

Material Property Datasheet

TRESPA® VIRTUON®

Decorative high-pressure compact laminates according to EN 438-4:2005 of thicknesses of 6 mm ($\pm 1/4$ in) or greater for indoor applications. Sheets consisting of layers of wood-based fibers (paper and/or wood) impregnated with thermosetting resins and surface layer(s) on one or both sides, having decorative colors 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 ($\geq 150^{\circ}\text{C}$ / $\geq 302^{\circ}\text{F}$) and high specific pressure ($> 7\text{ MPa}$) 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 ^[A] ^[B]	
				Grade: CGS (Virtuon®) Standard: EN 438-4 Color/Decor: All ^[B]	Grade: CGF (Virtuon® FR) Standard: EN 438-4 Color/Decor: All ^[B]
Surface quality					
Surface quality	EN 438-2 : 4	Spots, dirt, similar surface defects	mm ² /m ² in ² /ft ²	≤ 1 ≤ 0.0001	
		Fibers, hairs & scratches	mm/m ² in/ft ²	≤ 10 ≤ 0.036	
Dimensional tolerances					
Dimensional tolerances	EN 438-2 : 5	Thickness	mm	$6.0 \leq t < 8.0$: +/- 0.40	
				$8.0 \leq t < 12.0$: +/- 0.50	
			$12.0 \leq t < 16.0$: +/- 0.60		
			$16.0 \leq t < 20.0$: +/- 0.70		
	in	$0.2362 \leq t < 0.3150$: +/- 0.0157			
		$0.3150 \leq t < 0.4724$: +/- 0.0197			
	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	$2550 \times 1860 = \text{max. difference between diagonals (x-y) = 4}$		
		in	$3050 \times 1530 = \text{max. difference between diagonals (x-y) = 4}$		
			$3650 \times 1860 = \text{max. difference between diagonals (x-y) = 5}$		
			$4270 \times 2130 = \text{max. difference between diagonals (x-y) = 6}$		
			$100.39 \times 73.23 = \text{max. difference between diagonals (x-y) = 0.1575}$		
			$120.08 \times 60.24 = \text{max. difference between diagonals (x-y) = 0.1575}$		
			$143.70 \times 73.23 = \text{max. difference between diagonals (x-y) = 0.1969}$		
			$168.11 \times 83.86 = \text{max. difference between diagonals (x-y) = 0.2362}$		
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 - $6 \leq t$ 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)	$t \geq 6$ mm	≤ 1	
		Thickness increase (% max)	$t \geq 6$ 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 vapor	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	$6\text{ mm} : \geq 2000$	
				$8\text{ mm} : \geq 3000$	
				$\geq 10\text{ mm} : \geq 4000$	
				$0.2362\text{ in} : \geq 2000$	
				$0.3150\text{ in} : \geq 3000$	
				$\geq 0.3937\text{ in} : \geq 4000$	

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

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

Please visit www.trespa.info for the most up to date version of this document.

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Properties	Test method	Property or attribute	Unit	Result [Ⓐ] [Ⓑ]	
				Grade: CGS (Virtuon®)	Grade: CGF (Virtuon® FR)
				Standard: EN 438-4	Standard: EN 438-4
				Color/Decor: All [Ⓒ]	Color/Decor: All [Ⓒ]
Fire performance					
Europe					
Reaction to Fire	EN 438-7	Classification t ≥ 6 mm / 0.2362 in Classification t ≥ 8 mm / 0.3150 in (Metal Frame)	Euroclass	D-s2, d0	B-s2, d0 B-s1, d0
Reaction to Fire (France) North America	NF P 92-501	Classification	Class	M3	M1
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					
Release 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 program.

[Ⓒ] 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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