

SLOVENSKI STANDARD

SIST EN 438-1:2016

01-april-2016

Nadomešča:
SIST EN 438-1:2005

**Dekoratívni visokotlačni laminati (HPL) - Plošče na osnovi duromernih smol - 1.
del: Uvod in splošne informacije**

High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins
(Usually called Laminates) - Part 1: Introduction and general information

Dekorative Hochdruck-Schichtpressstoffplatten (HPL) - Platten auf Basis härtpbarer Harze
(Schichtpressstoffe) - Teil 1: Einleitung und allgemeine Informationen

Stratifiés décoratifs haute pression (HPL) - Plaques à base de résines
thermodurcissables (communément appelées stratifiés) - Partie 1: Introduction et
informations générales

Ta slovenski standard je istoveten z: EN 438-1:2016

ICS:

83.140.20	Laminatne plošče	Laminated sheets
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SIST EN 438-1:2016

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 438-1

February 2016

ICS 83.140.20

Supersedes EN 438-1:2005

English Version

**High-pressure decorative laminates (HPL) - Sheets based
on thermosetting resins (usually called laminates) - Part 1:
Introduction and general information**

Stratifiés décoratifs haute pression (HPL) - Plaques à
base de résines thermodurcissables (communément
appelées stratifiés) - Partie 1: Introduction et
informations générales

Dekorative Hochdruck-Schichtpressstoffplatten (HPL)
- Platten auf Basis härthbarer Harze (Schichtpressstoffe)
- Teil 1: Einleitung und allgemeine Informationen

This European Standard was approved by CEN on 13 December 2015.

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, Former Yugoslav Republic of Macedonia, 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

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European foreword

This document (EN 438-1:2016) has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by NBN.

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 August 2016, and conflicting national standards shall be withdrawn at the latest by August 2016.

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 EN 438-1:2005.

EN 438, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates)*, consists of the following parts:

- *Part 1: Introduction and general information*
- *Part 2: Determination of properties*
- *Part 3: Classification and specifications for laminates less than 2 mm thick intended for bonding to supporting substrates*
- *Part 4: Classification and specifications for Compact laminates of thickness 2 mm and greater*
- *Part 5: Classification and specifications for flooring grade laminates less than 2 mm thick intended for bonding to supporting substrates*
- *Part 6: Classification and specifications for Exterior-grade Compact laminates of thickness 2 mm and greater*
- *Part 7: Compact laminate and HPL composite panels for internal and external wall and ceiling finishes*
- *Part 8: Classification and specifications for design laminates*
- *Part 9: Classification and specifications for alternative core laminates*

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, Former Yugoslav Republic of Macedonia, 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.

EN 438-1:2016 (E)**1 Scope**

This part of EN 438 gives an overview of the standard, and provides guidance in the selection and application of test methods and specifications contained in EN 438-2, EN 438-3, EN 438-4, EN 438-5, EN 438-6, EN 438-7, EN 438-8 and EN 438-9.

This European Standard is applicable to high-pressure decorative laminate(s) (HPL) produced by using a high pressure process.

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.

EN 438-2, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called Laminates) — Part 2: Determination of properties*

EN 438-3, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 3: Classification and specifications for laminates less than 2 mm thick intended for bonding to supporting substrates*

EN 438-4, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 4: Classification and specifications for Compact laminates of thickness 2 mm and greater.*

EN 438-5, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 5: Classification and specifications for flooring grade laminates less than 2 mm thick intended for bonding to supporting substrates*

EN 438-6, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 6: Classification and specifications for Exterior-grade Compact laminates of thickness 2 mm and greater*

EN 438-7, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 7: Compact laminate and HPL composite panels for internal and external wall and ceiling finishes*

EN 438-8, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 8: Classification and specifications for design laminates*

EN 438-9, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 9: Classification and specifications for alternative core laminates*

EN 13329, *Laminate floor coverings — Elements with a surface layer based on aminoplastic thermosetting resins — Specifications, requirements and test methods*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1**high-pressure decorative laminate(s)****HPL**

sheet(s) consisting of decorative surface layer(s) and core layers bonded together by a high pressure process

Note 1 to entry: Typical values for the high pressure process are a temperature of ≥ 120 °C and a pressure of ≥ 5 MPa.

3.2**surface layer**

upper decorative layer consisting in one or more sheets of fibrous material (usually paper) impregnated with aminoplastic thermosetting resins (usually melamine based resins) or other curable resins or other decorative design surfaces such as metal foils, wood-veneers and textiles, etc. which are not necessarily treated with thermosetting resin

Note 1 to entry: The surface layers can appear on one or both side(s) of the laminate(s). In case of one-sided laminates, the back of the sheet(s) may be made suitable for adhesive bonding to a substrate.

3.3**core layer**

fibrous material (usually paper) impregnated with thermosetting resins (usually phenolic based resins) or other curable resins, eventually reinforced by metal layer(s) or metal mesh(es) and others which are not necessarily treated with thermosetting resin

4 Guidance in the use of the standard**4.1 Description of parts**

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EN 438-2 specifies the methods of test that shall be used to determine the performance of HPL products in their various internal and external application fields, e.g. construction, transport, furniture, flooring, etc. The test methods have been specifically developed for testing HPL.

It should be noted that not all test methods apply to all types of HPL. For example Test 11, Resistance to Abrasion, applies only to flooring grade laminates; while Test 10, Resistance to Surface Wear, applies to all types of HPL except flooring grade laminates. It is therefore important to read the scope of the test method to determine whether it is applicable to a particular HPL product.

EN 438-3, EN 438-4, EN 438-5, EN 438-6, EN 438-8 and EN 438-9 specify the performance requirements for different types of high-pressure decorative laminates. Each of these parts is independent of the others, and only requires reference to EN 438-2 for details of the appropriate test methods.

EN 438-3 applies to laminates less than 2 mm thick intended for bonding to supporting substrates to produce HPL composite panels. Classification systems and performance requirements are specified for heavy duty, horizontal and vertical grades of laminate, in standard, postforming and flame-retardant qualities.

EN 438-4 applies to Compact laminates of thickness 2 mm and greater, in standard and flame-retardant qualities, intended for interior applications.

EN 438-5 applies to flooring grade laminates less than 2 mm thick intended for bonding to supporting substrates, to produce HPL flooring elements. As 'laminate floor coverings' they meet the requirements of EN 13329.

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EN 438-6 applies to Exterior-grade Compact laminates of thickness 2 mm and greater, and specifies requirements for standard and flame-retardant laminates for use in moderate and severe outdoor conditions.

EN 438-7 is the harmonised standard covering the essential requirements specified in Construction Products Regulation for Internal and External Wall and Ceiling Finishes.

EN 438-8 applies to design laminates (pearlescent, wood veneer and metal surfaces). Classification system and performance requirements are specified for thin and compact laminates.

EN 438-9 applies to alternative core laminates (coloured and metal reinforced cores). Classification system and performance requirements are specified for thin and compact laminates.

4.2 Applications

Table 1 below shows how the different parts of the standard relate to various fields of application.

Table 1 — Applicable fields

Application	Part 3	Part 4	Part 5	Part 6	Part 8	Part 9
Construction (internal)	•	•			•	•
Construction (external)				•		
Transport	•	•			•	•
Furniture	•	•			•	•
Flooring			•			

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5 Product classification systems

EN 438-3, EN 438-4, EN 438-5, EN 438-6, EN 438-8 and EN 438-9 include product classification systems. While each of these systems is different, they contain some common elements as follows:

Main classifications:

H denotes **Horizontal grade**

V denotes **Vertical grade**

C denotes **Compact laminate**

E denotes **Exterior grade**

AC denotes **Abrasion Class** for flooring grade

A denotes **Pearlescent laminate**

M denotes **Metal laminate**

W denotes **Wood veneer laminate**

B denotes **Coloured core laminate**

R denotes **Metal reinforced core laminate**

T denotes **Thin laminate < 2 mm**

Sub-classifications:

D denotes **Heavy duty or severe use**

G denotes **General purpose or moderate use**

S denotes **Standard grade**

F denotes **Flame-retardant grade**

P denotes **Postforming grade**

In Part 5, the classification system AC1 to AC6 has been adopted as these classes relate directly to the corresponding product abrasion classes in EN 13329.

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