Product Sheet

dekorial starline

High Pressure Metal Laminate HPML

dekodur®

Product description

The product name dekorial-starline refers to real metal laminates (HPML) with an aluminium surface. This metal layer is applied on a phenolic resin core with high pressure. The resistant aluminium surface is produced by anodizing (for mirror quality) or by painting. Since anodizing is an integral part of the top layer, this provides permanent protection against external influences.

Special stove enamel on an epoxy resin basis or a PU-lacquer is also used to protect the metal surface, which is practiced in many designs. Depending on the requirements, the aluminium layer can be smooth, brushed, or embossed. The typical metallic character is created through compacting in the natural colour. A transparent colour, in combination with surface structures, is another ad-ditional possibility for decorative designs.

This product is characterized, inter alia, by a „slight surface unevenness“ and (in the structures of some aluminium laminate types) slight differences in the gloss level. Even small dents are unavoidable and normal with today‘s technology. The same applies to the colour for the products listed here. This may vary minimally due to the manufacturing process, but the overall impression is generally not disturbed. It is not a reason for complaint.

Suitable for:

- the implementation of high-quality concepts (e.g. store fitting, hotels, etc.)
- vertical application, as wall lining, etc.
- horizontal application, partly even in strongly frequented areas (A 451, A 453, A 454, A 456, A 480 and A 486)

Not recommended for:

- Outdoor use, areas of splash water, very humid environments (wet and humid rooms)

dekodur®

dekorial starline

Characteristics:

- Lightfast
- Resistant to chemicals
- Food safe
- Resistant to cleaning
- Scratch-resistant
- High-scratch-resistant
- ULT-RA Ultramatt
- Antifingerprint
- FireSafe dekoFireSafe upon request B s1 d0, A2 s1 d0 und A1

low formaldehyde

European Standard EN 438

Lloyd's Register

0525/2021

Selection from the dekorial starline collection:


A 210


A 211


A 212


A 216


A 217


A 211 / BRK


A 210 / PTK


A 250


A 256


A 256 / PTG


A 251


A 251 / PTG


A 252


A 341 / SR*


A 350 / SR*


A 351/ SR*


A 352 / SR*


A 353 / SR*


A 356 / SR*


A 480 / HSR


A 486 / HSR


A 451 / HSM


A 453 / HSM


A 454 / HSM


A 456 / HSM

* These SR versions contain PTFE compounds which are classified as PFAS substances. For more information, please refer to page 7 under „Health and Environmental Qualities".

More decors of the dekorial-starline collection can be found at www.dekodur.de/de/metall/aluminium-hpl.html

Real aluminium surfaces are very often implemented as smooth surfaces. However, surface structures such as PTG, PTK, NTZ, AQA, DIA or lengthwise/crosswise grooves with different characteristics (603 - 610) will additionally emphasize the application's metal character. As the grooves differ in their appearance, a combination is not recommended.

Of course, an ideal mirror effect can only be achieved with a smooth metal surface. Structures such as grooved structures (see dekovario) offer additional possibilities with these mirror qualities.

A 210	Real aluminium	smooth & anodized	Silver color	Mirror quality
A 211	Real aluminium	smooth & anodized	Gold color	Mirror quality
A 212	Real aluminium	smooth & anodized	Copper color	Mirror quality
A 216	Real aluminium	smooth & anodized	Gunmetal color	Mirror quality
A 217	Real aluminium	smooth & anodized	Night blue color	Mirror quality

More resistant to scratching

Scratch-resistance: A 341, A 350, A 351, A 352 A 353 und A 356
These products are coated with a special varnish. The surface protective varnish has a scratch hardness according to DIN EN 438 of ≥ 1.2 N. A comparative test with a household steel sponge, loaded with weights, results in the following when testing perpendicular to the running direction: with 1000 g load no scratch marks / standard versions from 2000 g slight and / from 5000 g distinct scratch marks.

Note: These SR versions contain PTFE compounds (Polytetrafluoroethylene), which are regulatory classified as PFAS substances. According to current knowledge, these are not hazardous to health. PFAS-free alternatives are expected to be available from Q3/2025.

High-scratch-resistance: A 480, A 486
The surface protection lacquer has a scratch hardness of ≥ 3 N according to DIN EN 438 = and can be used horizontally

High-scratch-resistance matt: A 451, A 453, A 454, A 456
The surface protection lacquer has a scratch hardness of ≥ 3,5 N according to DIN EN 438 = and can be used horizontally

Production engineering feature: Optical banding (basic noise).

In our HSM Fineline series (A 451, A 453, A 454, A 456) of aluminum HPL – supermatt and anti-fingerprint – a background noise may occur under various lighting conditions.

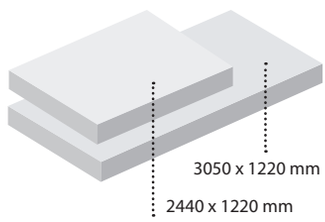
This is due to the production process and is customary in the industry. It emphasizes the uniqueness of the material and is not a reason for complaint.

! Backing for dekorial starline:
A 209 real aluminium smooth and painted (natural colour) (aluminium quality without colour and quality requirements)

Standard version	Scratch-resistant	High scratch-resistant	High scratch-resistant matt (HSM)
Scratch hardness 0.5 N	Scratch hardness ≥ 1,2 N	Scratch hardness ≥ 3 N	Scratch hardness > 3,5 N

Delivery form and quality

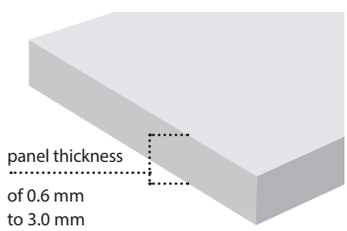
All dekorial-starline boards with smooth finish are supplied in dimensions of 2440 x 1220 mm and 3050 x 1220 mm.



This does not apply to the (WAF) structure, which has a usable width of 1200 mm and a length of 2440 mm.

According to DIN EN 438, the nominal length and width tolerance must correspond to limit dimensions of - 0 mm and + 10 mm.

dekorial-starline boards can be produced in thicknesses from 0.6 mm to 3.0 mm. The standard thickness for painted versions is 0.8 mm (weight: 1.35 kg/m^2), and 0.9 mm for mirror quality. (Weight: 1.45 kg/m^2).



Nominal thickness	Limit deviations
0.6 – 1.0 mm	± 0.15 mm
> 1.0 – 2.0 mm	± 0.15 mm
> 2.0 – 2.5 mm	± 0.18 mm
> 2.5 – 3.0 mm	± 0.20 mm

Thicknesses of >3.0 mm available upon request

The fire behaviour of the dekorial-starline standard-quality product range corresponds to DIN EN 13501-1 of class D-s2-d0. Furthermore, laminates of the dekorial starline product range are flame-retardant according to FTP Code Annex 1, Part 5 and Annex 2 (IMO Res MSC307(88) - (2010 FTP Code) Annex 1, Part 5 and Annex 2.

The products carry the „Steering Wheel Symbol," 0525/yyyy certificate no. 0525 - MED 1750158-02 as well as the USCG Approval no. 164.112/ECO525/0525-MEDDEL R2040295MB for dekorial starline and are certified by Lloyds Register.

Note: In addition to the general technical instructions, the behaviour of products in the event of fire is influenced not only by the laminate used but also by the bond with other materials, fasteners, and the processing technique. Adhesives used in Type B cutting surfaces and in connection with the insulation of cold systems in shipbuilding must also be flame-retardant according to FTP Code Annex 1, Part 3 No. 3.1. and Part 5 No. 3.4.

Lamination with a transport protection film is obligatory with dekorial-starline. The film must be removed after 6 months at the latest otherwise the aluminum surface may be damaged if the film is removed later.

! In addition to the standard quality, all painted aluminium versions (except A 4xx series) can be produced in post-forming quality („post formable"). In the article description, laminates in post-forming quality are marked with the abbreviation NF. Upon request, these boards will be laminated with a heat-resistant foil.

The processing of dekorial-starline boards in post-forming quality is influenced or determined by a multitude of material and processing parameters (thickness of the material, decor, structure, temperature, feed rate, rounding profile, rounding radius, etc.). The specific production parameters have to be adjusted not only to the material properties but also to the equipment and adhesive used.

A general specification for the laminate's forming temperature is a range of 140 - 160° C; a feed rate of 10 - 20 m/min is another guideline for the forming process. In general, the laminate allows for a maximum bending radius (in mm) of approx. 10 x the board thickness (e.g. 0.8 mm = 8 mm radius). Storage under normal climatic conditions (approx. 18 - 23° C and 50 - 65 % relative humidity) must be observed. When stored under these conditions, the post-forming properties will remain virtually unchanged for storage periods of up to one year.

Applications and processing methods

dekorial starline boards are intended for decorative vertical surfaces in interior design applications. Even lightly stressed, horizontal surfaces can be covered with starline.

Typical application examples include:

- Wall coverings
- Ceiling coverings
- Living room furniture
- Hotel and restaurant furniture
- Drawer fronts
- Company signs
- Shelf cladding
- Counters and displays in store fitting
- Door and frame cladding
- Shipbuilding
- Vehicle construction/Caravan construction
- and much more

! When dekorial-starline is used on heavily used work surfaces, a glass plate or a similar cover is recommended to protect the surface. dekorial-starline laminates can be sawed, milled, and drilled with carbide-tipped tools.

When gluing starline in flat presses, the following must be observed:

- Maximum temperature of 60° C (Recommendation: cold pressing)
- Contact pressure of 0.15 – 0.20 N/mm^2 (1.5 – 2.0 bar)
- Soft padding between the laminate surface and pressing agent

All commercially available adhesives and glues, which are also used to bond classic high-pressure laminates, are suitable for gluing.

Adhesive types:
- Dispersion adhesives (PVAc)
- Condensation resin adhesives (urea resin)
- Contact adhesives
- Reaction adhesives
- Hot melt adhesives

PU adhesive residues must be fully removed from the surface immediately before curing.

When it comes to composite elements, attention must be paid to an asymmetrical structure, i.e. the rear side is glued to a corresponding backing plate. A good flatness is achieved when using the same board quality and thickness on the back of the element with a second-choice board or A 209 backing.

When used as a front, A-quality is expressly recommended on both sides!

Gluing of HPL with real metal foil

When gluing real metal HPL with
- contact adhesives (solvent-based)
- condensation adhesives (phenol-resorcinol resin base)

special care and compliance with the adhesive manufacturer's instructions are essential. Be particularly sure to apply an even adhesive layer that is not too thick, and ensure sufficient ventilation (insufficient ventilation can lead to the delayed formation of bubbles between the metal foil and the laminate core and/or to separation of the metal foil from the laminate core!
Before use, consultation with the manufacturers is necessary!)

If possible, the parts should be pressed over a small area. At least one edge length should be less than 800 mm.

Guide value table for the bonding of HPL with real metal surfaces on wood-based materials

(chipboard V 20, chipboard V 100, plywood, hard fibre, solid wood)holz)

Adhesives	Condensation adhesives		
Strength acc. to EN 204	Urea resin approx. 10 % filled	Urea melamine resin	Phenol resorcinol resin
Temperature resistance	D 3	D 3	D 3 / D 4
	- 20 °C to + 150 °C		- 20 °C to + 150 °C
	~ adhesive application: 90-150 g/m² on HPL or carrier material		100-180 g/m²
	~ open waiting period: 2-20 min		2-15 min
	~ bonding pressure: 3-5 bar		3-5 bar
	~ pressing temperature/pressing time:		
	20 °C / 15-180 min		20°C / approx. 9 h
	40 °C / 5-30 min		80°C / approx. 10 min
	60 °C / 1-12 min		110°C / approx. 5 min
	The open waiting and pressing times depend on the added curing agent		

Adhesives	Contact adhesives		
	without curing agent	with curing agent	with built-in resin hardener
Strength acc. to EN 204		no classification according to EN 204	
Temperature resistance	- 20 °C to + 70 °C	- 20 °C to + 100 °C	Consultation with the manufacturer
	~ adhesive application: 150-200 g/m² each on HPL and carrier material		These are special adhesive settings for which no guide values can be given.
	~ open waiting time: depending on ambient temperature and adhesive type (finger test)		Consultation with the adhesive manufacturer is necessary.
	~ bonding pressure: min. 5 bar		
	~ pressing temperature: 20 /40 / 60 °C		
	~ pressing time: short (preferably roller press)		

Note:
The above information, especially the advices for processing our products, are based on our knowledge and experience. Due to different substrate materials and different working conditions, a guarantee of a work result or liability, from whatever legal relationship, cannot be based either on these instructions or on an oral advice. The user must check the products for their suitability for the intended application.

Cleaning and care

dekorial-starline surfaces are cleaned with a clean cloth or a soft sponge using soap and plenty of water or a glass cleaner.

Abrasive cleaning agents, acids and alkalis, especially chlorine-containing products, should not be used.

Storage

dekorial-starline laminates must be stored in a closed room at temperatures between 18 and 25°C and a relative humidity of 50 - 60%. They must be stored flat and horizontally over the entire surface, with at least 200 mm distance to the floor.

The board stacks

- are to be protected from moisture
- must not be exposed to direct sunlight
- must not be placed in a warm and/or cold air stream.

! If horizontal storage is not possible, an inclination of approx. 80° with full-surface support and a lower counter bearing is recommended.

Waste disposal, environment, and hygiene

- dekorial-starline waste can be incinerated in officially approved industrial combustion plants.
- dekorial-starline waste can be deposited in landfills, taking into account the local waste regulations.
- According to TA-Abfall, version as of 28 March 91, Category I, No. 571, HPL residues are classified as „other hardened plastic waste." Category I refers to materials which are similar to household waste.

Formaldehyde-free ECO HPL / VOC

The Dekodur ECO laminates from the dekorial-starline collection have been tested for the release of formaldehyde content and are well below the limit values specified in the German Chemicals Prohibition Ordinance (ChemVO) and the guideline value of the AgBBSchema 2018, ISO 16000 parts 3, 6, and 9, DIN 16516 (01/2018) for interiors.

FSC

All products of the dekorial starline collection are manufactured with FSC-CW certified raw materials from sustainable forestry. Upon request, these products are also available in FSC-mix quality.

PFAS Information

The SR versions (e.g. A 341/SR, A 350/SR, etc.) of our dekorial starline products contain PTFE compounds that are classified as PFAS substances. According to current knowledge, these are not hazardous to health in the form used. Dekodur is actively working with its suppliers to offer PFAS-free alternatives, which are expected to be available from Q3/2025.

Hygiene

Food safe material

Technical data at a glance

Complies with EN 438-8	Quality		
	Decoration / Surface		All
	Thicknesses		0,8 - 0,9 mm
	Standardized type		MTF
Feature	**Standard**	**Unit**	
Physical properties and dimensions of metal laminate panels *			
Density	EN ISO 1183-1	g / cm³	≤ 1,35
Strength tolerance	EN 438-2-5	mm	± 0,15
Length and width tolerance	EN 438-2-6	mm	- 0 / +10
Tolerance of edge straightness	EN 438-2-7	mm / m	≤ 1,5
Perpendicularity tolerance	EN 438-2-8	mm / m	≤ 1,5
Flatness tolerance	EN 438-2-9	mm / m	100
Dimensional stability at high temperature:	EN 438-2-17	%	
■ Longitudinal direction			≤ 0,75
■ Cross direction			≤ 1,25
Mechanical properties			
Resistance to boiling water	EN 438-2-12		No delamination of core layers
Tear resistance	EN 438-2-23	Class (a)	4
Minimum bending radius (convex and concave direction)		cm	15
Surface properties			
Resistance to water vapour	EN 438-2-14	Class (a)	3
Scratch resistance	EN 438-2-25	Degree (b)	1
Resistance to stains	EN 438-2-26	Class (a)	
■ Group 1 & 2			4
■ Group 3			4
Colour stability under artificial light	EN 438-2-27	Grey scales	4 to 5
Fire behaviour			
Fire behaviour (upon request)	EN 13501-1	Class	D-s2-d0 / B-s1-d0 / A2-s1-d0
Gross calorific value	EN ISO 1716	MJ / Kg	18 - 20

* Metal is subject to slight variations in colour and structure; some decors may show a mother-of-pearl lustre. These deviations are no reason for

MTF: fire-resistant metallic laminate surface.
Type P2: panels used in a dry environment for interior decoration.
(a) Class: 1 = damage to the surface 2 = significant change in appearance
3 = moderate change 4 = minor change visible from certain angles.
5 = no change.
(b) Level: 2 = continuous scratches with 2N. 3 = continuous scratches with 4N.

Technical data at a glance

Feature	Standard	Unit	
Health and environmental qualities			
Release of formaldehyde	EN 717-2	Class	E1 (< 0,1ppm)
Emissions of volatile substances	ISO 16000-9	Class	A
Emission of volatile substances			
Formaldehyde emission	EN 16516	Class	< 0.1ppm
Emission of volatile substances	ISO 16000-9	Class	A
PFAS Information	EN 438-2	Class	SR versions contain PTFE compounds (Polytetrafluoroethylene) which are categorized as PFAS substances and according to current knowledge are not hazardous to health. PFAS-free alternatives are under development.

Do you have any questions?

If so, please contact our service department. If you need samples, you can request them from Dekodur® in the form of sample chains or hand samples in DIN A5 or DIN A4.

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