## MATERIAL PROPERTIES DATA SHEET

## SOLID | SOLID CORE



High pressure decorative laminates (HPL) according to EN 438-9:2013, consisting of a surface of decorative paper(s) impregnated with aminoplastic resins and a core of coloured cellulosic fibrous layers impregnated with thermosetting 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. The surface and the core layers have different colours to achieve a succession of coloured layers with particular desing effects resulting from routering and engraving.

EN 438 classification EN 438-9 Standard PROPERTIES TEST METHOD PROPERTY OR ATTRIBUTE UNIT SURFACE QUALITY Spots, dirt and similar surface defects Fibres, hairs and scratches mm<sup>2</sup>/m ≤ 1 ≤ 10 EN 438-2.4 Surface quality mm/m DIMENSIONAL TOLERANCES mm mm mm mm ± 0,25 for thickness 2,0 ≤ t < 3,0 ± 0,40 for thickness 3,0 ≤ t < 5,0 ± 0,50 for thickness 5,0 ≤ t < 8,0 EN 438-2.5 Thickness tolerance  $\pm$  0,00 for thickness 8,0  $\leq$  t < 12,0  $\pm$  0,80 for thickness 12,0  $\leq$  t < 16,0 Length and width EN 438-2.6 mm + 10 / - 0 Dimensional tolerances EN 438-2.7 Straightness of edges mm/m ≤ 1,5 EN 438-2.8 Squareness ≤15 ≤ 12,0 for thickness 2,0 ≤ t < 6,0 ≤ 8,0 for thickness 6,0 ≤ t < 10,0 ≤ 5,0 for thickness 10,0 ≤ t mm/m EN 438-2.9 Flatness (measured on full-size sheet). mm/m GENERAL PROPERTIES Resistance to surface wear EN 438-2.10 Initial Point Revolution: ≥ 150 Mass increase - 2 ≤ t < 5 mm Mass increase - 5 ≤ t mm ≤ 5 ≤ 3 Thickness increase - 2 ≤ t < 5 mm Thickness increase - 5 ≤ t mm ≤6 ≤4 esistance to immersion in boiling water EN 438-2.12 Appearance - Gloss Finish Rating ≥ 3 ≥ 4 Appearance - Other finish Rating Appearance - Gloss Finish Appearance - Other finish Rating ≥ 3 ≥ 4 EN 438-2.14 Resistance to water vapour Rating Appearance - Gloss Finish Appearance - Other finish Rating ≥3 ≥4 Resistance to dry heat (160 °C/20') EN 438-2.16 Rating Cumulative dimensional change -  $2 \le t \le 5$  mm Cumulative dimensional change -  $5 \le t$  mm Longitudinal % Longitudinal % ≤ 0,60 ≤ 1.00 Dimensional stability at elevated temperatures EN 438-2 17 Cumulative dimensional change - 2 ≤ t < 5 mm Cumulative dimensional change - 5 ≤ t mm Transversal ≤ 0.50 Transversal ≤ 0,80 Surface ≥ 4 Resistance to crazing EN 438-2.24 Appearance Rating Core ≥ 3 Appearance - Smooth Finishes Appearance - Textured Finishes Rating Rating ≥ 2 Resistance to scratching EN 438-2 25 ≥ 3 Appearance - Group 1 & 2 Appearance - Group 3 Rating Rating ≥ 5 ≥ 4 Resistance to staining EN 438-2 26 EN 438-2.27 Surface ≥ 4 Core ≥ 3 Light fastness (Xenon-arc) Contrast Grey scale rating EN ISO 178 ≥ 9000 Flexural Modulu: Stress Мра EN ISO 178 ≥ 80 Flexural strength Stress Мра Point to point resistance Ω  $10^9 \div 10^1$ Electrostatic properties EN 61340-4-1 Vertical resistance Ω 10<sup>9</sup> ÷ 10 EN ISO 1183 Density Density ≥ 1,40 g/cm FIRE PERFORMANCES The reaction to fire of Solid Core Solid is related to the final installed panel. The manufacturer of the final installed panel is responsible for the correct execution of the test in accordance with the applicable standards and test methods required for the specific application field. Reaction to fire OTHER PROPERTIES Thermal resistance / conductivity EN 12664 Thermal resistance / conductivity W/mł 0,2 to 0,5 Formaldehyde emission EN 13986 Formaldehyde emission classification Class E1 EN 1186-3 3% acetic acid 24h at 40°C < 10 EN 1186-3 50% ethanol 24h at 40°C 95% ethanol 24h at 40°C < 10 ontact with food - Overall migration ma/dm<sup>2</sup> EN 1186-14 < 10 EN 1186-14 isooctane 24h at 40°C < 10 Contact with food - Formaldehyde specific migration EN 13130-23 3% acetic acid 24h at 40°C mg/kg < 15 0 - no microbal growth Microbial growth - Smooth finish Microbial growth - Textured finish Rating Rating Evaluation of micro-organisms action EN ISO 846 1 - slight and slow microbal growth

Note to laminates with adhesive protective film

Note to laminates with adhesive protective film The protective films are designed for temporary surface protection against dirt, scratches and tool marks; they are not designed for protection against corrosion, humidity or chemicals. The laminates covered with the protective film shall be stored in a clean, dry place at room temperature (optimum 20°C), avoiding weathering and UV exposure. The protective film must be removed from the surface of the laminates after the application and before putting into use the finite element. In case of thick laminate with the protective film on both sides, it must always be removed from both sides at the same time. In any case, the removal must be made within six months from the date of shipment by Arpa Industriale. Arpa Industriale cannot be responsible for the misuse of the laminates covered with the protective film, nor for the consequences for non-recommended applications.

Disclaim

Disclamer The Product Technical Sheets provide all the technical information relevant to the performance of the product as tested by Arpa Industriale or certified testing agencies. Arpa Industriale maintains the right to change an alter the product composition and production process and thereby the performance characteristics of the product at at litimes, as reported to the Arpa Industriale website. Customers and end-users of the product are requested to check for the latest technical information regarding the products performance on the website of Arpa Industriale before application. In any case, Arpa Industriale, in every contractual relationship, will refer only to the technical information published on its website. Arpa Industriale will not assume any liability if the end-user or customer refer to any other technical information of the products.

MATERIAL PROPERTIES DATA SHEET

## SOLID | UNICOLOR



High pressure decorative laminates (HPL) according to EN 438-9:2013, consisting of a surface of decorative paper(s) impregnated with aminoplastic resins and a core of coloured cellulosic fibrous layers impregnated with thermosetting 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. The surface and the core layers have the same colour producing a uniformly coloured laminate.

Unicolor is available in the types: BTS less than 2 mm thick and BCS having thickness 2 mm or greater

Unicolor is available in the types: BTS less than 2		EN 438 classification		BCS
<u> </u>		Standard		EN 438-9
PROPERTIES	TEST METHOD	PROPERTY OR ATTRIBUTE	UNIT	
SURFACE QUALITY				
	51,400,0,4	Spots, dirt and similar surface defects	mm <sup>2</sup> /m <sup>2</sup>	≤1
Surface quality	EN 438-2.4	Fibres, hairs and scratches	mm/m <sup>2</sup>	≤ 10
DIMENSIONAL TOLERANCES				
			mm	± 0,25 for thickness 2,0 ≤ t < 3,0
Dimensional tolerances	EN 438-2.5	Thickness tolerance	mm	± 0,40 for thickness 3,0 ≤ t < 5,0 ± 0,50 for thickness 5,0 ≤ t < 8,0
			mm	± 0,70 for thickness 8,0 ≤ t < 12,0 ± 0,80 for thickness 12,0 ≤ t < 16,0
	EN 438-2.6	Length and width	mm	+ 10 / - 0
	EN 438-2.7	Straightness of edges		≤ 1,5
	EN 438-2.8	Squareness		≤ 1,5
	LIT 430-2.0	Gquareness	mm/m	≤ 12,0 for thickness 2,0 ≤ t < 6,0
	EN 438-2.9	Flatness (measured on full-size sheet).	mm/m mm/m	≤ 8,0 for thickness 6,0 ≤ t < 10,0 ≤ 5,0 for thickness 10,0 ≤ t
GENERAL PROPERTIES				
Resistance to surface wear	EN 438-2.10	Initial Point	Revolutions	≥ 150
Resistance to immersion in boiling water	EN 438-2.12	Mass increase - 2 ≤ t < 5 mm Mass increase - 5 ≤ t mm	%	≤ 5 ≤ 3
		Thickness increase - 2 ≤ t < 5 mm	%	≤ 6
		Thickness increase - 5 ≤ t mm	%	≤ 4
		Appearance - Gloss Finish Appearance - Other finish	Rating Rating	≥ 3 ≥ 4
	51,400,0.44	Appearance - Gloss Finish	Rating	≥3
Resistance to water vapour	EN 438-2.14	Appearance - Other finish	Rating	≥ 4
Resistance to dry heat (160 °C/20')	EN 438-2.16	Appearance - Gloss Finish Appearance - Other finish	Rating Rating	≥ 3 ≥ 4
	1	Cumulative dimensional change - 2 ≤ t < 5 mm	Longitudinal %	≤ 0,60
Dimensional stability at elevated temperatures	EN 438-2.17	Cumulative dimensional change - 5 ≤ t mm	Longitudinal %	≤ 1,00
		Cumulative dimensional change - $2 \le t \le 5$ mm Cumulative dimensional change - $5 \le t$ mm	Transversal % Transversal %	≤ 0,50 ≤ 0,80
Resistance to crazing	EN 438-2.24	App.072200	Pating	Surface ≥ 4
	EN 430-2.24	Appearance	Rating	Core ≥ 3
Resistance to scratching	EN 438-2.25	Appearance - Smooth Finishes Appearance - Textured Finishes	Rating Rating	≥ 2 ≥ 3
Resistance to staining	EN 438-2.26	Appearance - Group 1 & 2	Rating	≥ 5
	211100 2.20	Appearance - Group 3	Rating	≥ 4
Light fastness (Xenon-arc)	EN 438-2.27	Contrast	Grey scale rating	Surface ≥ 4 Core ≥ 3
Flexural Modulus	EN ISO 178	Stress	Mpa	≥ 9000
Flexural strength	EN ISO 178	Stress	Мра	≥ 80
Electrostatic properties	EN 61340-4-1	Point to point resistance	Ω	10 <sup>9</sup> ÷ 10 <sup>11</sup>
Field condition his objectives	EN 01340-4-1	Vertical resistance	Ω	10 <sup>9</sup> ÷ 10 <sup>11</sup>
<b>D</b>				
Density	EN ISO 1183	Density	g/cm <sup>3</sup>	≥ 1,40
Density FIRE PERFORMANCES	EN ISO 1183	Density	g/cm <sup>3</sup>	≥ 1,40
-	•	Density		
FIRE PERFORMANCES	•			
FIRE PERFORMANCES Reaction to fire OTHER PROPERTIES	The reaction to fire of Ur	nicolor Solid is related to the final installed panel. The manu	facturer of the final installed p	anel is responsible for the correct
FIRE PERFORMANCES Reaction to fire OTHER PROPERTIES Thermal resistance / conductivity	The reaction to fire of Un	nicolor Solid is related to the final installed panel. The manu		anel is responsible for the correct 0.2 to 0.5
FIRE PERFORMANCES Reaction to fire OTHER PROPERTIES	The reaction to fire of Ur	nicolor Solid is related to the final installed panel. The manu	facturer of the final installed p	anel is responsible for the correct 0,2 to 0,5 E1
FIRE PERFORMANCES Reaction to fire OTHER PROPERTIES Thermal resistance / conductivity Formaldehyde emission	The reaction to fire of Ur EN 12664 EN 13986 EN 1186-3 EN 1186-3	nicolor Solid is related to the final installed panel. The manu Thermal resistance / conductivity Formaldehyde emission classification 3% acetic acid 24h at 40°C 50% ethand 24h at 40°C	facturer of the final installed p W/mK Class	anel is responsible for the correct 0.2 to 0.5
FIRE PERFORMANCES Reaction to fire OTHER PROPERTIES Thermal resistance / conductivity Formaldehyde emission Contact with food - Overall migration	The reaction to fire of Ur           EN 12664           EN 13986           EN 1186-3	nicolor Solid is related to the final installed panel. The manu Thermal resistance / conductivity Formaldehyde emission classification 3% acetic acid 24h at 40°C	facturer of the final installed p	anel is responsible for the correct 0,2 to 0,5 E1 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1
FIRE PERFORMANCES Reaction to fire OTHER PROPERTIES Thermal resistance / conductivity Formaldehyde emission	The reaction to fire of Ur EN 12664 EN 13986 EN 1186-3 EN 1186-3	nicolor Solid is related to the final installed panel. The manu Thermal resistance / conductivity Formaldehyde emission classification 3% acetic acid 24h at 40°C 50% ethanol 24h at 40°C	facturer of the final installed p W/mK Class	anel is responsible for the correct 0,2 to 0,5 E1 <10 <10 <10 <10 <10 <10 <10 <10 <10 <1

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