

Decoratieve gelamineerde plaat gebaseerd op thermohardende harsen

Deel 1: Specificatie (ISO 4586-1:1987, gewijzigd)

Decorative high-pressure laminates (HPL) – Sheets based on thermosetting resins – Part 1:
Specification (ISO 4586-1:1987, modified)

**NEDERLANDSE
NORM**

NEN-EN 438-1

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Dit document bevat de officiële Engelse versie van de Europese norm EN 438-1, mei 1991.

Deze Europese norm EN 438-1 heeft de status van Nederlandse norm.

VOORBEELD
Preview

Normcommissie 310 61 "Kunststoffen"

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Voor de in deze norm vermelde andere normen bestaan in Nederland de volgende equivalenten:

<i>Vermelde norm</i>	<i>Nederlandse norm</i>	<i>Titel</i>
EN 438-2 (1991)	NEN-EN 438-2 (1992)	Decoratieve gelamineerde plaat gebaseerd op thermo-hardende harsen – Deel 2: Bepaling van de eigenschappen (ISO 4586-2:1988, gewijzigd)

Voorbeeld
Preview

UDC 674.1.03:674.812.2-41

Descriptors: Plastics, laminated plastics, decorative coatings, thermosetting resins, plates, classifications, specifications

English version

**Decorative high-pressure laminates (HPL) — Sheets
based on thermosetting resins — Part 1:
Specifications**

(ISO 4586-1 : 1987 modified)

Stratifiés décoratifs haute pression (HPL) —
Plaques à base de résins thermodurcissables
— Partie 1:
Spécifications (ISO 4586-1 : 1987 modifiée)

Dekorative Hochdruck —
Schichtpreßstoffplatten (HPL) —
Platten auf Basis härtpbarer Harze —
Teil 1: Spezifikation (ISO 4586-1 : 1987
modifiziert)

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European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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

Foreword

This European Standard has been drawn up by a CEN ad hoc group for decorative laminates. It has been prepared as a result of the primary questionnaire procedure (PQ) based on ISO 4586-1 : 1987.

The principal modifications compared with the International Standard are the definition for sheets of decorative high pressure laminates (HPL) and the introduction of a correlation table between the two systems of alphabetical and numerical classification of decorative high pressure laminates.

The Secretariat of the ad hoc group on decorative laminates is held by AFNOR.

According to the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard:

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0 Introduction

The first part of this standard includes requirements for the types of materials that are classified in clause 4.

The requirements for several properties may be satisfied by alternative test methods. These have been included where the requirements by either method are approximately equivalent, and either where expensive equipment of different types is in satisfactory use, or where experience is limited to one of the alternatives in certain countries.

1 Scope and field of application

This standard classifies decorative laminated sheets (HPL) according to their performance and main recommended fields of application, and provides also for materials of special characteristics, for example postformability or defined reaction to fire.

Requirements are specified for those types of materials that are most generally used, but additional types may be added as required. The limit values specified apply to the most commonly used types of materials, but within each classification, it may be possible to obtain variants having much higher performance figures.

These materials are characterized by their decorative surfaces, which are relatively hard and resistant to wear, scratching, impact, boiling water, domestic stains and moderate heat. They are intended for interior applications as follows:

- Thin single-faced laminates usually less than 2 mm thick, for bonding to a substrate.
- Compact laminates, single or double-faced, approximately 2 mm to 5 mm thick, which need to be rigidly supported without necessarily being bonded to a substrate.
- Compact laminates, self-supporting, double-faced, usually thicker than 5 mm, the thickness of which will be selected according to application and panel dimensions.

The back surface of sheets having only one decorative face is made suitable for adhesive bonding to a substrate.

This standard applies only to decorative laminated sheets as defined in clause 3. The second part of the standard specifies the methods of test.

2 Reference

- EN 438-2 Decorative high-pressure laminates (HPL) - Sheets based on thermosetting resins
Part 2 : Determination of properties

3 Definition

For the purposes of this standard the following definition applies.

decorative high-pressure laminated sheet (HPL)

A sheet consisting of layers of fibrous sheet material (for example, paper) impregnated with thermosetting resins and bonded together by means of heat and a pressure of not less than 7 MPa¹⁾, the outer layer or layers on one or both sides having decorative colours or designs.

Decorative high-pressure laminated sheet (HPL) as defined in this standard is made from core layers impregnated with phenolic and/or aminoplastic resins and a surface layer or layers impregnated with aminoplastic resins (mainly melamine resins).

4 Classification

A classification system consists of a material type describing the general characteristics of the laminate together with three index numbers describing levels of performance. This system has been developed to cover the many HPL product variants now available. An alphabetical classification system can be used as an alternative (see 4.5), and table 1 compares the two systems and shows how they relate to some typical applications.

4.1 Index numbers for specifying HPL properties

Index 1 = Resistance to surface wear (table 2).

Index 2 = Resistance to impact by small diameter ball (table 3).

Index 3 = Resistance to scratching (table 4).

4.2 Material type - Special characteristics

The classes of material listed in table 1 are all available as standard type decorative laminated sheet (type S) having the basic characteristics described in clause 1.

For some classes of material, additional types (type P and type F) are also available, possessing the special properties described below.

¹⁾ 1 MPa = 1 MN/m²

Table 1 . Classification system and typical applications

Performance category	Type	Index Number			Equivalent alphabetical classification	Examples of typical applications
		1 Wear	2 Impact	3 Scratch		
Thick materials of high performance for special use in horizontal and vertical applications requiring particularly high impact and moisture resistance	Compact S or Compact F	3	*)	3	CGS (Compact general purpose standard) CGF (Compact general purpose flame retardant)	Doors, partitions, walls, various self-supporting components in construction and transportation
Very high resistance to surface wear High impact resistance Very high resistance to scratching	S or F	4	3	4	HDS (Horizontal heavy duty standard) HDF (Horizontal heavy duty flame retardant)	Countertops, flooring on special substrates
High resistance to surface wear High resistance to impact High resistance to scratching	S, F or P	3	3	3	HGS (Horizontal general purpose standard) HGF (Horizontal general purpose flame retardant) HGP (Horizontal general purpose postforming)	Kitchen working surfaces, restaurant and hotel tables, heavy duty doors and wall coverings, interior walls of public transport vehicles
High resistance to surface wear Moderate resistance to impact High resistance to scratching	S, F or P	3	2	3	-	Horizontal applications for office (computer tables) and bathroom furniture
Moderate resistance to surface wear High resistance to impact Moderate resistance to scratching	S or F	2	3	2	VGS (Vertical general purpose standard) VGF (Vertical general purpose flame retardant)	Front panels for kitchen, office and bathroom furniture, wall coverings, shelves
Postforming material with moderate resistance to impact	P	2	2	2	VGP (Vertical general purpose postforming)	Special decorative surface effects for vertical use in kitchens, showrooms etc.
Low resistance to surface wear Moderate resistance to impact and scratching	S, F or P	1	2	2	-	Exposed side components of cupboards
Low resistance to surface wear and scratching Moderate resistance to impact	S	1	2	1	VLS (Vertical light duty standard)	

*) The test method EN 438-2 no. 11 is not applicable to compact CGS and CGF grades, however in practical applications the impact resistance of compact laminates is superior to that of other decorative laminate types.

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