

Elylite® Stainless composite panel

Technical datasheet

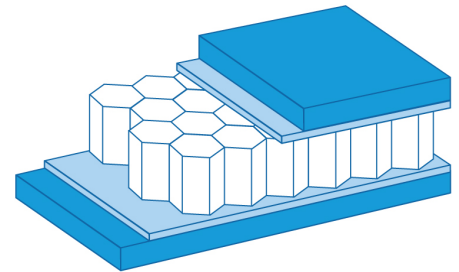
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Description

The Elylite® Stainless composite panels are composed of two stainless steel skins, or one stainless steel skin in combination with one carbon steel skin, combined with a honeycomb core (HC), joined together by adhesive bonding.

Elylite® Stainless composite panels are particularly suited for any aesthetical application where a combination of low weight, extremely high stiffness, durability and cost efficiency is required. Further, these panels are easily recyclable. Typical application areas are furniture, partitioning systems, floors, doors, elevators, as well as façade panels.



Product range

Standard panels

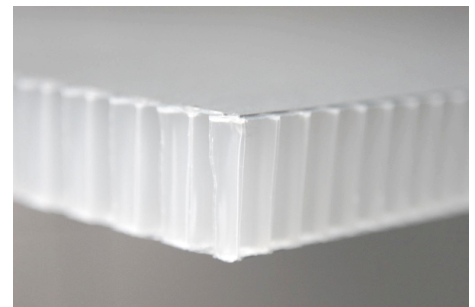
Elytra offers 2 types of Elylite® Stainless composite panels:

HC Stainless indoor – composition:

- Polypropylene Honeycomb Core with a density of 80 kg/m³.
- One 0.4 mm brushed ferritic stainless steel skin grade 430.
- One 0.4 mm galvanized carbon steel skin Z275, for improved corrosion protection.
- Joined together by a high performance adhesion system.

HC Stainless outdoor – composition:

- Polypropylene Honeycomb Core with a density of 80 kg/m².
- Two 0.4 mm brushed austenitic stainless steel skins grade 304.
- Joined together by a high performance adhesion system.



Dimensions

Indoor (*)	Core	Skin 1	Skin 2	1200 x 2400 mm	1200 x 2750 mm
12.8 mm	HC 80 kg/m ³ 12 mm	Stainless 430 0.4 mm	Galva Z275 0.4 mm	•	•
15.8 mm	HC 80 kg/m ³ 15 mm	Stainless 430 0.4 mm	Galva Z275 0.4 mm	•	•
20.8 mm	HC 80 kg/m ³ 20 mm	Stainless 430 0.4 mm	Galva Z275 0.4 mm	•	•
24.8 mm	HC 80 kg/m ³ 24 mm	Stainless 430 0.4 mm	Galva Z275 0.4 mm	•	•

(*) Panels are always provided with a foil to protect the stainless steel surface

Outdoor (*)	Core	Skin 1 & 2	1200 x 2400 mm	1200 x 2750 mm
12.8 mm	HC 80 kg/m ³ 12 mm	Stainless 304 0.4 mm	•	•
15.8 mm	HC 80 kg/m ³ 15 mm	Stainless 304 0.4 mm	•	•
20.8 mm	HC 80 kg/m ³ 20 mm	Stainless 304 0.4 mm	•	•
24.8 mm	HC 80 kg/m ³ 24 mm	Stainless 304 0.4 mm	•	•

(*) Panels are always provided with a foil to protect the stainless steel surface

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On request

Other compositions are available on request.

Composition	Different skin thickness
	Different core thickness and/or density
	Different (stainless) steel grades

Dimensions (*)	<i>Minimum</i>	<i>maximum</i>	<i>tolerances</i>
<i>Length (**)</i>	400 mm	3000 mm	+/- 2 mm
<i>Width</i>	400 mm	1500 mm	+/- 2 mm
<i>Thickness</i>	8 mm	50 mm	+/- 0.4 mm

(*) Certain combinations might not be available

(**) A maximum length of up to 6000 mm is available upon special request

Surfaces	Different stainless aspects
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Technical characteristics

Weight, stiffness, compression & shear strength

The Elylite® Stainless composite panels have an extremely high stiffness / weight ratio and outperform most competitive materials.

Weight (kg/m²)	<i>Indoor</i>	<i>Outdoor</i>
12.8 mm	7.47	7.55
15.8 mm	7.71	7.79
20.8 mm	8.11	8.19
24.8 mm	8.43	8.51

Bending stiffness E*I (Nm²/m)	<i>Indoor</i>	<i>Outdoor</i>
12.8 mm	6313	5947
15.8 mm	9740	9176
20.8 mm	17101	16113
24.8 mm	24478	23064

Core Compression strength (MPa)	<i>Elylite® Stainless</i>
HC 80 kg/m ³	1.3

Core Shear strength (MPa)	<i>Elylite® Stainless</i>
HC 80 kg/m ³	0.5

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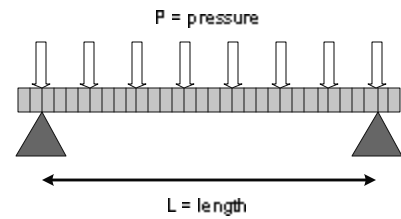
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Deflection

Deflection (mm) (*)	L = 1000 mm, W = 1000 mm, P = 5000 N/m ² (M _{tot} = 500 kg)	
	Indoor	Outdoor
12.8 mm	14.5	15.2
15.8 mm	10.1	10.5
20.8 mm	6.4	6.6
24.8 mm	4.8	5.0

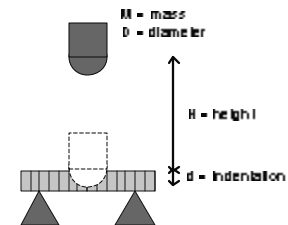
(*) calculated values including bending and shear stiffness.



Impact resistance

The steel and stainless skins have a very high resistance to impact and outperform most other light weight metal based composite panels.

Impact resistance (mm)	M = 2 kg, H = 1000 mm, diameter = 20 mm
Stainless 0.4 mm	5.1
1 mm aluminum (ref)	6.6



Damping and acoustic properties

The Elylite® Stainless composite panels demonstrate excellent vibration damping properties in regard to other monolithic and composite materials. These properties are an important asset in the reduction of structural vibrations.

The Elylite® Stainless composite panels also demonstrate good noise insulation properties.

Fire behavior

The complete panels reach an M1/F1 performance level in accordance with NF F16-101.

Weather resistance

- The Elylite® Stainless composite panels are stable within a temperature range from -40 °C to +80 °C.
- The Elylite® Stainless composite panels are resistant to salt water, oil, fats and most other agents. Please contact Elytra for specific corrosion protection requirements.
- Water absorption of the panels is minimal.

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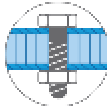


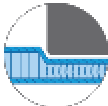
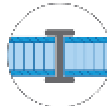
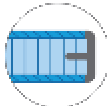
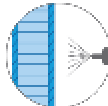
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Processing guidelines

Please refer to Elytra's 'Processing Guidelines for Steel Composite Panels' for following panel processing topics:

 <i>Cutting</i>	 <i>Milling</i>	 <i>Drilling</i>	 <i>Fastening</i>	 <i>Adhesive bonding</i>
 <i>Bending</i>	 <i>Pressing</i>	 <i>Joining</i>	 <i>Edge finishing</i>	 <i>Surface finishing</i>

Or contact Elytra for any further information.

Storage

Elytra advises to protect the panels from rain, penetration of moisture and condensation during storage. Elylite® Stainless composite panels can be stacked up to a height of 2 m.

These datasheet represent the current state of our technical knowledge. Its purpose it to inform our customers about the Elylite® Stainless composite panels and their applications. The datasheets do not guarantee particular properties or suitability for a specific application. We reserve the right to make changes in accordance with technological advancements and other developments.

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