

Material Property Datasheet

TRESPA® VIRTUON®

Decorative high-pressure compact laminates according to EN 438-4:2005 of thicknesses of 6 mm (± 1/4 in) or greater for indoor applications. Sheets consisting of layers of wood-based fibres (paper and/or wood) impregnated with thermosetting resins and surface layer(s) on one or both sides, having decorative colours or designs. A transparent topcoat is added to the surface layer(s) and cured by Trespas unique in-house technology Electron Beam Curing (EBC), to enhance the scratch resistance and light protecting properties. These components are bonded together with simultaneous application of heat (≥ 150° C / ≥ 302° F) and high specific pressure (> 7 MPa) to obtain a homogeneous non-porous material with increased density and integral decorative surface. They are available in the Standard grade (CGS) and in the Fire-Retardant grade (CGF).

Properties	Test method	Property or attribute	Unit	Result [Ⓐ] [Ⓑ]			
				Grade: CGS (Virtuon®) Standard: EN 438-4 Colour/Decor: All [Ⓑ]	Grade: CGF (Virtuon® FR) Standard: EN 438-4 Colour/Decor: All [Ⓑ]		
Surface quality							
Surface quality	EN 438-2 : 4	Spots, dirt, similar surface defects	mm ² /m ² in ² /ft ²	≤ 1 ≤ 0.0001			
		Fibres, hairs & scratches	mm/m ² in/ft ²	≤ 10 ≤ 0.036			
Dimensional tolerances							
Dimensional tolerances	EN 438-2 : 5	Thickness	mm	6.0 ≤ t < 8.0: +/- 0.40 8.0 ≤ t < 12.0: +/- 0.50 12.0 ≤ t < 16.0: +/- 0.60 16.0 ≤ t < 20.0: +/- 0.70			
				in	0.2362 ≤ t < 0.3150 : +/- 0.0157 0.3150 ≤ t < 0.4724 : +/- 0.0197 0.4724 ≤ t < 0.6299 : +/- 0.0236 0.6299 ≤ t < 0.7874 : +/- 0.0275		
			EN 438-2 : 9		Flatness	mm/m	≤ 2
				in/ft		≤ 0.024	
	EN 438-2 : 6	Length & width	mm	+ 5 / - 0			
			in	+ 0.1968 / - 0			
	EN 438-2 : 7	Straightness of edges	mm/m	≤ 1			
			in/ft	≤ 0.012			
	Trespa Standard	Squareness	mm	2550 x 1860 = max. difference between diagonals (x-y) = 4 3050 x 1530 = max. difference between diagonals (x-y) = 4 3650 x 1860 = max. difference between diagonals (x-y) = 5 4270 x 2130 = max. difference between diagonals (x-y) = 6			
			in	100.39 x 73.23 = max. difference between diagonals (x-y) = 0.1575 120.08 x 60.24 = max. difference between diagonals (x-y) = 0.1575 143.70 x 73.23 = max. difference between diagonals (x-y) = 0.1969 168.11 x 83.86 = max. difference between diagonals (x-y) = 0.2362			
Physical properties							
Resistance to surface wear	EN 438-2 : 10	Wear resistance - Revolutions (min)	Initial point Wear value	≥ 50 ≥ 150			
Resistance to impact by large diameter ball	EN 438-2 : 21	Indentation diameter - 6 ≤ t mm with drop height 1.8m	mm	≤ 10			
Resistance to scratching	EN 438-2 : 25	Force	Rating (min)	≥ 3			
Resistance to dry heat (160°C/320°F)	EN 438-2 : 16	Appearance	Rating (min)	≥ 4			
Resistance to wet heat (100°C/212°F)	EN 12721	Appearance	Rating (min)	≥ 4			
Resistance to immersion in boiling water	EN 438-2 : 12	Mass increase (% max)	t ≥ 6 mm	≤ 1			
		Thickness increase (% max)	t ≥ 6 mm	≤ 1			
		Appearance	Rating (min)	≥ 4			
Dimensional stability at elevated temperature	EN 438-2 : 17	Cumulative dimensional change	Longitudinal %	≤ 0.25			
			Transversal %	≤ 0.25			
Resistance to staining	EN 438-2 : 26	Appearance - Rating (min)	Group 1 & 2	5			
			Group 3	5			
Light fastness (xenon arc)	EN 438-2 : 27	Contrast (Wool scale)	ASTM G53-91 (314-400nm)	≥ 6			
Resistance to water vapour	EN 438-2 : 14	Appearance	Rating (min)	≥ 4			
Resistance to cigarette burns	EN 438-2 : 30	Appearance	Rating (min)	≥ 3			
Resistance to crazing	EN 438-2 : 24	Appearance	Grade (min)	≥ 4			
Modulus of elasticity	EN ISO 178	Stress	MPa	≥ 9000			
	ASTM D638-08	Stress	Psi	≥ 1305000			
Flexural strength	EN ISO 178	Stress	MPa	≥ 120			
	ASTM D790-07	Stress	psi	≥ 17500			
Tensile strength	EN ISO 527-2	Stress	MPa	≥ 70			
	ASTM D638-08	Stress	psi	≥ 10150			
Density	EN ISO 1183	Density	g/cm ³	≥ 1.35			
	ASTM D792-08	Density	g/cm ³	≥ 1.35			
Resistance to fixings	ISO 13894-1	Pull out strength	N	6 mm : ≥ 2000 8 mm : ≥ 3000 ≥ 10 mm : ≥ 4000 0.2362 in : ≥ 2000 0.3150 in : ≥ 3000 ≥ 0.3937 in : ≥ 4000			

[Ⓐ] Due to conversion from metric values, the US values provided are approximate.

[Ⓑ] All data are related to the products mentioned in the Trespa® Virtuon® standard delivery programme.

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				Grade: CGS (Virtuon®)	Grade: CGF (Virtuon® FR)
				Standard: EN 438-4	Standard: EN 438-4
				Colour/Decor: All [Ⓒ]	Colour/Decor: All [Ⓒ]
Fire performance					
Europe					
Reaction to Fire	EN 438-7	Classification $t \geq 6$ mm / 0.2362 in	Euroclass	D-s2, d0	B-s2, d0
		Classification $t \geq 8$ mm / 0.3150 in (Metal Frame)	Euroclass		B-s1, d0
Reaction to Fire (France)	NF P 92-501	Classification	Class	M3	M1
North America					
Material Surface Burning Characteristics [Ⓓ]	ASTM E84/UL 723	Classification	Class	n.a.	A
		Flame Spread Index	FSI	n.a.	0-25
		Smoke Developed Index	SDI	n.a.	0-450
Asia Pacific					
Reaction to Fire (China)	GB 8624	Classification	Class	n.a.	B-s1, d0, t1
Other properties					
Realease of formaldehyde	EN 717-2	Classification	Class		E1

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[Ⓑ] All data are related to the products mentioned in the Trespa® Virtuon® standard delivery programme.

[Ⓒ] Laboratory test results are not intended to represent hazards that may be present under actual fire conditions.

Please note:

Trespa® Virtuon® is engineered for vertical interior wall coverings as well as horizontal interior ceiling applications. For other applications please contact your local Trespa representative. Storage, machining, mounting and cleaning instructions are provided by the manufacturer.



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