

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

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 438-3:2005 sisaldab Euroopa standardi EN 438-3:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 30.03.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 438-3:2005 consists of the English text of the European standard EN 438-3:2005.</p> <p>This document is endorsed on 30.03.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This part of EN 438 applies to laminates less than 2 mm thick normally intended for bonding to supporting substrates to produce HPL composite panels and establishes a classification system for high-pressure decorative laminates according to their performance and main recommended fields of application, including materials with special characteristics, for example formability or defined reaction to fire. This part of EN 438 also specifies requirements for the properties of the various types of laminates covered by this classification system.</p>	<p>Scope:</p> <p>This part of EN 438 applies to laminates less than 2 mm thick normally intended for bonding to supporting substrates to produce HPL composite panels and establishes a classification system for high-pressure decorative laminates according to their performance and main recommended fields of application, including materials with special characteristics, for example formability or defined reaction to fire. This part of EN 438 also specifies requirements for the properties of the various types of laminates covered by this classification system.</p>
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ICS 83.140.20

Võtmesõnad: classifications, fibreboards, marking, materials, panels, pasting together, 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 3:
Classification and specifications for laminates less than 2 mm
thick intended for bonding to supporting substrates**

Stratifiés décoratifs haute pression (HPL) - Plaques à base
de résines thermodurcissables (communément appelées
stratifiés) - Partie 3 : Classification et spécifications des
stratifiés d'épaisseur inférieure à 2 mm destinés à être
collés sur des supports

Dekorative Hochdruck-Schichtpressstoffplatten (HPL) -
Platten auf Basis härter Harze (Schichtpressstoffe) -
Teil 3: Klassifizierung und Spezifikationen für Platten mit
einer Dicke kleiner als 2 mm, vorgesehen zum Verkleben
auf ein Trägermaterial

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

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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.



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Foreword

This document (EN 438-3:2005) 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 seven 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 applies to laminates less than 2 mm thick normally intended for bonding to supporting substrates to produce HPL composite panels and establishes a classification system for high-pressure decorative laminates according to their performance and main recommended fields of application, including materials with special characteristics, for example formability or defined reaction to fire. This Part of EN 438 also specifies requirements for the properties of the various types of laminates covered by this classification system.

High-pressure decorative laminates are characterised by their qualities, durability and functional performance. HPL sheets are available in a wide variety of colours, patterns and surface finishes; they are resistant to wear, scratching, impact, 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. Parts 4, 5, etc. of EN 438 are reserved for special types of HPL materials.

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 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 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 side, having decorative colours or designs, are impregnated with melamine based resins. The core layers are impregnated with phenolic based resins. The back of the sheet(s) is made suitable for adhesive bonding to a substrate.

The high pressure process is defined as the simultaneous application of heat (temperature $\geq 120^{\circ}\text{C}$) and high specific pressure ($\geq 5\text{ MPa}$), to provide flowing and subsequent curing of the thermosetting resins to obtain a homogeneous non-porous material with increased density ($\geq 1,35\text{ g/cm}^3$), and with the required surface finish.

4 Material types

4.1 Type S - Standard grade decorative laminates.

4.2 Type P - Postformable decorative laminates; similar to type S but can also be formed at elevated temperature.

4.3 Type F - Decorative laminates with improved fire retardance; similar to types S or P but also meeting special requirements of specified fire tests which may vary according to the application (e.g. construction, marine, transport) and the country of use (see Clause 6.4.3 and Annex B).