# SLOVENSKI STANDARD
# SIST EN 1195:2000

**01-april-2000**

---

**Lesene konstrukcije - Metode preskušanja - Nosilnost in deformabilnost konstrukcijskih talnih oblog**

Timber structures - Test methods - Performance of structural floor decking

Holzbauwerke - Prüfverfahren - Tragverhalten tragender Fußbodenbeläge

Structures en bois - Méthodes d'essais - Comportement des planchers structuraux



**Ta slovenski standard je istoveten z:** **EN 1195:1997**



---

**ICS:**

91.080.20 Lesene konstrukcije Timber structures

**SIST EN 1195:2000** **en**

# EUROPEAN STANDARD
# NORME EUROPÉENNE
# EUROPÄISCHE NORM

**EN 1195**

October 1997

ICS 91.060.30; 91.080.20

Descriptors: timber construction, wooden floors, tests, impact tests, static tests, loadings, stiffness tests, comparative tests, test results

English version

## Timber structures - Test methods - Performance of structural floor decking

Structures en bois - Méthodes d'essais - Comportement des planchers structuraux

Holzbauwerke - Prüfverfahren - Tragverhalten tragender Fußbodenbeläge

This European Standard was approved by CEN on 2 October 1997.

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 Central Secretariat 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 Central Secretariat 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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

## Contents

## Foreword

This European Standard has been prepared by Technical Commitee CEN/TC 124 "Timber structures", the secretariat of wich is held by DS.

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 April 1998, and conflicting national standards shall be withdrawn at the latest by April 1998.

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This standard specifies test methods for determining the performance of structural floor decking subjected to



- specified concentrated static load (due e.g. to imposed action from persons, furniture and equipment),



and

- specified impact loads (produced e.g. by human motion).

The decking considered is constructed of boards, laminated boards or wood based panel products supported on timber joists.

## 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 any 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.

| | |
|---|---|
| EN 322 | Wood-based panels - Determination of moisture content |
| EN 323 | Wood-based panels - Determination of density |

## 3 Definitions

For the purposes of this standard, the following definitions apply:

**3.1 set**: Residual deformation of the test floor after the removal of the applied load.

**3.2 differential set**: Differing residual deformations at joints in the decking after the removal of the test load.

**3.3 structural floor decking**: Specified assembly of decking of boards or wood based panel products. The characteristic of the decking is that it is supported by joists and, when subjected to load, free to deflect between the joists.

**3.4 board**: Floor decking material of sawn and processed solid timber.



**3.5 panel**: Floor decking material of wood based panel products (e.g. particleboard or plywood).



**3.6 method of support**: The way in which the floor decking material is supported (e.g. simply or continuously supported), together with the form of fixing the floor decking material to the supports (e.g. nailing, screwing and/or gluing).

## 4 Symbols

$F$ applied load, in newtons;

$F_{max}$ maximum load, in newtons;

$F_{max,est}$ estimated maximum load, in newtons;

$R$ stiffness of the structural floor decking, in newtons per millimetre;

$w$ deformations, in millimetres;

$w_m$ mean value of the deformations in a test, in millimetres;

## 5 Requirements

The manufacture and assembly of the test floor decking shall comply with the manufacturer's specification.

NOTE: Typical types of test floor deckings are shown in annex A.

## 6 Test methods

### 6.1 Principle

The test floor decking shall be placed horizontally on a rigid base, the appropriate static or impact loads shall be applied and the corresponding deformations measured, and damage observed.



### 6.2 Apparatus

**6.2.1 Static load test.** The loading equipment used shall be capable of measuring the load to an accuracy of 2 % of the load applied or, for loads less than 10 % of the maximum load, with an accuracy of 0,2 % of the maximum load. The deformations shall be measured to within an accuracy of



0,05 mm for values of up to 2,5 mm, and

0,1 mm for values greater than 2,5 mm.

The test apparatus, shown diagramatically in annex A (which is used primarily to show a typical set up of the test floor decking) consists of the following:

a) rigid base of structural steel (or equivalent) members positioned under, and providing continuous support to, the test floor joists. The test floor joists shall be fixed to the supports;

b) device for applying a vertical concentrated static load. The load shall be applied through a flat steel surface with a diameter of (25 ± 0,1) mm and with the edge of the contact surface rounded with a radius of 2 mm;

NOTE: The load will normally be transferred to the test floor by means of a steel frame (yoke), see figure A.3. This frame should normally have a length of at least 250 mm to ensure that only insignificant horizontal forces occur;

c) equipment for measuring deformations of the board or panel relative to the supporting joists at the point of application of the loads;

d) equipment for recording loads and deformation according to the loading procedures specified, see 6.4. Alternatively equipment for measuring deformations at chosen loads may be used, provided the measurements can be carried out without significantly influencing the continuity of the load application;

e) device for measuring the set of the upper surface of the test floor at the point of application of the load. The set shall be measured, in relation to the upper surface, at points vertically above the supports;

f) device for measuring the differential set and deformation at joints measured on the upper surface.

NOTE: An example of a suitable device is shown in annex A.

**6.2.2 Impact load test.** The impact load test apparatus consists of the following:

a) leather bag containing a thin polyethylene bag of the same form and size and filled with hardened solid glass spheres of (3 ± 0,5) mm diameter and having a mass of (30 ± 0,6) kg and (250 ± 2) mm in diameter.



NOTE: A form of bag which can be used is shown in annex B;



b) device for hoisting and instantaneous release of the bag;

c) measuring rods with lengths equal to the prescribed drop heights ± 1 mm;

d) device for measuring the set, to the nearest 0,1 mm, of the upper surface of the floor at the point of impact. The set shall be measured in relation to the points vertically above the supports;

e) device for measuring differential set at joints to the nearest 0,1 mm, measured on the upper surface of the test floor.

Sufficient free space shall be available under the test floor so as to permit the bottom of the bag to penetrate the flooring material at failure.

## 6.3 Preparation of specimens

**6.3.1 Conditioning.** The tests shall be carried out on structural floor decking made from material which has been conditioned at the standard environment of (20 ± 2) °C and (65 ± 5) % relative humidity. The material is conditioned when it attains constant mass. Constant mass is considered to be attained when the results of two successive weighings, carried out at an interval of 6 h, do not differ by more than 0,1 % of the mass of the test specimen.

The density of the structural floor decking materials shall be determined in accordance with EN 323. The moisture content of the structural floor decking materials shall be determined in accordance with EN 322.

Where the material to be tested is not readily conditionable to the above standard environment (e.g. for hardwoods with high densities), that fact shall be reported.

The tests shall be carried out within 48 h of removal of the floor decking material from the conditioning environment. During this period (48 h max.) the floor shall be kept in an environment of (20 ± 5) °C and (60 ± 20) % relative humidity.

**6.3.2 Test laboratory.** The test laboratory shall normally be maintained at the standard environment of (20 ± 2) °C and (65 ± 5) % relative humidity, but when other conditions apply, they shall be reported.

## 6.4 Procedure



**6.4.1 Static load.** Points of loading closer to the end beams, see figures A.1a) and A.1b), than
300 mm for boards and 600 mm for panels shall not be used. The set at the point of loading and the differential set and deflection at joints shall be recorded. The points of loading shall be chosen at the most vulnerable points on the test floor.



**6.4.1.1 Stiffness test.** The test floor shall be placed horizontally on its supports and fixed (see 6.2.1). The loading procedure used shall be as shown in figure 1a), using one of the following methods for measuring deformations at points 01, 04, 14, 11, 21 and 24:

a) on the underside of the board or panel. A displacement transducer shall be placed in the centre of the load, or

b) taken as the displacement of the loading disc relative to the bearing.