

High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 4: Classification and specifications for compact laminates of thickness 2mm and greater

High-pressure decorative laminates (HPL) - Sheets based on thermosetting resins (usually called laminates) - Part 4: Classification and specifications for compact laminates of thickness 2mm and greater

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 438-4:2005 sisaldab Euroopa standardi EN 438-4:2005 ingliskeelset teksti. Käesolev dokument on jõustatud 30.03.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 438-4:2005 consists of the English text of the European standard EN 438-4:2005. This document is endorsed on 30.03.2005 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
--	---

Käsitlusala: This part of EN 438 specifies performance requirements for two types of Compact laminate (defined in clause 4) intended for interior use	Scope: This part of EN 438 specifies performance requirements for two types of Compact laminate (defined in clause 4) intended for interior use
---	---

ICS 83.140.20

Võtmesõnad: classifications, fibreboards, light resisting, marking, materials, panels, planks, plastic sheets, plastics, properties, quality assurance, resins, sheets, specification, specification (approval), specifications, testing, thermosetting

English version

**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.**

Stratifiés décoratifs haute pression (HPL) - Plaques à base
de résines thermodurcissables (communément appelées
stratifiés) - Partie 4 : Classification et spécifications des
stratifiés compacts d'épaisseur égale ou supérieure à 2
mm

Dekorative Hochdruck-Schichtpressstoffplatten (HPL) -
Platten auf Basis härter Harze (Schichtpressstoffe) -
Teil 4: Klassifizierung und Spezifikationen für Kompakt-
Schichtpressstoffe mit einer Dicke von 2 mm und größer

This European Standard was approved by CEN on 16 August 2004.

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

	page
Foreword	3
1 Scope	4
2 Normative references	4
3 Term and definition	4
4 Material types and classification system	5
5 Characteristics and applications	5
6 Requirements	6
Annex A (informative) Addendum to Table 3 relating to Test Method 25: Scratch Resistance	10
Annex B (informative) Addendum to Clause 6.4.2, relating to fire performance	11
Table B.1 Typical EN 13501-1 classifications of Compact laminates	11
Bibliography	12

Foreword

This document (EN 438-4:2005) has been prepared by Technical Committee CEN/TC 249 "Plastics", the secretariat of which is held by IBN.

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 July 2005, and conflicting national standards shall be withdrawn at the latest by July 2005.

This document supersedes EN 438-1:1991 and EN 438-2:1991.

This Standard 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*

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

1 Scope

This Part of EN 438 specifies performance requirements for two types of Compact laminate (defined in Clause 4) of thickness 2 mm or greater intended for interior use.

High-pressure decorative Compact laminates are characterised by their aesthetic qualities, strength, durability and functional performance. Compact HPL sheets are available in a wide variety of colours, patterns and surface finishes; they are extremely strong, and resistant to wear, impact, scratching, moisture, heat and staining; and possess good hygienic and anti-static properties, being easy to clean and maintain.

EN 438-2 specifies the methods of test relevant to this part of EN 438.

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

EN 12721:1997, *Furniture — Assessment of surface resistance to wet heat (ISO 4211-2:1993 modified)*

EN ISO 178:2003, *Plastics — Determination of flexural properties (ISO 178:2001)*

EN ISO 527-2:1996, *Plastics — Determination of tensile properties — Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:1993 including Corr 1:1994)*

EN ISO 1183-1:2004, *Plastics — Methods for determining the density of non-cellular plastics - Part 1: Immersion method, liquid pycnometer method and titration method (ISO 1183-1:2004)*

3 Term and definition

For the purposes of this document, the following term and definition applies.

3.1

high-pressure decorative compact laminate(s) (HPL)

sheet(s) consisting of layers of cellulosic fibrous material (normally paper) impregnated with thermosetting resins and bonded together by the high pressure process described below. The surface layer(s) on one or both sides, having decorative colours or designs, are impregnated with melamine based resins. The core layers are impregnated with phenolic based resins

The high pressure process is defined as the simultaneous application of heat (temperature ≥ 120 °C) and high specific pressure (≥ 5 Mpa), to provide flowing and subsequent curing of the thermosetting resins to obtain a homogeneous non-porous material with increased density ($\geq 1,35$ g/cm³), and with the required surface finish.