STARCELL
HONEYCOMB & COMPOSITE PANELS

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E-Mail: info@starcellspa.com Website: www.starcellspa.com

STALUFLEX® AL

Description of the product

STALUFLEX ®AL is a sandwich panel produced by Starcell Spa, with a grooved aluminium core and natural or superficially treated coarse aluminium skins. The product's main fields of application are: construction, furniture, naval, railway and all those sectors where mechanical characteristics, lightness and fire resistance are required. Main features are the high rigidity associated with lightness, total recyclability and ease of processing with common machine tools.

Layers

1) CORE
corrugated in aluminium
(Starcell SpA production)
aluminium alloy: series 3xxx-5xxx
product in different heights: from 2 to 28 mm

2) ADHESIVE:
polyurethane glue produced directly for Starcell S.p.A by a leading international chemical company

3) EXTERNAL SKINS
Coarse or surface treated aluminium sheet
Thicknesses of skins: 0.3 - 0.55 – 0.78 – 0.9 - 1.0 mm
other thicknesses available upon request

Technical sheet of the panel

PRODUCT ID CODE		
Code	*Value*	*Meaning*
STALUFLEX® ALxx/ yy-W-zz		Code
STALUFLEX®	STALUFLEX®	Product family
AL	AL	Core Material and Skins
xx	4-6-10-15-20-25	Nominal thickness of the panel (mm)
yy	0.3-0.55-0.78-0.9-1.0	Nominal thickness of the upper skin (mm)
W	0.3	Nominal thickness of the core (mm)
zz	0.3-0.55-0.78-0.9-1.0	Nominal thickness of the lower skin (mm)
	S(2)- S(7)- S(12)	{2) - (7) - {12) = standard panel dimensions

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CHARACTERISTICS OF MATERIALS AND COMPONENTS

SKINS

Material:	aluminium sheet
Type:	alloy series 1xxx - 3xxx -5xxx
Standard thicknesses (mm):	0,3 - 0,55 - 0,78 - 0,9 - 1,0
Surface appearance:	natural coarse - superficially treated, painted
Standard adhesive:	polyurethane

CORRUGATED

Material:	aluminium sheet
Type:	alloy series 3xxx - 5xxx
Standard nominal thicknesses (mm):	0,30
Nominal height of the grooved core (mm):	2-4-5,8–8-13,2-15,9–18-20,8-23-26

PHYSICAL DIMENSIONAL CHARACTERISTICS OF THE PANEL

DIMENSIONS

Standard width (mm):	1.000-1.220-1.250-1.500 mm
Standard length (mm):	2.050-2.550-3.050 - max. length: 4.300
Special (mm):	ON REQUEST
Tolerance skin misalignment (mm):	±5

THICKNESSES

Standard nominal thicknesses (mm):	4	6	10	15	18	20	25
Special (mm):	ON REQUEST						
Tolerance (mm):	± 0,5 (except for tolerance to be agreed)						

WEIGHTS*

Weights referred to standard thicknesses (kg/ m):[2]	4,02	4,23	4,33	4,54	4,69	4,80	5,23
Tolerance (Kg/ m²):	± 0,2						

* The weights refer to panels with the following characteristics: corrugated thickness 0,30 mm - skins: 0,55 mm

UK and Ireland Sales
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MECHANICAL CHARACTERISTICS OF THE PANEL

The characteristics of this sheet refer to a type of panel:

STALUFLEX ® AL xx where xx indicates the different nominal thicknesses of the panel

Starcell's Technical Department will gladly work with customers to determine the features of other panel configurations

TYPE	STANDARD	CHARACTERISTIC VALUE						
Nominal standard thickness		4	6	10	15	18	20	25
Load (Kg) concentrated over a 100 mm ^{2} surface area (support panel 1,200X1,200 mm) *							150	
Concentrated load arrow							2,6	
Max. load (N)	DIN 53293EN 14125		318		806			
Bending at maximum load** (mm):	DIN 53293EN 14125		7,66		4,16			
Resistance to peeling** (N)	DIN 53295	230N (direction L) - 330N (direction W)						
Resistance to compression** (Kg/ cm ^{2})	UNI 4913		19,99		2,67			
Elasticity module (E)** (N/ mm ^{2})	DIN 53293		24.207		24.497			
Rigidity module (R)** (N/ m^2)	DIN 53293		7		106			
Thermal expansion coefficient** (0 C-1):								
Operating temperature(°C):		from -25 °C to + 100 °C (standard production)						

(*) values obtained by the Starcell SpA laboratory on a STALUFLEX panel with a thickness of the corrugated board of 0,3 mm primed and a thickness of the skins of 1,0 mm, both primed
(**) values obtained by the Starcell SpA laboratory on a STALUFLEX panel with a thickness of the corrugated board of 0,3 mm primed and a thickness of the skins of 0,5 mm, both primed
The values shown in the above table will be updated whenever new data from laboratory tests is available

CERTIFICATIONS

Type	Standard	Sector	Class
Fire behaviour	EN13501-1	CIVIL	A1
Fire behaviour	IMO Res. MSC307(88) - 2010FTP Code	NAVAL	C - Class
Fire behaviour	UNI EN 45545 (ex UNI 11170-3)	RAILWAY	Underway

PROPERTIES

- Very high rigidity and resistance to bending
- Excellent dimensional stability, also in terms of flatness over time;
- Excellent ratio between mechanical performance and weight
- Excellent resistance to atmospheric agents.
- Ease of processing with CNC or manual equipment suitable for aluminium processing.
- Excellent product recyclability (100%).
- Wide range of operating temperatures (from -25 ° C to + 100 ° C).

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APPLICATIONS

STALUFLEX® AL panels are widely used in the most varied fields of application, thanks to their particular characteristics: lightness, high rigidity and flatness, high mechanical performance, fire resistance, absence of toxic fumes and dimensional stability over time. In the civil sector, they are chosen by architectural firms for their versatility both in the structural field (e.g. ventilated façades, flooring, partition walls, sunshades, canopies, parapets) and in finishing (furnishings and fittings in general); in the transport sector, the railway and naval market represent two fundamental uses of the panels, chosen to build partition walls, false ceilings, bathrooms and raised floors. The total recyclability of the panel, being entirely made in aluminium, extends their use wherever regulations or the commitment to environmental protection represent an essential constraint.

STORAGE

STALUFLEX®AL panels belong to the "semi-finished" category and therefore subject to further processing; we recommend storing the panels horizontally in a closed and dry environment, possibly away from heat sources and to support them along the perimeter. Do not expose the packaged panels to atmospheric agents or sunlight for long periods of time.

SAFETY DATA SHEETS

On request, safety data sheets of this product are available in Italian or English. For more information, please visit: www.starcellspa.com

Rev. 3 technical data sheet updated on 21-04-2021

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