

## TECHNICAL DATA

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### Product Description

The product Octolam Aluminum refers to real metal laminates (HPML) with an aluminum surface. This metal layer is applied on a phenolic resin core with high pressure. The resistant aluminum 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 aluminum 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 additional 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. It can vary minimally due to the manufacturing process, but the overall impression is generally not disturbed.

### Suitable for:

- The implementation of high-quality concepts (Examples: store fitting, hotels, etc.)
- Vertical applications, as wall lining, etc.
- OCTOLAM'S 867, 868, 869, 870: Horizontal application, partly even in strongly frequented areas. High-scratch-resistance matt. The surface protection lacquer has a scratch hardness of  $\geq 3,5$  N according to DIN EN 438.

**Not recommended for** outdoor use, areas of splash water, very humid environments (wet and humid rooms)

### Balancing Sheets

The manufacturer suggests that both sides of a substrate be clad with similar laminates of equal thickness to avoid warping. Applicable for large panel applications only

## Dimensions and Quality

### Size

Most Octolam aluminum laminates are available in size 2440x1220 mm; with some available in 3050x1320 mm. Items with a diamond pattern are effectively 2440x1200 mm.

### Dimensional Tolerances

PROPERTY	TEST METHOD (EN 438-2CLAUSE No.)	REQUIREMENT
THICKNESS	5	0,5 ≤ t ≤ 1,0mm: ± 0,10mm maximum variation 1,0 < t < 2,0mm: ± 0,15mm maximum variation (where t = nominal thickness)
FLATNESS <sup>a</sup>	9	60mm/m maximum deviation
LENGTH AND WIDTH <sup>b</sup>	6	+ 10 mm / - 0 mm
STRAIGHTNESS OF EDGES <sup>b</sup>	7	1,5mm/m maximum deviation
SQUARENESS <sup>bb</sup>	8	1,5mm/m maximum deviation
Coefficient of elongation α for aluminum at 20 °C = 23,10		
Coefficient of elongation α for Phenol/paper at 20 °C = 13,00		

### Fire

Classification: B1 – B2 when tested according to DIN 4102.

Certified by Lloyd's Register and fulfills requirements of IMO FTC.

### Grade

Specific items are stocked in either Postform or Standard Grade. Contact us for details.

General Postform Guide: Forming temperature between 140°C; feed rate 10 -20 m/minute. Sheets can generally be formed to a radius 10 times their thickness.

### Protective Foil

All Octolam aluminum laminates are supplied with a protective foil which should be removed immediately upon completion of an installation.

### Storage

Sheets should be stored in a closed room with a temperature of 18-25°C at 50-60% relative humidity. Store horizontally at 200mm distance from the ground. If this is not possible, store at an 80° angle with the sheet fully supported from behind.

Protect sheets from moisture, direct sunlight and away from any warm air-stream.

### **Application and Processing**

Octolam aluminum laminates are intended for use as a decorative vertical surface in interior application, also for surfaces which are not exposed to heavy wear.

Typical applications are: Wall cladding; home furniture; hotel and restaurant furniture; fronts of drawers; signs for shops and firms; shelf cladding; counters and displays in shops; surfacing for doors and doorframes; boat fixtures; wagon and coach fittings, etc.

For use on surfaces exposed to heavy wear it is recommended that the surface be protected by glass or a clear coat.

### **Cutting**

Octolam aluminum laminates can be sawed, routed and drilled using carbide tipped tools.

### **Bonding**

*Precautions to take when bonding in surface presses:*

Maximum temperature 60°C  
Press pressure 0.15 -0.20 N/mm<sup>2</sup> (1.5 -2.0 bar)  
Soft cushioning between laminate surface and press-plates

All standard commercial glues which are designed for bonding standard high pressure laminates can be used.

**Glue Types:**

- Dispersion glues (PVAc)
- Condensation resin glues (Urea resin)
- Contact glues
- 2 component glues
- Hot melt glues

When PU glues are used great care must be taken that glue residues are completely removed from the surface.

With compound elements a symmetric construction is necessary. This is obtained by the use of a balancing sheet which must be bonded to the reverse side. A flat element can be obtained by using a sheet of the same type in 2<sup>nd</sup> quality.

## **BONDING HPL-SHEETS SURFACED WITH PURE METAL FOILS**

The bonding of HPL sheets surfaced with pure metal using contact glues (solvent based) or condensation glues (Resin based on phenol and/or resorcinol), requires special precautions and close adherence to the manufacturer's instructions. Special attention must be paid to a uniform, adequate glue spread, sufficient airing (insufficient airing can lead to eventual blistering between the metal foil and the core of the laminate and/or lead to separation of the foil from the laminate). Sufficient pressure in a press must be used also. The surfaces to be bonded should be kept as small as possible. At least one edge should not exceed 800 mm.

**General Rules for Bonding HPL, surfaced with pure metal, to wooden substrates**  
(Particle board V 20, particle board V 100, plywood, hardboard or solid wood)

Glue Employed	Condensation Glues		
	Urea resin with approx. 10% filler	Urea-Melamine Resin	Phenol Resorcinol resins
For Use in DIN 204	D 3	D 3	D3 / D 4
Resistance to Temperature	Between -20 °C to +150°C		Between -20 °C to +150°C

~ Gluespread: 90-150 g/ m <sup>2</sup> on HPL or substrate  ~ Open Time: 2-20 min.  ~ Press Time: 3-5 bar  ~ Press temperature/Press Time: 20 °C / 15-180 min 40°C / 5-30 min 60°C / 1-12 min  ~ Open Press Times are dependant on the amount of hardener used.	100-180 g/ m <sup>2</sup>  2-15 min  3-5 bar  20 °C approx. 9 hours 40°C / approx. 10 min. 60°C / approx. 5 min.
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Glue Employed	Contact Glues		
	Without hardener	With hardener	With built-in hardener
For Use in EN204	Not classified under EN 204		
Resistance to Temperature	Between -20 °C to +70°C	Between -20 °C to +100°C	Contact manufacturer

~ Gluespread: 150-200 g/ m <sup>2</sup> on both HPL and substrate  ~ Open Time: Dependant on ambient temperature and on the type of glue used (Fingertest)  ~ Press Pressure: At least 5 bar  ~ Press temperature: 20 °C / 40°C / 60°C  ~ Press Times: Short A roller is recommended.	These are special glues and therefore no values can be given.   Contact manufacturer.
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**Cleaning and Maintenance**

Clean the surface with a clean cloth or a soft sponge, using glass cleaner. For heavier stains turpentine may be required but always test a small area first to ensure there are no adverse effects.

*Abrasive cleaners, acids or alkaline products should never be used.*

**Waste Disposal**

Sheets can be burned in an incinerator or disposed of in landfills in accordance with local regulations. Most regions consider high pressure laminate as household waste.

For additional information or samples please contact us at:

Tel (416) 531-5051

Tel 1-877-628-6526 Toll Free in North America

Fax (416) 531-3254

Email: [sales@octopusproducts.com](mailto:sales@octopusproducts.com)

# Technical data at a glance

	Quality		
	Decoration / Surface		All
	Thicknesses		0,8 - 0,9 mm
	Standardized type		MTF
	Complies with EN 438-8		
Feature	Standard	Unit	

## Physical properties and dimensions of metal laminate panels \*

Density	EN ISO 1183-1	g / cm <sup>3</sup>	≤ 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

## Health and environmental qualities

Release of formaldehyde	EN 717-2	Class	E1 (< 0,1ppm)
Emissions of volatile substances	ISO 16000-9	Class	A

\* 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 complaint.

MTF: fire-resistant metallic laminate surface.

Type P2: panels used in a dry environment for interior decoration.

(a) Class: 1 = damage to the surface

3 = moderate change

5 = no change.

2 = significant change in appearance

4 = minor change visible from certain angles

(b) Level: 2 = continuous scratches with 2N.

3 = continuous scratches with 4N.