



**NSAI**  
Standards

Irish Standard  
I.S. EN 438-4:2016

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

# **I.S. EN 438-4:2016**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard — national specification based on the consensus of an expert panel and subject to public consultation.

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NSAI  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

Sales:  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

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## National Foreword

I.S. EN 438-4:2016 is the adopted Irish version of the European Document EN 438-4:2016, 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

This document does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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EUROPEAN STANDARD

EN 438-4

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

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Supersedes EN 438-4:2005

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 härthbarer 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 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.



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COMITÉ EUROPÉEN DE NORMALISATION  
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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 438-4:2016) 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 438-4:2005.

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 438-4:2016 (E)****1 Scope**

This European Standard specifies performance requirements for two types of compact laminate of thickness 2 mm or greater produced by using a high pressure process 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 European Standard.

**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 438-2:2016, *High-pressure decorative laminates (HPL) — Sheets based on thermosetting resins (usually called laminates) — Part 2: Determination of properties*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13722, *Furniture — Assessment of the surface gloss*

EN 61340-4-1, *Electrostatics — Part 4-1: Standard test methods for specific applications — Electrical resistance of floor coverings and installed floors (IEC 61340-4-1)*

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

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

EN ISO 11664-2, *Colorimetry — Part 2: CIE standard illuminants (ISO 11664-2)*

**3 Terms, definitions, symbols and abbreviations****3.1 Terms and definitions**

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

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

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

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

**3.1.2****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)



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