
Delež vlage v žaganem lesu – 2. del: Ocena z metodo električne upornosti

Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method

Feuchtegehalt eines Stückes Schnittholz - Teil 2: Schätzung durch elektrisches Widerstands-Messverfahren

Teneur en humidité d'une pièce de bois scié - Partie 2: Estimation par méthode électrique par résistance

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ICS:

79.040	Les, hlodovina in žagan les	Wood, sawlogs and sawn timber
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13183-2

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ICS 79.040

English version

**Moisture content of a piece of sawn timber - Part 2: Estimation
by electrical resistance method**

Teneur en humidité d'une pièce de bois scié - Partie 2:
Estimation par méthode électrique par résistance

Feuchtegehalt eines Stückes Schnittholz - Teil 2:
Schätzung durch elektrisches Widerstands-Messverfahren

This European Standard was approved by CEN on 29 December 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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EN 13183-2:2002 (E)

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Foreword

This document EN 13183-2 has been prepared by CEN/TC 175 "Round and sawn timber", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by October 2002, and conflicting national standards shall be withdrawn at the latest by October 2002.

This standard is one of a series, dealing with methods of measurement for round timber and sawn timber.

Other standards in this series are:

- | | | |
|------------|---|--|
| EN 13183-1 | : | Moisture content of a piece of sawn timber ~ Part 1: Determination by oven dry method. |
| EN 1309-1 | : | Round and sawn timber - Method of measurement of dimensions - Part 1: Sawn timber. |
| EN 1310 | : | Round and sawn timber - Method of measurement of features. |
| EN 1311 | : | Round and sawn timber - Method of measurement of biological degrade. |

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Annex A is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard defines a non-destructive method for estimating the moisture content of a piece of sawn timber using an electrical resistance moisture meter.

This standard applies to sawn timber, and timber which has been planed or mechanically surfaced by other means.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 844-1, *Round and sawn timber - Terminology - Part 1: General terms common to round timber and sawn timber.*

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EN 844-3, *Round and sawn timber - Terminology - Part 3: General terms relating to sawn timber.*

EN 844-4, *Round and sawn timber - Terminology - Part 4: Terms relating to moisture content.*

EN 844-6, *Round and sawn timber - Terminology - Part 6: Terms relating to dimensions of sawn timber.*

EN 844-7, *Round and sawn timber - Terminology - Part 7: Terms relating to anatomical structure of timber.*

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

EN 844-12, *Round and sawn timber - Terminology - Part 12: Additional terms and general index.*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions of EN 844-1, EN 844-3, EN 844-4, EN 844-6, EN 844-7, EN 844- 9 and EN 844-12 apply.

4 Limits of application

This method is suitable for timber having a moisture content between approximately 7 % and 30 %.

Some types of preservative, flame retardant, heat or chemical treatments will affect the accuracy of the measurement and require special calibration of the instrument for each type of treatment.

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5 Apparatus

Electrical resistance moisture meter equipped with insulated electrodes, graduated up to 30 % in units of maximum 1 % moisture content.

The meter shall be equipped with settings or tables to correct for wood species and temperature.

6 Compliance

Before taking measurements the electrical resistance moisture meter shall be checked according to the instructions provided by the supplier of the instrument.

NOTE For checking the accuracy of the instrument, resistance check boxes are available.

7 Procedure

Use the following procedure for estimating the moisture content of individual pieces included in lots or consignments.

Correct the electrical resistance moisture meter reading to take into consideration the temperature and species of the timber being measured.

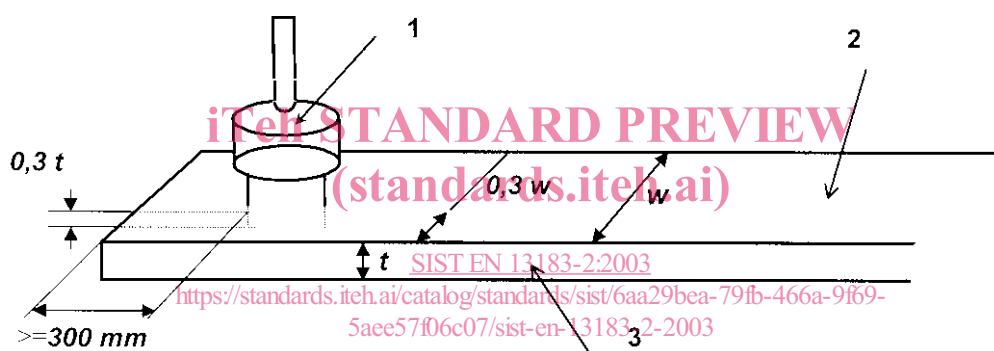
Normally take the measurement in the direction of the grain. Take the measurement at right angles to the grain if specially requested in the manual for the instrument.

Because of the strong effects of surface moisture content and possible variations of moisture content in the cross section, use insulated electrodes with undamaged insulation.

Drive the electrodes into one face of the piece, at a point at least 300 mm from either end of the piece (or at the mid point of pieces less than 600 mm long) and at a distance of 0,3 times the width from one edge, so that the tips of the electrodes penetrate to a depth of 0,3 times the thickness of the piece (see Figure 1). The measurement area shall be free from resin wood and features such as bark, knots and resin pockets. If such features exist, take the measurement at the nearest clear area towards the centre of the piece.

Take the reading after it has been displayed for 2 s to 3 s.

Dimensions in millimetres



Key

- 1 Hammer electrode
- 2 Face
- 3 Edge
- t thickness
- w width

Figure 1 - Place of measurement

8 Expression of results

Express the estimated moisture content reading at least to the nearest whole percentage point.

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Annex A (informative)

Moisture content of a lot

Increasing the number of measurements taken on individual test pieces does not increase significantly the accuracy of the result when estimating the moisture content of a lot or consignment.

If necessary, for example when estimating the moisture content of a single test piece, or estimating the moisture content of a lot, sampling and testing frequencies should comply with those given in Table A.1.

Table A.1 – Sampling and testing frequencies

Number of tested pieces	Number of measurements per test piece (Note)
1	3
2	3
3	2
4	2
5	2
>5	1
NOTE Measurements should be taken at random along the length excluding 300 mm at each end (or at the mid point of pieces less than 600 mm long). All results of measurement should be noted.	

The individual test results should be recorded together with at least the following: specification of the lot of timber (number, internal coding, supplier, customer, etc), species, dimensions, date, type of instrument used, species setting, temperature setting, penetration depth.