.....	15
4.10 Extending and sectional ladders.....	15
5 Testing	15
5.1 General.....	15
5.2 Strength test of stiles.....	16
5.3 Bending test of the stiles.....	16
5.4 Lateral deflection test of the ladder.....	17
5.5 Bottom stile ends test.....	18
5.6 Vertical load on rungs, steps and platforms.....	19
5.7 Torsion test of rungs and steps.....	20
5.8 Test of opening restraints and hinges of standing ladders.....	21
5.9 Test for ladder rung/step hooks of extending ladders and combination ladders.....	22
5.10 Kick-up test of the platform of standing ladders.....	23
5.11 Feet pull test.....	24
5.12 Test on hand-/kneerails.....	26
5.13 Maximum extension of ladder.....	28
5.14 3-part combination ladder in A-position test.....	28
5.15 Torsion on ladder length.....	28
5.16 Test methods for plastic ladders.....	30
6 Marking and user instructions	34
7 Certification	34
Annex A (normative) Test sequence	35
Annex B (informative) A-deviations	37
Bibliography	40

Foreword

This document (EN 131-2:2010+A1:2012) has been prepared by Technical Committee CEN/TC 93 "Ladders", the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2012 and conflicting national standards shall be withdrawn at the latest by November 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes A1 EN 131-2:2010 A1.

This document includes Amendment 1, approved by CEN on 2012-04-16.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 A1.

This standard is a revised version of EN 131-2:1993. Compared to the version EN 131-2:1993 the following modifications have been made:

The specifications for plastics in 4.2.3, for wood in 4.2.4 and the test methods in Clause 5 have been completely revised.

This European Standard is one of a series about ladders. The other standards of this series are listed in Clause 2 and in the Bibliography.

On stability tests and ladder classes no consensus could be reached. These issues will be addressed in the next revision.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Due to the unhomogeneity of the material wood, special requirements have been appropriated on this item.

This document is a preview generated by EVS

1 Scope

This European Standard specifies the general design features, requirements and test methods for portable ladders.

It does not apply to step stools or ladders for specific professional use such as firebrigade ladders, roof ladders and mobile ladders.

It does not apply to ladders used for work on or near live electrical systems or installations. For this purpose EN 61478 applies.

NOTE For insulating ladders for use on or near low voltage electrical installations in the range below 1000 V a.c or 1 500 V d.c. EN 50528 is under preparation.

This European Standard is intended to be used in conjunction with EN 131-1.

For single or multiple hinge joint ladders EN 131-4 applies.

2 Normative references

The following referenced documents are indispensable for the application 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.

EN 59, *Glass reinforced plastics — Measurement of hardness by means of a Barcol impressor*

EN 131-1:2007, *Ladders — Part 1: Terms, types, functional sizes*

EN 131-3, *Ladders — Part 3: User Instructions*

EN 204, *Classification of thermoplastic wood adhesives for non-structural applications*

EN 301, *Adhesives, phenolic and aminoplastic, for load-bearing timber structures — Classification and performance requirements*

EN 385, *Finger jointed structural timber — Performance requirements and minimum production requirements*

EN 386:2001, *Glued laminated timber — Performance requirements and minimum production requirements*

EN 391:2001, *Glued laminated timber — Delamination test of glue lines*

EN 392, *Glued laminated timber — Shear test of glue lines*

EN 408, *Timber structures — Structural timber and glued laminated timber — Determination of some physical and mechanical properties*

EN 844-9:1997, *Round and sawn timber — Terminology — Part 9: Terms relating to features of sawn timber*

EN 1310, *Round and sawn timber — Method of measurement of features*

EN 61478, *Live working — Ladders of insulating material (IEC 61478:2001)*

EN ISO 179-1, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test (ISO 179-1:2000)*

EN ISO 527-1, *Plastics — Determination of tensile properties — Part 1: General principles (ISO 527-1:1993 including Corr 1:1994)*

EN ISO 527-2, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:1993 including Corr 1:1994)*

EN ISO 3834-1, *Quality requirements for fusion welding of metallic materials — Part 1: Criteria for the selection of the appropriate level of quality requirements (ISO 3834-1:2005)*

EN ISO 3834-2, *Quality requirements for fusion welding of metallic materials — Part 2: Comprehensive quality requirements (ISO 3834-2:2005)*

EN ISO 3834-3, *Quality requirements for fusion welding of metallic materials — Part 3: Standard quality requirements (ISO 3834-3:2005)*

EN ISO 3834-4, *Quality requirements for fusion welding of metallic materials — Part 4: Elementary quality requirements (ISO 3834-4:2005)*

EN ISO 4892-2:2006, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 6892-1, *Metallic materials — Tensile testing — Part 1: Method of test at room temperature (ISO 6892-1:2009)*

EN ISO 14125, *Fibre-reinforced plastic composites — Determination of flexural properties (ISO 14125:1998)*

EN ISO 14731, *Welding coordination — Tasks and responsibilities (ISO 14731:2006)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 131-1:2007 and the following apply.

3.1

thermoset plastic

plastic that has been cured by heat or by other means such as radiation, catalysts, etc., into a substantially infusible and insoluble state

[EN ISO 472:2001]

3.2

composite material

crosslinkable resin-based material with a continuous reinforcement fibre as filler (e.g. fibreglass)

3.3

thermoplastic material

plastic material other than thermoset plastic or composite with or without filler and with or without reinforcement

3.4

maximal total load

maximum weight that the ladder is designed to support when set up in accordance with the manufacturer's instruction

4 Requirements

4.1 General

The requirements are based upon a maximum total load of 150 kg.