PRODUCT TECHNICAL SHEET

STANDARD

High pressure decorative laminates (HPL) according to EN 438-3:2005 or EN 438-8:2005 , consisting of a core made from layers of kraft paper impregnated with phenolic thermosetting resins and a surface of decorative paper(s) impregnated with aminoplastic resins. All the layers are bonded together with simultaneous application of heat (approximately 150°C) and high specific pressure (> 7 MPa) to obtain a homogeneous non-porous material with increased density. These laminates are normally intented for bonding to supporting substrates to produce panels by the composite manifacturers.

	Decor		Unicolours	Printed decors	Iridescent colours
	EN 438 classification		HGS	HGS	ATS
	Standard		EN 438-3	EN 438-3	EN 438-8

PROPERTIES	TEST METHOD	PROPERTY OR ATTRIBUTE	UNIT	VALUES		
SURFACE QUALITY						
Surface quality	EN 438-2.4	Spots, dirt and similar surface defects	mm^2/m^2	≤ 1		
		Fibres, hairs and scratches	mm/m^2	≤ 10		
DIMENSIONAL TOLERANCES						
Dimensional tolerances	EN 438-2.5	Thickness tolerance	mm	0,5 ≤ t ≤ 1,0: ± 0,10		
			mm	1,0 < t < 2,0: ± 0,15		
	EN 438-2.9	Flatness (measured on full-size sheet)	mm/m	≤ 60		
	EN 438-2.6	Length and width	mm	+ 10 / - 0		
	EN 438-2.7	Straightness of edges	mm/m	≤ 1,5		
	EN 438-2.8	Squareness	mm/m	≤ 1,5		
PHYSICAL PROPERTIES						
Resistance to surface wear	EN 438-2.10	Initial Point	Revolutions	≥ 150	≥ 100	N/A
		Wear value	Revolutions	≥ 350	≥ 200	N/A
Resistance to impact with small diameter ball	EN 438-2.20	Spring force	N	≥ 20	≥ 20	≥ 15
Resistance to scratching	EN 438-2.25	Appearance	Rating	≥ 3	≥ 3	≥ 2
Dimensional stability at elevated temperatures	EN 438-2.17	Cumulative dimensional change	Longitudinal %	≤ 0,55	≤ 0,55	N/A
		Cumulative dimensional change	Transversal %	≤ 1,05	≤ 1,05	N/A
Resistance to immersion in boiling water	EN 438-2.12	Appearance - Gloss Finish	Rating	≥ 3	≥ 3	N/A
		Appearance - Other finish	Rating	≥ 4	≥ 4	N/A
Resistance to dry heat (180°C/20')	EN 438-2.16	Appearance - Gloss Finish	Rating	≥ 3	≥ 3	N/A
		Appearance - Other finish	Rating	≥ 4	≥ 4	N/A
Resistance to wet heat (100°)	EN 12721:1997	Appearance - Gloss Finish	Rating	≥ 3	≥ 3	N/A
		Appearance - Other finish	Rating	≥ 4	≥ 4	N/A
Resistance to staining	EN 438-2.26	Appearance - Group 1 & 2	Rating	≥ 5	≥ 5	≥ 5
		Appearance - Group 3	Rating	≥ 4	≥ 4	≥ 4
Light fastness (Xenon-arc)	EN 438-2.27	Contrast	Grey scale rating	≥ 4	≥ 4	≥ 4
Resistance to water vapour	EN 438-2.14	Appearance - Gloss Finish	Rating	≥ 3	≥ 3	≥ 3
		Appearance - Other finish	Rating	≥ 4	≥ 4	≥ 3
Resistance to cigarette burns	EN 438-2.30	Appearance	Rating	≥ 3	≥ 3	N/A
Density	EN ISO 1183	Density	g/cm^3	≥ 1,35	≥ 1,35	≥ 1,35
FIRE PERFORMANCES						
Reaction to fire	This product is not tested for Reaction-to-Fire as it involves a semi-finished product only suitable for end-use applications when bonded to a substrate. Reaction-to-Fire testing of the bonded panel is the reponsibility of the panel manufacturer and results will differ depending on the substrates and bonding techniques applied.					
OTHER PROPERTIES						
Thermal resistance / conductivity	EN 12664	Thermal resistance / conductivity	W/mK	0,2 to 0,5	0,2 to 0,5	0,2 to 0,5
Formaldehyde emission	EN 717- 1/2	Formaldehyde emission	Rating	Class E1	Class E1	Class E1
Evaluation of micro-organisms action	EN ISO 846	Evaluation - Methods A + C	Rating	0 - 1	0 - 1	0 - 1

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