

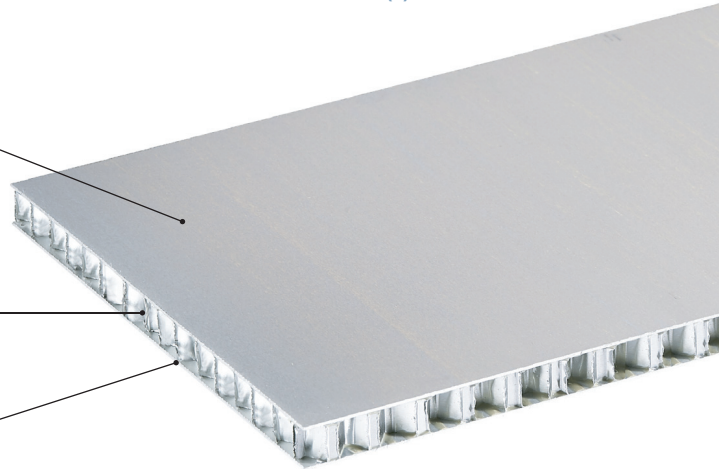
## Compocel® AL FR

### ALUMINIUM SKINS

Thickness mm: 0,5 - 0,8 - 1 (standard)

### CORE

Aluminium honeycomb (Alloy series 3000\*) with hexagonal cells  
**Diameter:** Ø1/4", Ø3/8", Ø1/2", Ø3/4"  
**Thickness Foil:** from 50 to 70 microns



\* To Aluminium alloy series 3000 belong: Aluminium alloy 3003, Aluminium alloy 3005, Aluminium alloy 3103, Aluminium alloy 3104.

### Technical data sheet for standard panels (dimensions, materials and special finishes on request)

TECHNICAL CHARACTERISTICS OF PANEL		panel size		standard 1250 x 2500 / 1250 x 3000 / 1500 x 3000; On request up to 2000 x 7000						
		thickness' tolerance	mm	± 0,3						
dimension's tolerance	mm	± 30								
planarity ***	mm/m	+/-1								
skins' thickness	mm	from 0,5 to 5,0								
skin alluminium alloy		1000 series, 3000 series, 5000 series								
honeycomb alluminium alloy		3000 series, 5000 series								
thickness of honeycomb foil	µm	50 and 70								
diameter of honeycomb	Ø = mm	from 3 to 19								
honeycomb density	Kg/m³	from 20 to 163								
adhesive		two-components polyurethane adhesive/thermoplastic film/ epoxy film/ two-components epoxy adhesive								
skin characteristics		rough/primer/polyester/PVDF/ anodised								
PANEL PHYSIC AND MECHANIC PERFORMANCES	type panel (some examples)	Panel Thickness mm	6	10	15	10	15	20	25	
		Skin Thickness mm	0,5 + 0,5			1,0 + 1,0				
	panel weight ‡	Kg/m²	3,8	4,0	4,3	6,7	7,0	7,3	7,6	
	compressive stabilised strength MPa ** ‡	ASTM C 365-365 M	Mpa	2,9						
	maximum load ** ‡	ASTM C 393 †	N	190	340	520	600	1.000	1.350	1.700
	deflection at maximum load ‡	ASTM C 393 †	mm	14	8	6	8	6	4	3
	skins E Elastic Modulus		Mpa	68.000 - 70.000						
	moment of inertia I **		mm⁴/m	7.600	22.000	52.000	40.000	98.000	181.000	288.000
	average resistance to peeling ** ‡	ASTM D1781-98 (2012)		> 280 N/76 mm or 40 Nmm/mm						
	maximum service temperature **		°C	- 40 / + 60; on request + 80 / + 100 / + 150						
thermal expansion coefficient **		°C <sup>-1</sup>	2,3 x 10 <sup>-5</sup>							

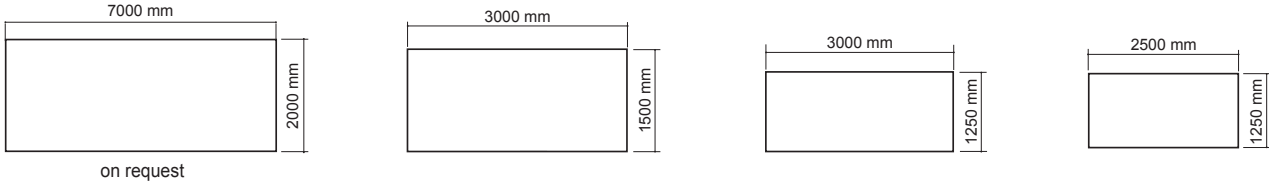
\*\* Tested by Internal Laboratory

\*\*\* Approximate value

† Sample dimension with 4 support points (L, W) 540x50mm; distance among the lower points 500mm, distance among the upper points 250mm

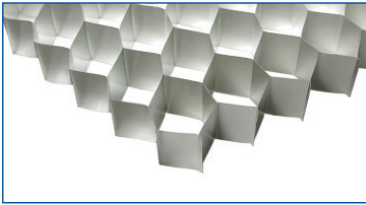
‡ Values for a panel with a honeycomb core of Ø6 56kg/m³ (Ø 1/4")

**Standard dimensions (other dimensions available on request) - Dimension tolerance ±30mm**



Honeycomb core's properties		50 Microns			
Type	ALUMINIUM ALLOY 3003/3005/3103/3104				
Ø honeycomb in mm	6	9	12	19	
Ø honeycomb in inches	1/4"	3/8"	1/2"	3/4"	
Density Kg/m <sup>3</sup>	56 - 59	39 - 40	29 - 30	20 - 21	
Compressive stabilised strength MPa	3,0 - 3,5	1,4 - 1,95	0,8 - 0,95	0,4 - 0,6	




Honeycomb core's properties		70 Microns			
Type	ALUMINIUM ALLOY 3003/3005/3103/3104				
Ø honeycomb in mm	6	9	12	19	
Ø honeycomb in inches	1/4"	3/8"	1/2"	3/4"	
Density Kg/m <sup>3</sup>	80 - 83	54	40 - 42	27 - 29	
Compressive stabilised strength MPa	4,3 - 4,6	2,5 - 2,6	1,41 - 1,5	0,85 - 0,9	



Aluminium honeycomb

Certified version COMPOCEL AL FR must be required while asking for a quotation.  
 Certified products must be required in advance and might have a price surcharge due to certified materials.

CONFORM TO AMERICAN STANDARDS				
ASTM C67-M18	ASTM E72-15	ASTM C297 M-16	ASTM E84-17	TAS 201 TAS 203
Water Absorption	Strength-Transverse load	Flatwise tensile strength	Flamespread	Impact and Cyclic Wind Pressure

FIRE REACTION			
SECTOR	NORM	CLASSIFICATION	DESCRIPTION
SHIPBUILDING	FTP CODE 2010 3.18a  0407	<b>LOW FLAMESPREAD</b>  <b>MOD. B.</b> Certification Nr. MED- 150 (IG-038-2014) REV.10  <b>MOD. D.</b> Certification Nr. MED- 154 (IG-178-2014) REV.16	<b>COMPOCEL AL FR</b>  Aluminum honeycomb panel complying with the MED directive for the application in ships registered or applied in the European Union. Item N. MED / 3.18a, IMO 2010 FTP Code, Annex 1
	U.S. Coast Guard 	<b>MOD. B.</b> USCG Approval Nr 164.112/0407  <b>MOD. D.</b> USCG Approval Nr 164.112/0407/MED000154	<b>COMPOCEL AL FR</b>  Aluminium honeycomb sandwich panel
	FTP CODE 2010 3.64 	<b>BULKHEAD C. CLASS DIVISION</b>  <b>INCOMBUSTIBILITY</b>  Certificate Nr. 0407/MED-299 (IG135-2020): REV.0	<b>COMPOCEL AL FR</b>  Aluminium honeycomb panel
BUILDING COUNTERTOPS	UNI EN 13501-1	<b>A2 s1 d0</b>  <b>COMPOCEL AL FR</b>  <b>NON- COMBUSTIBLE</b>  Class Certification Nr. 322406/8949/CPR, 369385/13094/CPR  <b>COMPOCEL AL FLOOR, ALURIS, ALUMAN</b>  Class Certification Nr. 370429	<b>COMPOCEL AL FR, COMPOCEL AL FLOOR, ALURIS, ALUMAN</b>  Aluminium honeycomb panel  <b>A2 – NON- COMBUSTIBLE</b> <b>s1</b> – Smoke emission absent <b>d0</b> – no dripping
BUILDING VENTILATED FACADES	UNI EN 13501-1	<b>A2 s1 d0</b>  <b>NON- COMBUSTIBLE</b>  Class Certification Nr. 361288	<b>COMPOCEL AL FR</b>  Tested: only 20mm <b>A2 – Incombustible</b> <b>s1</b> – Smoke emission absent <b>d0</b> – no dripping
BUILDING FLOORS	UNI EN 13501-1	<b>A2fl s1 d0</b>  <b>NON- COMBUSTIBLE</b>  <b>COMPOCEL AL FR</b>  Class Certification Nr. 322406/8949/CPR, 369385/13094/CPR  <b>COMPOCEL AL FLOOR ALURIS, ALUMAN</b>  Class Certification Nr. 370493	<b>COMPOCEL AL FR, FLOOR, ALURIS, ALUMAN</b>  Aluminium honeycomb panel  <b>A2 – Incombustible</b> <b>s1</b> – Smoke emission absent <b>d0</b> – No dripping
BUILDING	UNI EN 13501-1	<b>B s1 d0</b>  <b>LOW FLAME SPREAD</b>  Class Certification Nr. IN-02513/2017-E	<b>COMPOCEL AL FR</b>  Aluminium honeycomb panel  <b>B – LOW FLAME SPREAD</b> <b>s1</b> – Smoke emission absent <b>d0</b> – no dripping
BUILDING FLOORS	UNI EN 13501-1	<b>Bfl s1 d0</b>  <b>LOW FLAME SPREAD</b>  <b>COMPOCEL AL FR</b>  Class Certification Nr. 354617  <b>COMPOCEL AL FLOOR, ALURIS, ALUMAN</b>  Class certification Nr. 368596	<b>COMPOCEL AL FR, FLOOR, ALURIS, ALUMAN</b>  Aluminium honeycomb panel  <b>Bfl – LOW FLAME SPREAD</b> <b>s1</b> – Smoke emission absent <b>d0</b> – no dripping
BUILDING	NF P92-501	<b>M1</b>  Class certification Nr. N°RA20-0298, CSTB	<b>NOT FLAMABLE</b>
RAILWAY VEHICLES	UNI EN 45545-2	<b>HL3 (HAZARD LEVEL)</b>  Class certification Nr. 347927, 353207, 347921, 353209	<b>COMPOCEL AL FR</b>  Aluminium honeycomb panel Meets requirements for applications: <b>R2</b> Suspended ceilings, countertop <b>R1</b> Partitions <b>R10</b> Floors