

## STANDARD PANEL 1-13



**Panel Face:** a<sup>3</sup> CeramicSteel – 0.56 mm of steel enameled in porcelain with one finished side 0.84 mm total thickness

**Panel Core:** Cement Bonded Particle Board – 12 mm of cement bonded particle board

**Panel Back:** Galvanized Steel – 0.4 mm thick cold rolled galvanized steel

**Adhesive:** Hot Melt Polyurethane

**Edge Treatment:** None

Panel Property	Testing Standard	Unit	Value
Panel thickness	EN 438-2 : 5	mm	13.4 ± 0.4
Length tolerance	EN 438-2 : 6	mm	0.1%
Width tolerance	EN 438-2 : 6	mm	0.1%
Squareness	Measured difference in diagonals on a 3050 x 1200 mm panel	mm	± 3
Fire classification (composite panel only)	EN 13501-1		B, s1, d0
Fire classification (with edge finish and standard framing system)	EN 13501-1		B, s1, d0
Neutral salt spray test (composite panel only)	ISO 9227		< 24 h
Neutral salt spray test (with edge finish and standard framing system)	ISO 9227		> 1000 h
Minimal edge covering (framing system)		mm	6
Dimensional stability	EN 318	mm/m mm/m % %	Change in length 65 to 85% RH: 0.2 Change in length 65 to 30% RH: -0.4 Change in length 65 to 85% RH: 0.1 Change in length 65 to 30% RH: -0.2
Flatness	EN ISO 28722 (§5.7)		Max. 0.15% deflection of the largest diagonal or to the diameter of the panel
Weight		kg/m <sup>2</sup>	23.3
Shock resistance	ETAG 034 (§5.4.4.1) (hard body impact) ETAG 034 (§5.4.4.2) (soft body impact)		No collapse, penetration or fracture @ 10 Nm No collapse, penetration or fracture @ 900 Nm
Density	EN 634	g/cm <sup>3</sup>	1.72
Tension	ASTM C 297	N MPa	Break load – 3500 N P <sub>z</sub> <sup>FTU</sup> – 1.4 MPa
Shear test	ASTM D 1002	N Kg/mm <sup>2</sup>	1070 N 0.169 Kg/mm <sup>2</sup>
E-modulus	EN ISO178	N MPa	Break load – 615 N E <sub>t</sub> – 3206 MPa
Bending test	EN 12467 (§7.3.2)	N MPa	Break load – 9070 N MOR – 62 MPa
Sound reduction index	EN ISO 10140-2		32 dB (Rw)
Shear load of fixtures	ETAG 034 (§5.4.2.1.2)		NA
Tensile load of fixtures	ETAG 034 (§5.4.2.1.1)		NA
Wind resistance	ETAG 034 (§5.4.1)	Pa Pa	No fail @ 10000 Pa over pressure 3000 Pa under pressure
Laboratory ageing of sandwich constructions	ASTM C 481 – cycle B		No delamination after 6 test cycles
Bending test after freeze / thaw cycle	EN 12467 (§7.4.1) (100 cycli)	N MPa	Break load – 9359 N MOR – 65 Mpa
Bond test before & after freeze / thaw cycle	EN 12467 (§7.4.1) (100 cycli)	N/mm <sup>2</sup> N/mm <sup>2</sup>	Before freeze-thaw: 0.8 N/mm <sup>2</sup> After freeze-thaw: 0.11 N/mm <sup>2</sup>

## a<sup>3</sup> CeramicSteel Surface

0.56 mm thick steel coated with vitreous enamel surface with a total thickness of 0.84 mm

a <sup>3</sup> CeramicSteel Surface	Testing Standard	Unit	Value
Gloss – Type G	ISO 2813 ASTM D 523	Gloss units (GU)	65 ± 10 GU (20°)
Gloss – Type M	ISO 2813 ASTM D 523	Gloss units (GU)	60 ± 10 GU (60°)
Color tolerance	ISO 7724 ASTM D 2244-02	ΔE <sup>94</sup>	ΔE <sup>94</sup> ≤ 1.5 (compared to reference sample)
Reflectance	ISO 7724 ASTM D 2244-02	%	Y-Value up to 93%, depending on color
Orange peel	ISO 2813 ASTM D 523		Short wave (SW) ≤ 55 Long wave (LW) ≤ 25 Distinctness of image (DOI) ≥ 60
Defect appearance	EN 438-2:4		Free from defects liable to change the general appearance of the panel
Mohs hardness	EN 15771		Min. 5
Scratch resistance	ISO 15695	N	Min. 7
Pencil hardness	ASTM D-3363		> 9H
Wear resistance	ASTM C501	g	Max. 0.1 (abrasive S33 1 kg/1000 rev)
Impact	ISO 4532		No damage over 2 mm after 24 h (20 N load)
Coating adhesion	EN 10209 Annex D		Min. class 2
Porosity	EN14430	#/m <sup>2</sup>	< 10 (1800 V)
Cold acid resistance	ISO 28706-1-9		Min. class A
Boiling acid resistance	ISO 28706-2-10	g/m <sup>2</sup>	Max. 18.5
UV resistance	ISO 4892-3 (cycle 2)	ΔE <sup>94</sup>	ΔE <sup>94</sup> ≤ 0.5 (2000 h)
Color stability	ASTM C 538	ΔE <sup>94</sup>	ΔE <sup>94</sup> ≤ 5 (24 h)
Graffiti resistance	EN ISO 28722 (§7)		No color or gloss change after cleaning

### This panel conforms to the following internationally recognized standards:

ISO 28722, Vitreous and porcelain enamels – Characteristics of enamel coatings applied to steel panels intended for architecture

European Enamel Authority, EEA 7.13, 7.14 – Quality requirement for architectural panels

European Normalization, EN 14431 – Vitreous and porcelain enamels – Characteristics of the enamel coatings applied to steel panels intended for architecture

Porcelain Enamel Institute, PEI 1001 – Specifications for architectural porcelain enamel