

Aluminium honeycomb core

Aluminium honeycombs and panels made with it offer the advantage of lightness, compression and shear resistance, fire and corrosion resistance and the possibility to be recycled.

Aluminium honeycomb is used in a number of applications, for example, in public transport industry, in nautical sector, for tool machines, for serigraphy and building industry, ecc...

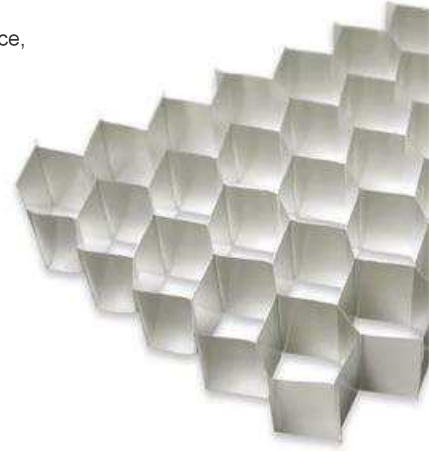
Aluminium honeycomb is used as core material for sandwich panels: floors, roofs, doors, partitions, facades, working surfaces for automatic machines and for all products which require an optimal stiffness-to-weight-ratio.

Aluminium honeycomb as panels' core is the winner because of:

- lightness
- stiffness
- fire resistance
- compression, shear and corrosion resistance
- flatness

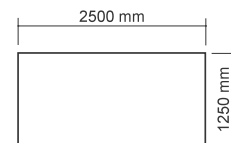
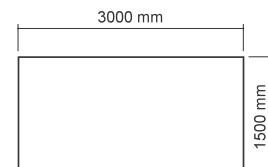
Aluminium honeycomb without skins can be used as deflector for laminar flow-ventilation, and as crash-absorber for absorb kinetic energy.

Regarding the aluminium honeycomb the client can choose a thickness from 3 until 300 mm, a cell size from 6 until 19 mm and a density from 20kg/m³ until 80kg/m³ (the density depends on the foil's thickness and on the cell size).



Honeycomb core's properties					
Type	ALUMINIUM ALLOY 3000				
Thickness mm	from 3 to 300 standard tolerance $\pm 0,10$ mm tolerance on request $\pm 0,05$ mm				
Effective temperature range °C	from - 50 to + 175				
Cell size mm	$\varnothing 3,2$	$\varnothing 6$	$\varnothing 9$	$\varnothing 12$	$\varnothing 19$
Density kg/m ³	96 ÷ 128	54 ÷ 80	40 ÷ 53	29 ÷ 40	20 ÷ 27
Compressive stabilized MPa	6,5 ÷ 9,7	3,2 ÷ 5,0	1,6 ÷ 3,0	0,8 ÷ 1,6	0,3 ÷ 0,6

Standard dimensions (other dimensions available on request)



Alloy 3003 aluminium honeycomb is sold **perforated** or **non perforated** (the micro perforations allowing air flow between cells, for use under vacuum or decompression) in three forms: **unexpanded block non perforated, unexpanded slices, expanded sheets.**

Polypropylene honeycomb core

Polypropylene honeycomb is mainly used as core in composite panels, as reinforcement and as means to lighten structures. The honeycomb is closed on its both sides with a thermo-welded tissue. In case of bending the strain is transferred by the honeycomb core. That is why the strain is shared out in shear and compression over laminates.

Polypropylene honeycombs can be thermo-welded or glued to a number of TNT or technical fabrics which make the production of composites panels easier.

Polypropylene honeycomb is also used to support filters for **corrosive gas emissions**.

In fact, also in such an aggressive environment, you can count on quality and chemical-resistance of this product.

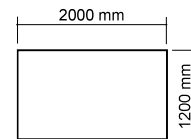
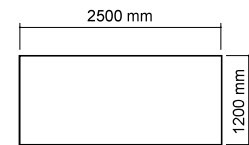


Honeycomb core's properties	
Type	PP 8-80
Cell size mm	8.0
Colour	white
Density kg/m ³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strenght MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0.10%
Water absorption 24H	0.10%
Flammability	normal
Thickness mm	from 5 to 90, max 450 (tolerance ± 0.35)
Thickness mm: PP 8-80 T30 *	from 8 to 65 (tolerance ± 0.35)
Thickness mm: PP 8-80 T30F75 **	from 6 to 65

* T30: thermo-welded tissue for glueing.

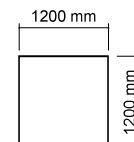
** T30F75: thermo-welded tissue for wet lay-up.

Standard dimensions (other dimensions available on request)



POLYPROPYLENE FLEX honeycomb core's properties	
Thickness mm	from 6 to 20 (tolerance ± 0.35)
Square cut mm	30x30

Standard dimensions (other dimensions available on request)



Other dimensions, core heights and types up on request.
Minimum order quantity for each type: 1 pallet.



Polypropylene flex

Polycarbonate honeycomb core

Polycarbonate honeycomb finds major applications in deflectors for laminar-flow ventilation in commercial refrigerations, sterilized rooms, wind tunnels and climatic chambers.

Honeycomb-deflectors attain a significant efficiency of the flow, eliminate turbulences, reduce the transport of impurity and humidity, as well as noise and energy consumption.

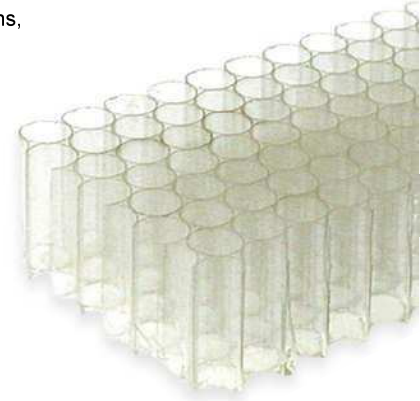
Honeycomb has the following characteristics:

- easy to apply
- shapes according to customer's specifications
- waterproof / washable
- suitable for food contact and non-toxic
- 100% recyclable

All major commercial refrigeration companies world-wide use this kind of honeycomb. The versatility of the honeycomb is also demonstrated by the way it focuses light.

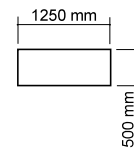
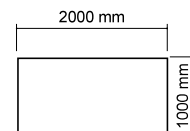
Polycarbonate honeycomb with a density of 200kg/m³ is also an **excellent crash-absorber**. Polycarbonate with a less density is used for light and transpiring structures.

CEL is honeycomb has set new standards for the absorption of energy. Uniform collapsing of the cell walls absorbs kinetic energy at a constant stress level until the honeycomb is compressed through 78% of the initial volume. We supply special densities, according to the level of energy absorption required by the customer.



Honeycomb core's properties		
Type	PC 3.5 - 90	PC 6 - 70
Cell size mm	3.5	6.0
Cell's layout	regularly	
Colour	grey • white • trasparente	
Density kg/m ³	90	70
Compressive strength MPa DIN 53421	2.3	1.0
Compressive modulus MPa DIN 53421	21.0	17.0
Shear strength MPa DIN 53294	1.0	0.6
Shear modulus MPa DIN 53294	21.0	21.0
Effective temperature range °C	from - 40 to + 110	
Thermal conductivity W/mK 0°	0.061	
Thermal conductivity W/mK 30°	0.073	
Sound reduction factor 50 - 4.000 Hz	22 dB	
Water absorption max	0.35%	
Water absorption 24H	0.10%	
Flammability	normal	
Thickness mm	from 3 to 300 (tolerance ± 0.15)	

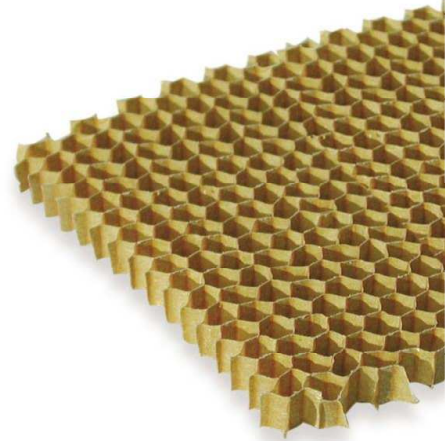
Standard dimensions (other dimensions available on request)



Nomex honeycomb

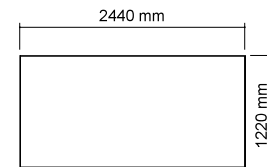
Nomex honeycomb core is an extremely lightweight, high strength and non metallic product manufactured with aramid fiber paper impregnated with a heat resistant phenolic resin. This core material offers the unique combination of properties necessary for superior electrical insulation. Aramid paper is used in boat hulls, auto racing bodies and military shelters. Furthermore it's very appreciated by the aeronautical, train and shipyard industry.

The client can choose between industrial and aeronautical grade.



Honeycomb core's properties					
Designation			Compression Strength	L-Shear	W-Shear
	Cell size mm	Density kg/m ³	N/mm ²	N/mm ²	N/mm ²
Hexagonal	3.2	48	1.90	1.16	0.62
Hexagonal	3.2	64	3.10	1.48	0.82
Hexagonal	3.2	80	4.70	1.95	1.05
Hexagonal	3.2	96	6.60	2.45	1.42
Hexagonal	3.2	128	11.30	2.95	1.78
Hexagonal	3.2	144	13.20	3.05	1.90
Hexagonal	4.0	29	0.60	0.45	0.26
Hexagonal	4.0	80	5.10	1.90	0.98
Hexagonal	4.8	32	0.90	0.58	0.36
Hexagonal	4.8	48	2.60	0.98	0.56
Hexagonal	4.8	64	3.40	1.70	0.92
Hexagonal	4.8	80	6.00	1.95	1.10
Hexagonal	4.8	96	7.30	2.26	1.32
Hexagonal	6.4	24	0.54	0.34	0.18
Hexagonal	6.4	32	0.80	0.54	0.30
Hexagonal	6.4	48	2.05	1.00	0.56
Hexagonal	6.4	64	3.40	1.54	0.79
Hexagonal	9.6	24	0.52	0.32	0.16
Hexagonal	9.6	32	0.68	0.56	0.29
Hexagonal	9.6	48	1.80	1.15	0.66
Over expanded	4.8	29	0.60	0.31	0.32
Over expanded	4.8	48	2.30	0.60	0.72
Over expanded	4.8	64	3.80	0.72	0.90
Over expanded	4.8	72	4.00	0.75	0.92
Over expanded	4.8	80	5.30	0.88	1.17
Over expanded	4.8	96	6.70	0.92	1.28
Over expanded	6.4	48	2.30	0.60	0.72
Over expanded	6.4	64	3.20	0.72	0.90

Standard dimensions
 (other dimensions available on request)



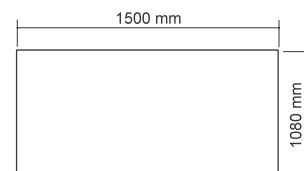
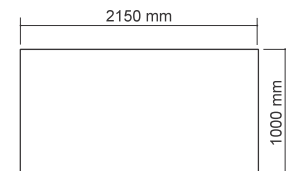
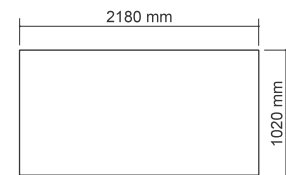
PVC Foam

PVC foam offers an optimal stiffness-to-weight-ratio, compression and water resistance and thermo insulation. It is compatible with polyester resin, vinilister resin and epoxy. PVC foam is easy to work: it can be rolled, cut etc. Furthermore it does not emit dangerous gas during the handling.



PVC foam core's properties						
Type	MC 40	MC 55	MC 75	MC 90	MC 130	MC 200
Density kg/m ³	40	55	80	100	130	200
Minimal temperature °C	-200					
Specific heat	0,26					
Fire resting property	Self-extinguishing					
Compressive strength MPa DIN 53421 kg/cm ²	4	8.5	16	20	30	50
Tension strength MPa DIN 53571 kg/cm ²	8.5	13	20	24	40	60
Bending Modules MPa DIN 53423 kg/cm ²	6	14	21	25	30	35
Thickness mm	different kind of thicknesses available – starting from 3					
Dimension mm	depends on the density					

Standard dimension (type MC 75)
 (other dimensions available on request)



SOUNDSTOP

Panel's composition

SKINS OF ALUMINIUM
Varnished with RAL colors on request

CORE
Core of low density viscoelastic polyethylene resin

SKINS OF ALUMINIUM
unfinished



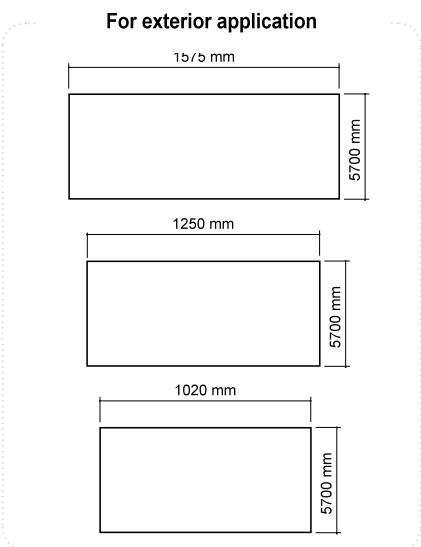
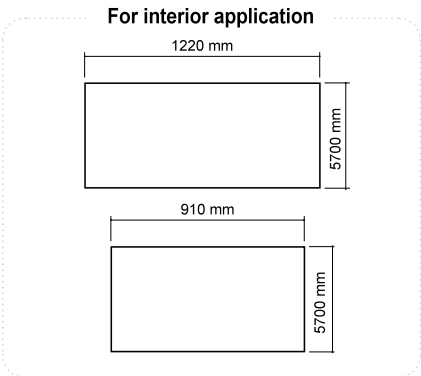
- On request:
- Other thicknesses available
 - Skins of inox
 - Mould, cut & fold

EXAMPLES

Panel's weight			
<ul style="list-style-type: none"> • Thickness starting from 2mm • Thickness' tolerance + - 0,5 • Dimension's tolerance + - 30mm 			
Total thickness mm		FOR INTERIOR APPLICATION	FOR EXTERIOR APPLICATION
		2 - 3	4 - 5 - 6
Weight kg/m ²		Thickness 3 mm - 4,55 kg/m ²	Thickness 4 - 5,48 kg/m ² Thickness 6 - 7,34 kg/m ²
Dimension	Width mm	910 - 1220	1020 - 1250 - 1575
	Length mm	on request max. 5700mm	

Core's properties			
Type	3 mm	4 mm	6 mm
Density kg/m ³	1,52	1,37	1,22
Thermal expansion (-20 ~ 60°C)	22	24	25
Thermal conductivity C°	0,15 ~ 0,19		
Temperature for thermal deformation	113		
Acoustic isolation dB	24	26	27
Tensile Strength MPa	45,8	48	38,2
Yield Strength MPa	43,4	44,2	30,4
Extension rate in %	12	14	17
Transverse modulus	3,2	4,2	2,8
Impact resistance (maximum loading)	1320	1670	2120
Adhesive strength kg/m kg/m ²	85		
Peel strength	18		
Adhesive strength kg/m ²	1150		
Test for Toxic Gases caused by fire	good		

Standard dimensions (other dimensions available on request)



Panels SOUNDSTOP

ALU - ALU

Panel's composition

SKIN OF ALUMINIUM

Alloy: 5754 H 32, 99.5 H 24

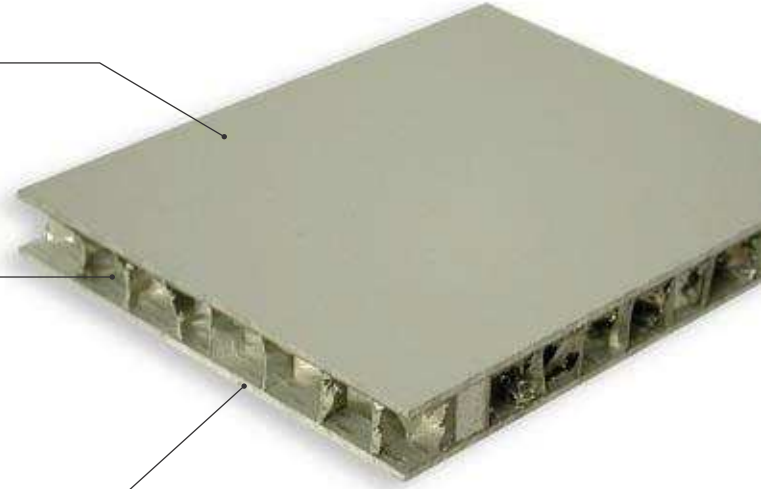
Thickness mm: 1,0 - 1,2 - 1,5 - 2,0 - 2,5 - 3,0

CORE

Aluminium honeycomb (Alloy 3000) with hexagonal cells

Diameter: Ø 6, Ø 9, Ø 12, Ø 19

Density: from 20 to 80 Kg/m³



- On request:
- other thicknesses,
 - alloys and RAL-colours,
 - ESD dissipant painting,
 - stainless steel skins.

Panel's weight (with honeycomb core ALU Ø 9 mm, density 40 kg/m³)

- Available with cores ALU Ø 6 - 12 - 19 mm
- Thickness starting from 6 mm
- Thickness' tolerance ± 0,5 mm
- Dimension's tolerance ± 30 mm

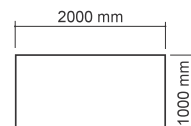
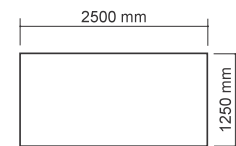
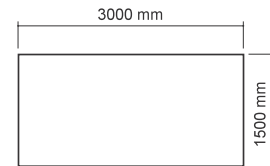
Total thickness mm	10	15	20	25	30
SKINS' thickness mm	1,0 + 1,0				
CORE'S thickness mm	8	13	18	23	28
Weight kg/m ²	6,1	6,3	6,5	6,7	6,9

Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000			
Effective temperature range °C	from - 50 to + 175			
Cell size mm	Ø 6	Ø 9	Ø 12	Ø 19
Density kg/m ³	54 ÷ 80	40 ÷ 53	29 ÷ 40	20 ÷ 27
Compressive stabilized MPa	3,2 ÷ 5,0	1,6 ÷ 3,0	0,8 ÷ 1,6	0,3 ÷ 0,6

Standard dimensions

(other dimensions available on request)



Aluminium honeycomb

ALU - PP

Panel's composition

SKINS OF ALUMINIUM

Alloy: 5754 H 32, 99.5 H 24

Thickness mm: 1,0 - 1,2 - 1,5 - 2,0 - 2,5 - 3,0

CORE

Polypropylene honeycomb type PP 8.0 T30

Density: 80 Kg/m³



On request: • other thicknesses,
• alloys and RAL-colours available.

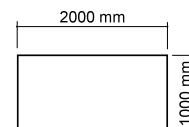
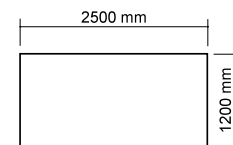
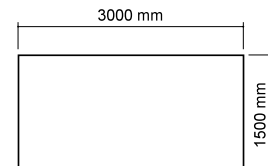
Panel's weight

- Honeycomb core PP 8.0 T30
- Thickness starting from 10 mm
- Thickness' tolerance $\pm 0,5$ mm
- Dimension's tolerance ± 30 mm

Total thickness mm	10	15	20	25	30	40
SKINS' thickness mm	1,0 + 1,0					
CORE'S thickness mm	8	13	18	23	28	38
Weight kg/m ²	6,5	6,9	7,3	7,8	8,1	8,5

Standard dimensions

(other dimensions available on request)



Polypropylene honeycomb

Honeycomb core's properties	
Type	PP 8.0 T30
Cell size mm	8.0
Colour	white
Density kg/m ³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strength MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°C	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0,10%
Water absorption 24H	0,10%
Flammability	normal

Note:

- T30: thermo-welded (30 gr/m²) tissue for glueing.

ALU - STY

Panel's composition

SKINS OF ALUMINIUM

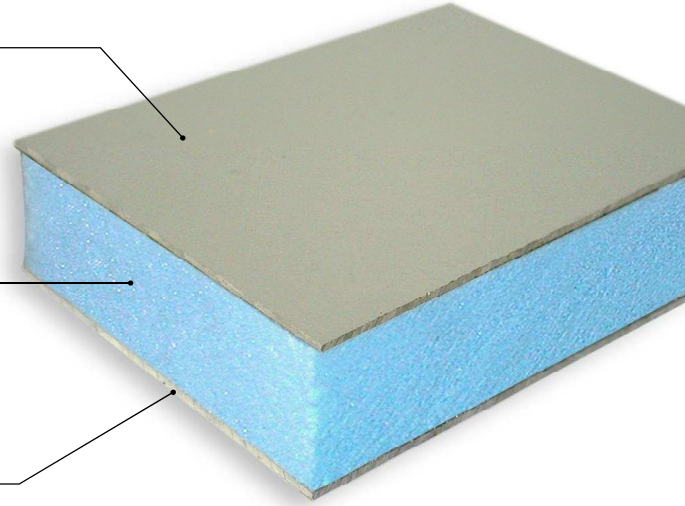
Alloy: 5754 H 32, 99.5 H 24

Thickness mm: 1,0 - 1,2 - 1,5 - 2,0 - 2,5 - 3,0

CORE

extruded Polystyrene foam

Density: 30 - 33 - 40 Kg/m³



On request: • other thicknesses,
• alloys and RAL-colours.

Panel's weight

- Polystyrene foam core STY, density 33 kg/m³
- Thickness starting from 15 mm.
- Thickness' tolerance $\pm 0,5$ mm
- Dimension's tolerance ± 30 mm

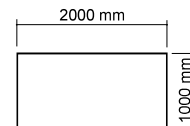
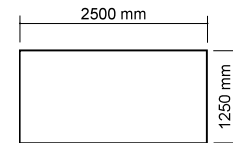
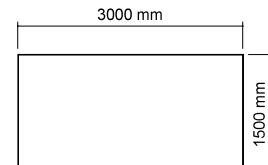
Total thickness mm	15	20	25	30	40
SKINS' thickness mm	1,0 + 1,0				
CORE'S thickness mm	13	18	23	28	38
Weight kg/m ²	6,2	6,3	6,6	6,8	7,1

Foam core's properties

Density	40
Temperature °C	- 50 / + 75
Fire resisting property	Class B1

Standard dimensions

(other dimensions available on request)



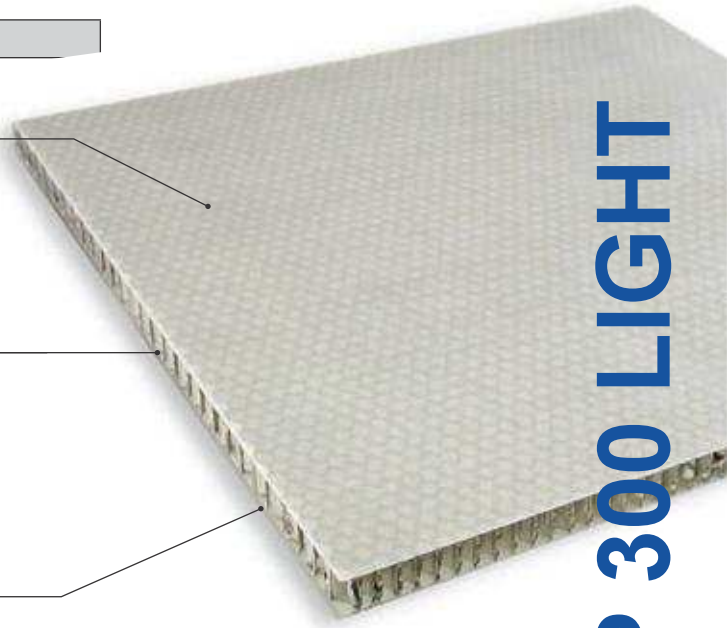
Polystyrene foam

ALUSTEP 300 - LIGHT

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC
 impregnated with epoxy resin
Thickness mm: 0,15

CORE
 Aluminium honeycomb (Alloy 3000)
 with hexagonal cells
Diameter: Ø 6
Density: 56Kg/m³ and 80Kg/m³



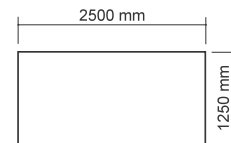
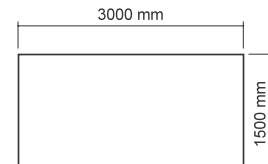
On request: Version with double glassfiber fabric Alustep 600 - LIGHT

Panel's weight (with honeycomb core ALU Ø 6 mm, density 56 kg/m³)

- Available with cores ALU Ø6 - 83kg/m³
- Thickness starting from 6mm
- Thickness' tolerance ± 0,5mm
- Dimension's tolerance ± 30mm

Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,15 + 0,15				
CORE'S thickness mm	9,7	14,7	19,7	24,7	29,7
Weight kg/m ²	1,13	1,36	1,64	1,92	2,20

Standard dimensions (other dimensions available on request)



Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000
Effective temperature range °C	from - 50 to + 175
Cell size mm	Ø 6
Density kg/m ³	54 ÷ 80
Compressive stabilized MPa	3,2 ÷ 5,0



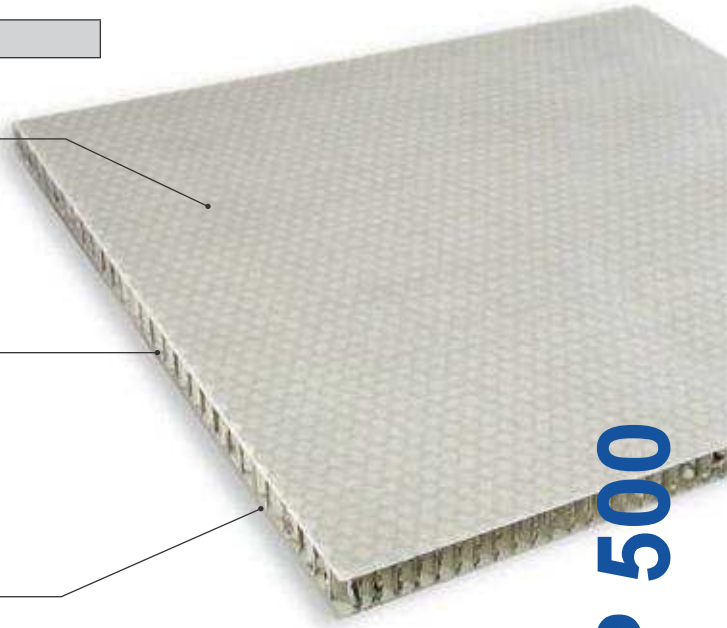
Aluminium honeycomb

ALUSTEP 500

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC
 impregnated with epoxy resin
Thickness mm: 0,5

CORE
 Aluminium honeycomb (Alloy 3000)
 with hexagonal cells
Diameter: Ø 6, Ø 9, Ø 12, Ø 19
Density: from 20 to 80kg/m³



Panel's weight (with honeycomb core ALU Ø 6 mm, density 56 kg/m³)

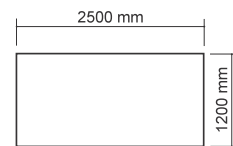
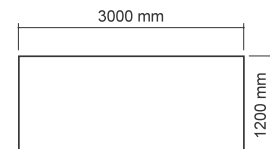
- Available with cores ALU Ø 9 - Ø 12 - Ø 19
- Thickness starting from 6mm
- Thickness' tolerance ± 0,5mm
- Dimension's tolerance ± 30mm

Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,5 + 0,5				
CORE'S thickness mm	9	14	19	24	29
Weight kg/m ²	4,1	4,4	4,7	4,9	5,2

Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000			
Effective temperature range °C	from - 50 to + 175			
Cell size mm	Ø 6	Ø 9	Ø 12	Ø 19
Density kg/m ³	54 ÷ 80	40 ÷ 53	29 ÷ 40	20 ÷ 27
Compressive stabilized MPa	3,2 ÷ 5,0	1,6 ÷ 3,0	0,8 ÷ 1,6	0,3 ÷ 0,6

Standard dimensions (other dimensions available on request)



Aluminium honeycomb

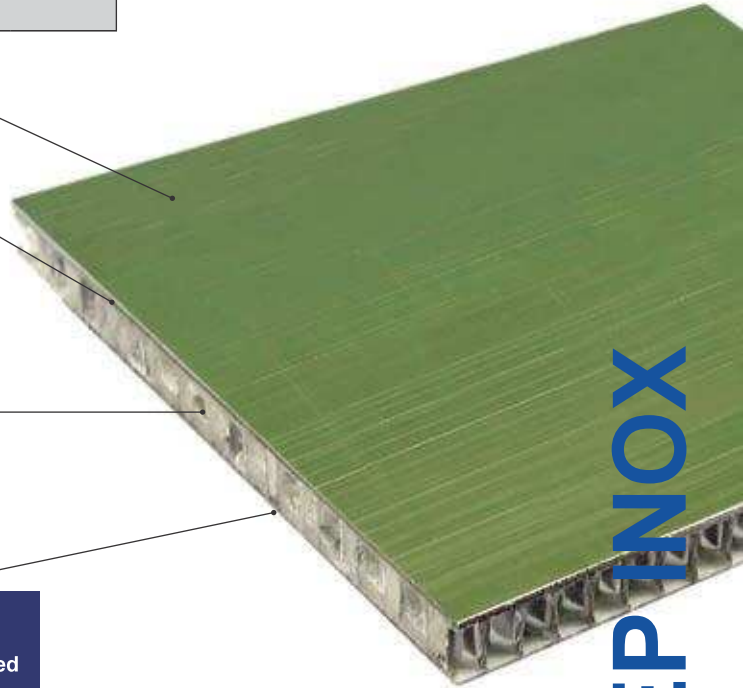
ALUSTEP INOX

Panel's composition

STAINLESS STEEL - SATIN FINISH INC

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC impregnated with epoxy resin
 Thickness mm: 0,15

CORE
 Aluminium honeycomb (Alloy 3000) with hexagonal cells
Diameter: Ø 6
Density: 56Kg/m³ and 80Kg/m³



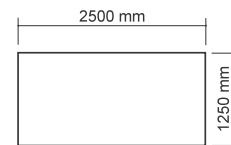
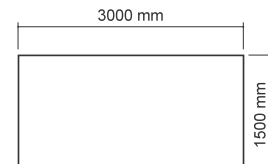
On request: - Different types of decorative natural stainless steel
 - Different types of stainless steel with decorative colors
 - Different types of stainless steel mirror polished / sand-blasted
 - Different types of stainless steel satin finish / satin inc.

Alustep 300 light panel's weight (with honeycomb core ALU Ø 6 mm, density 56 kg/m³)

- Available with cores ALU Ø6 - 83kg/m³
- Thickness starting from 6mm
- Thickness' tolerance ± 0,5mm
- Dimension's tolerance ± 30mm

Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,15 + 0,15				
CORE'S thickness mm	9,7	14,7	19,7	24,7	29,7
Weight kg/m ²	1,13	1,36	1,64	1,92	2,20

Standard dimensions (other dimensions available on request)



Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000
Effective temperature range °C	from - 50 to + 175
Cell size mm	Ø 6
Density kg/m ³	54 ÷ 80
Compressive stabilized MPa	3,2 ÷ 5,0

SATIN FINISH INC

article number code	Thickness from/up to mm	standard dimension	
		Width mm	Length mm
GREEN SAT. INC. BRONZE SAT. INC. BLUE SAT. INC. GOLD SAT. INC.	0,7 / 3,0	1000 x	2000
			3000
		1250 x	2250
2500			
RED SAT. INC. (on request) BLACK (on request)	0,8	1250 x	2050
	1,2	1250 x	2340



Sandwich Panel ALUSTEP INOX

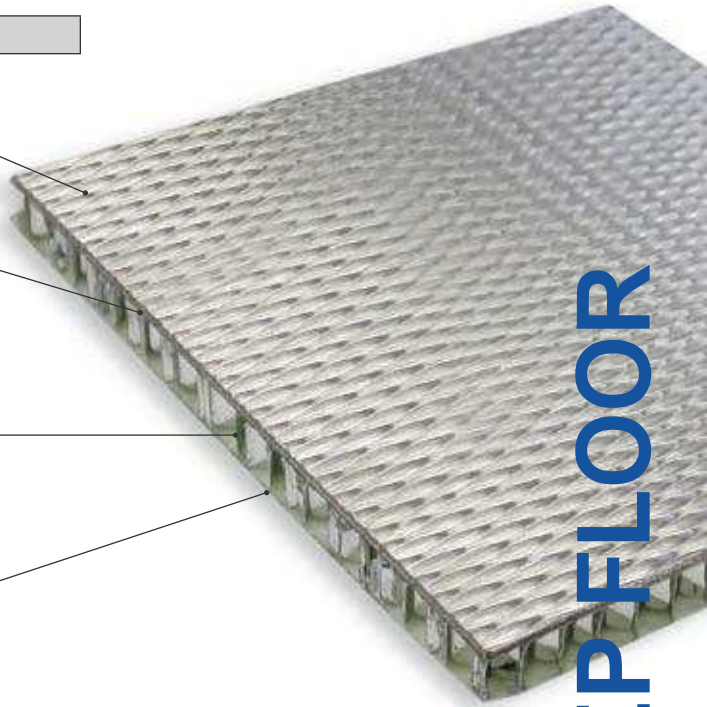
ALUSTEP FLOOR

Panel's composition

DECORATIVE NATURAL STAINLESS STEEL - SATIN FINISH 5WL

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC impregnated with epoxy resin
Thickness mm: 0,15

CORE
 Aluminium honeycomb (Alloy 3000) with hexagonal cells
Diameter: Ø 6
Density: 56Kg/m³ and 80Kg/m³



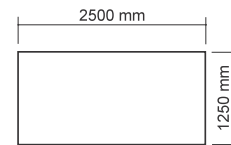
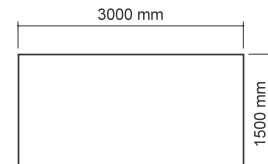
On request: - Different types of decorative natural stainless steel
 - Different types of stainless steel with decorative colors

Alustep 300 light panel's weight (with honeycomb core ALU Ø 6 mm, density 56 kg/m ³)					
<ul style="list-style-type: none"> • Available with cores ALU Ø6 - 83kg/m³ • Thickness starting from 6mm • Thickness' tolerance ± 0,5mm • Dimension's tolerance ± 30mm 					
Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,15 + 0,15				
CORE'S thickness mm	9,7	14,7	19,7	24,7	29,7
Weight kg/m²	1,13	1,36	1,64	1,92	2,20

Honeycomb core's properties	
Type	ALUMINIUM ALLOY 3000
Effective temperature range °C	from - 50 to + 175
Cell size mm	Ø 6
Density kg/m³	54 ÷ 80
Compressive stabilized MPa	3,2 ÷ 5,0

Decorative natural stainless steel - satin finish 5WL			
article number code	Thickness from/up to mm	standard dimension	
		Width mm	Length mm
5WL SAT	0,6 / 1,5	1000 x	2000
			3000
			4000
		1250 x	2050
			2150
			2250
		2500	

Standard dimensions
(other dimensions available on request)

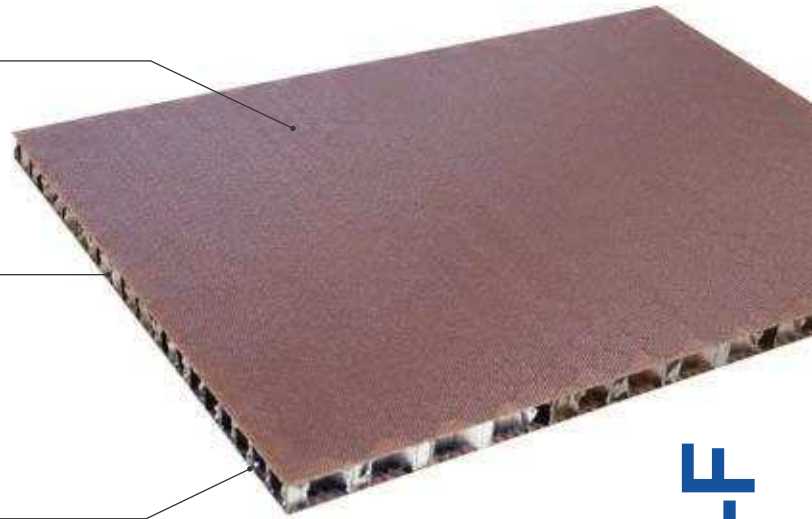


ALUSTEP-F

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC
 impregnated with phenolic resin
Thickness mm: 0,3

CORE
 Aluminium honeycomb (Alloy 3000)
 with hexagonal cells
Diameter: Ø 6, Ø 9, Ø 12, Ø 19
Density: from 20 to 80 Kg/m³

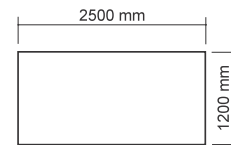
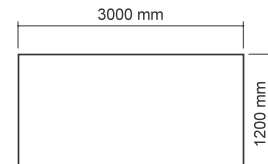


Panel's weight (with honeycomb core ALU Ø 9 mm, density 40 kg/m³)

- Available with cores ALU Ø 6 - 12 - 19 mm
- Thickness starting from 6 mm
- Thickness' tolerance ± 0,5 mm
- Dimension's tolerance ± 30 mm

Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,3 + 0,3				
CORE'S thickness mm	9,4	14,4	19,4	24,4	29,4
Weight kg/m ²	1,6	1,8	2	2,2	2,4

Standard dimensions (other dimensions available on request)



Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000			
Effective temperature range °C	from - 50 to + 175			
Cell size mm	Ø 6	Ø 9	Ø 12	Ø 19
Density kg/m ³	54 ÷ 80	40 ÷ 53	29 ÷ 40	20 ÷ 27
Compressive stabilized MPa	3,2 ÷ 5,0	1,6 ÷ 3,0	0,8 ÷ 1,6	0,3 ÷ 0,6



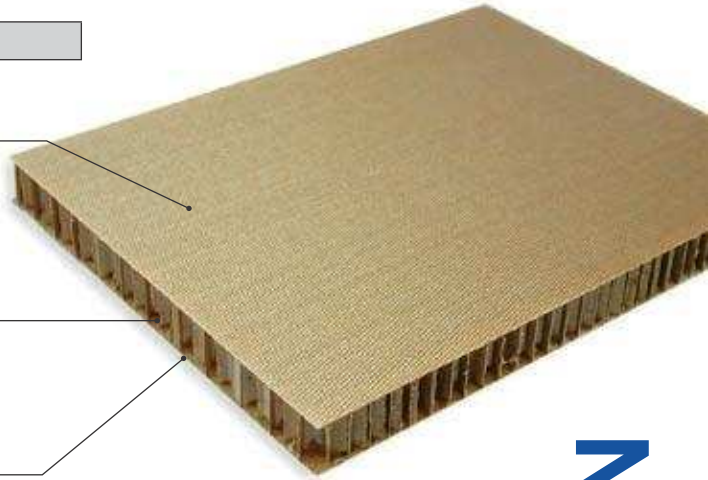
Aluminium honeycomb

ALUSTEP - FN

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC impregnated with phenolic resin
 Thickness mm: 0,3

CORE
 Nomex honeycomb core
 Diameter: from Ø 3,2 to Ø 9,6
 Density: from 24 to 144 Kg/m³

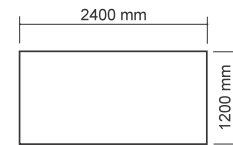


Panel's weight (with nomex honeycomb core Ø3,2 - 48kg/m³)

- Available with cores alveolare Ø 4,0 - 9,6 mm
- Thickness' tolerance ± 0,5 mm
- Thickness starting from 3 mm
- Dimension's tolerance ± 30 mm

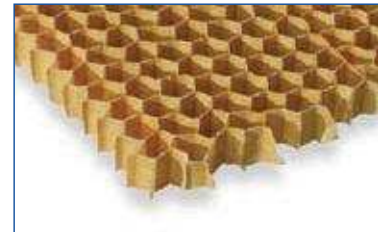
Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,3 + 0,3				
CORE'S thickness mm	9,4	14,4	19,4	24,4	29,4
Weight kg/m ²	2	2,24	2,48	2,72	2,96

Standard dimensions (other dimensions available on request)



Honeycomb core's properties

Designation			Compression Strength	L-Shear	W-Shear
	Cell size mm	Density kg/m ³	N/mm ²	N/mm ²	N/mm ²
Hexagonal	3.2	48	1.90	1.16	0.62
Hexagonal	3.2	64	3.10	1.48	0.82
Hexagonal	3.2	80	4.70	1.95	1.05
Hexagonal	3.2	96	6.60	2.45	1.42
Hexagonal	3.2	128	11.30	2.95	1.78
Hexagonal	3.2	144	13.20	3.05	1.90
Hexagonal	4.0	29	0.60	0.45	0.26
Hexagonal	4.0	80	5.10	1.90	0.98
Hexagonal	4.8	32	0.90	0.58	0.36
Hexagonal	4.8	48	2.60	0.98	0.56
Hexagonal	4.8	64	3.40	1.70	0.92
Hexagonal	4.8	80	6.00	1.95	1.10
Hexagonal	4.8	96	7.30	2.26	1.32
Hexagonal	6.4	24	0.54	0.34	0.18
Hexagonal	6.4	32	0.80	0.54	0.30
Hexagonal	6.4	48	2.05	1.00	0.56
Hexagonal	6.4	64	3.40	1.54	0.79
Hexagonal	9.6	24	0.52	0.32	0.16
Hexagonal	9.6	32	0.68	0.56	0.29
Hexagonal	9.6	48	1.80	1.15	0.66



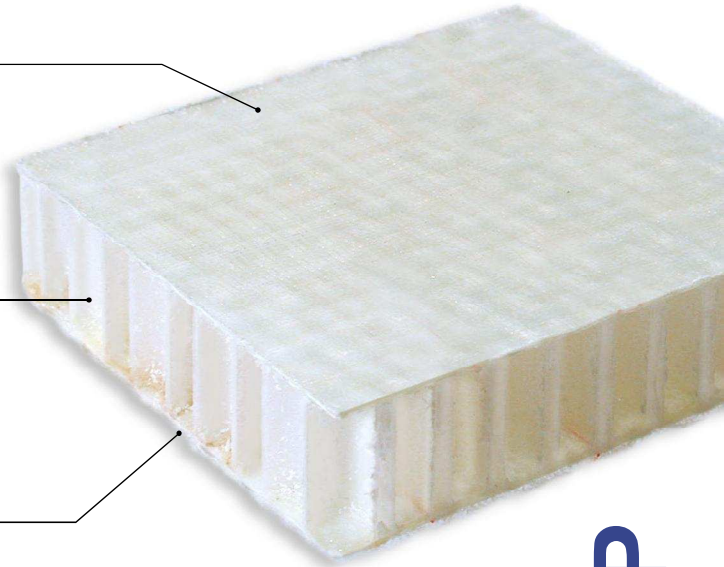
Nomex honeycomb

POLISTEP

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC
 impregnated with epoxy resin
 Thickness mm: 0,5

CORE
 Polypropylene honeycomb type PP 8.0 T30
 Density: 80 Kg/m³

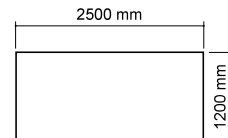


On request:

- other weight and type of fabric,
- peel-ply for stone-gluing.

Panel's weight					
<ul style="list-style-type: none"> • Honeycomb core PP 8.0 T30 • Thickness starting from 8 mm • Thickness' tolerance $\pm 0,5$ mm • Dimension's tolerance ± 30 mm 					
Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,5 + 0,5				
CORE'S thickness mm	9	14	19	24	29
Weight kg/m²	4,34	4,74	5,14	5,54	5,94

Standard dimensions
 (other dimensions available on request)



Honeycomb core's properties	
Type	PP 8.0 T30
Cell size mm	8.0
Colour	white
Density kg/m³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strength MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°C	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0,10%
Water absorption 24H	0,10%
Flammability	normal



Polypropylene honeycomb

Note:

- T30: thermo-welded (30 gr/m²) tissue for glueing.

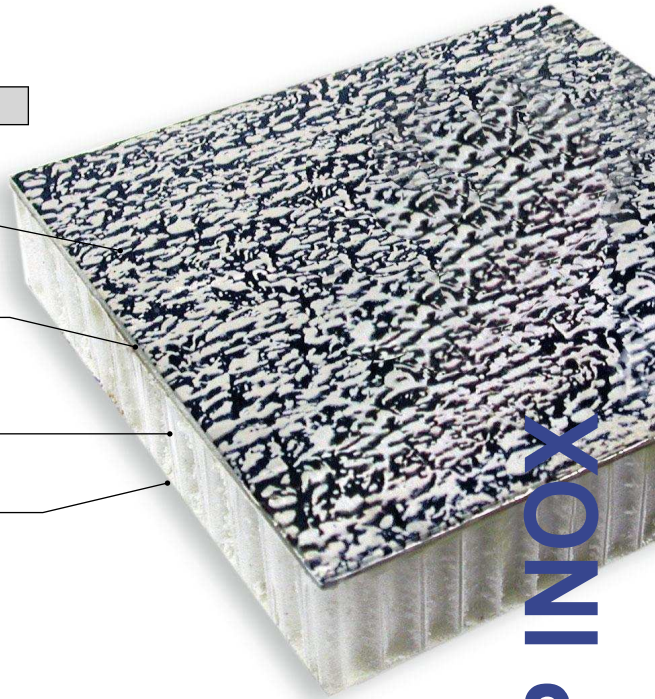
POLISTEP INOX

Panel's composition

DECORATIVE STAINLESS STEEL -
ICE GREY

SKINS IN BIDIRECTIONAL GLASSFIBER
FABRIC impregnated with epoxy resin
Thickness mm: 0,5

CORE
Polypropylene honeycomb type PP 8.0 T30
Density: 80 Kg/m³



On request:

- Different types of decorative natural stainless steel
- Different types of stainless steel with decorative colors
- Different types of stainless steel mirror polished / sand-blasted
- Different types of stainless steel satin finish / satin inc.

Panel's weight

- Honeycomb core PP 8.0 T30
- Thickness starting from 8 mm
- Thickness tolerance $\pm 0,5$ mm
- Dimension tolerance ± 30 mm

Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,5 + 0,5				
CORE thickness mm	9	14	19	24	29
Weight kg/m ²	4,34	4,74	5,14	5,54	5,94

Honeycomb core's properties

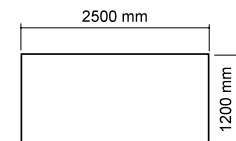
Type	PP 8.0 T30
Cell size mm	8.0
Colour	white
Density kg/m ³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strength MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°C	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0,10%
Water absorption 24H	0,10%
Flammability	normal

Decorative stainless steel - Ice grey

article number code	Thickness from/up to mm	standard dimension	
		Width mm	Length mm
Ice grey	0,8	1250 x	1250 x
	1,0	1250 x	2500
	1,2	1250 x	2340
	1,5	1250 x	2500

Standard dimensions

(other dimensions available on request)



Note:

- T30: thermo-welded (30 gr/m²) tissue for glueing.



Polypropylene honeycomb

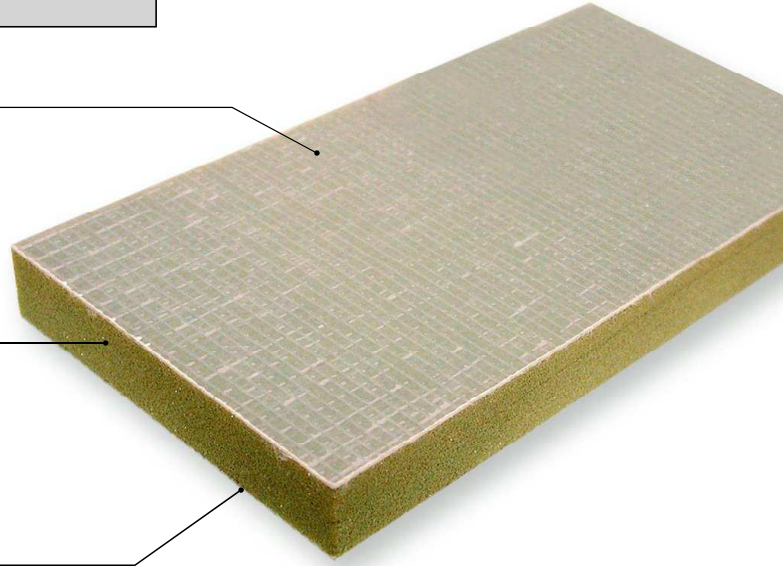


PVC-STEP

Panel's composition

SKINS IN BIDIRECTIONAL GLASSFIBER FABRIC
 impregnated with epoxy resin
 Thickness mm: 0,5

CORE
 PVC foam
 Density: from 33 to 200 kg/m³



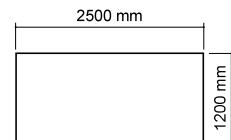
- On request:
- Other weight and type of fabric
 - Peel ply for stone-gluing

EXAMPLES

Panel's weight (with 55 kg/m ³)					
<ul style="list-style-type: none"> • Thickness starting from 4mm • Thickness' tolerance +/- 0,5mm • Dimension's tolerance +/- 30mm 					
Total thickness mm	10	15	20	25	30
Skins' thickness mm	0,5 + 0,5				
Core's thickness mm	3	14	19	24	29
Weight kg/m²	4,1	4,4	4,7	4,9	5,2

PVC foam core's properties							
Type	MC 30	MC 40	MC 55	MC 75	MC 90	MC 130	MC 200
Density kg/m³	33	40	55	80	100	130	200
Minimal temperature C°	-200						
Specific heat	0,26						
Fire resisting property	Selfextinguishing M2						
Compressive strength MPa DIN 53421 kg/cm²	3	4	8.5	16	20	30	50
Tension strength MPa DIN 53571 kg/cm²	6	8.5	13	20	24	40	60
Bending Moduls MPa DIN 53423 kg/cm²	4.5	6	14	21	25	30	35
Thickness mm	different kind of thicknesses available – starting from 3						
Dimension mm	1020 x 2180 - 2150 x 1000 - 1080 x 1500						

Standard dimensions
 (other dimensions available on request)



PVC foam

HPL - ALU

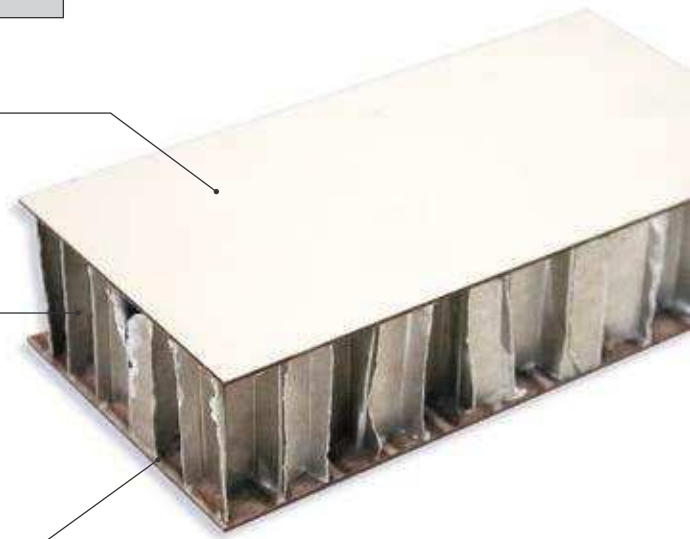
Panel's composition

SKINS OF HIGH PRESSURE LAMINATE

Thickness: from 0,9 to 4 mm
RAL colours
Laminate: F1 - M1 available

CORE

Aluminium honeycomb (Alloy 3000)
 with hexagonal cells
Diameter: Ø 6, Ø 9, Ø 12, Ø 19
Density: from 20 to 80 Kg/m³



On request: • high pressure laminate raw finishing HPLG.
 • the dimension 2250x1000 mm is available only for high pressure laminate RAL colours

Panel's weight (with honeycomb core ALU Ø 9 mm, density 40 kg/m³)

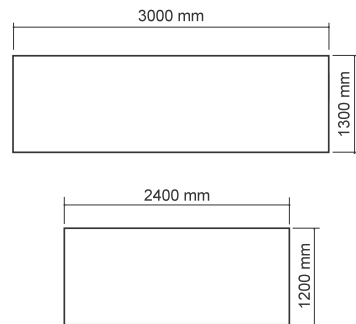
- Available with cores ALU Ø 6 - 9 - 12 mm
- Thickness starting from 6 mm
- Thickness' tolerance ± 0,5 mm
- Dimension's tolerance ± 30 mm

Total thickness mm	10	15	20	25	30
SKINS' thickness mm	0,9 + 0,9				
CORE'S thickness mm	8	13	18	23	28
Weight kg/m²	3,1	3,3	3,5	3,7	3,9

Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000			
Effective temperature range °C	from - 50 to + 175			
Cell size mm	Ø 6	Ø 9	Ø 12	Ø 19
Density kg/m³	54 ÷ 80	40 ÷ 53	29 ÷ 40	20 ÷ 27
Compressive stabilized MPa	3,2 ÷ 5,0	1,6 ÷ 3,0	0,8 ÷ 1,6	0,3 ÷ 0,6

Standard dimensions (other dimensions available on request)



Aluminium honeycomb

HPL - PP

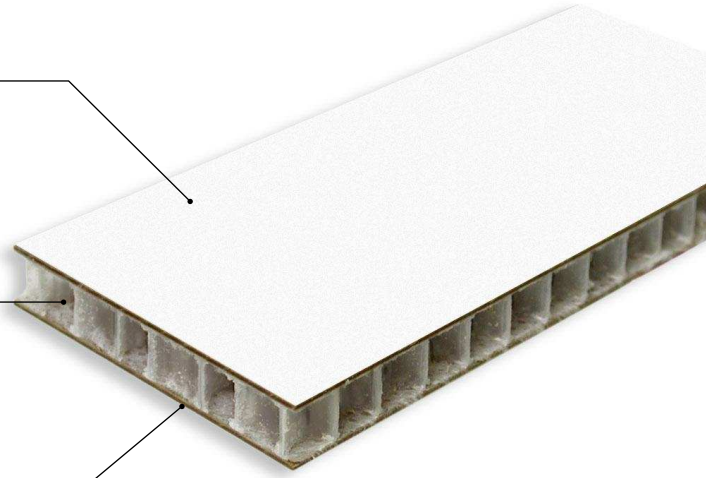
Panel's composition

SKINS OF HIGH PRESSURE LAMINATE

Thickness: from 0,9 to 4 mm
 RAL colours
 Laminate: F1 - M1 available

CORE

Polypropylene honeycomb
 type PP 8.0 T30
 Density: 80 Kg/m³



On request:

- High pressure laminate raw finishing HPLG.
- The dimension 2250x1000 mm is available only for high pressure laminate RAL colours.

Panel's weight

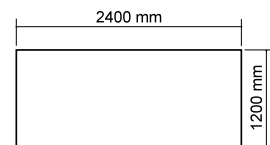
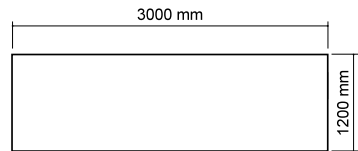
- Honeycomb core PP 8.0 T30
- Thickness starting from 10 mm
- Thickness' tolerance $\pm 0,5$ mm
- Dimension's tolerance ± 30 mm

Total thickness mm	10	15	20	25	30	40
SKINS' thickness mm	0,9 + 0,9					
CORE'S thickness mm	8	13	18	23	28	38
Weight kg/m²	3,5	3,9	4,3	4,7	5,1	5,5

Honeycomb core's properties

Type	PP 8.0 T30
Cell size mm	8.0
Colour	white
Density kg/m ³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strength MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°C	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0,10%
Water absorption 24H	0,10%
Flammability	normal

Standard dimensions (other dimensions available on request)



Polypropylene honeycomb

Note:

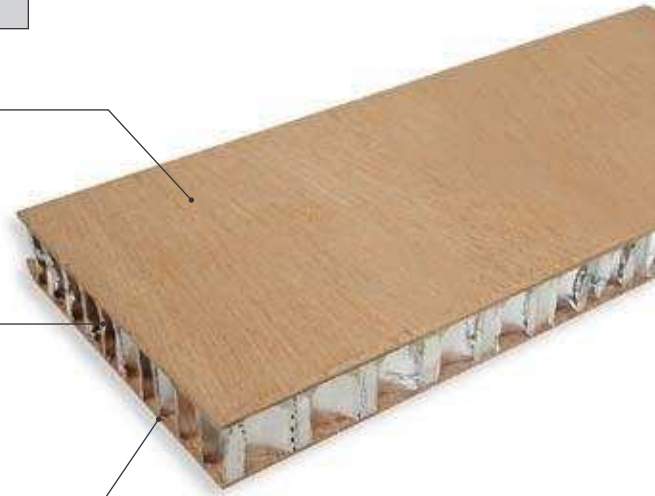
- T30: thermo-welded (30 gr/m²) tissue for gluing.

OKU - ALU

Panel's composition

SKINS OF MARINE PLYWOOD
 quality Okoumè
Thickness: from 1,5 to 8 mm

CORE
 Aluminium honeycomb (Alloy 3000)
 hexagonal cells
Diameter: Ø 6, Ø 9, Ø 12, Ø 19
Density: from 20 to 80 Kg/m³



On request: • other qualities of plywood.

EXAMPLES

Panel's weight (with Honeycomb core ALU Ø 9 mm, density 40 kg/m³) - example

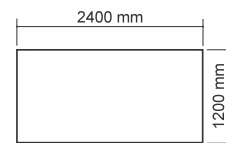
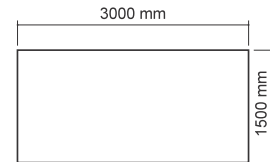
- Available with cores ALU Ø 6 - 9 - 12 mm
- Thickness starting from 14 mm
- Thickness tolerance ± 0,5 mm
- Dimension tolerance ± 30 mm

Total thickness mm	14	16	18	20
SKIN thickness mm	3+3	3+3	4+4	4+4
CORE thickness mm	8	10	10	12
Weight kg/m ²	3,38	3,5	4,4	4,42

Honeycomb core's properties

Type	ALUMINIUM ALLOY 3000			
Effective temperature range °C	from - 50 to + 175			
Cell size mm	Ø 6	Ø 9	Ø 12	Ø 19
Density kg/m ³	54 ÷ 80	40 ÷ 53	29 ÷ 40	20 ÷ 27
Compressive stabilized MPa	3,2 ÷ 5,0	1,6 ÷ 3,0	0,8 ÷ 1,6	0,3 ÷ 0,6

Standard dimensions (other dimensions available on request)



Aluminium honeycomb

OKU - PP

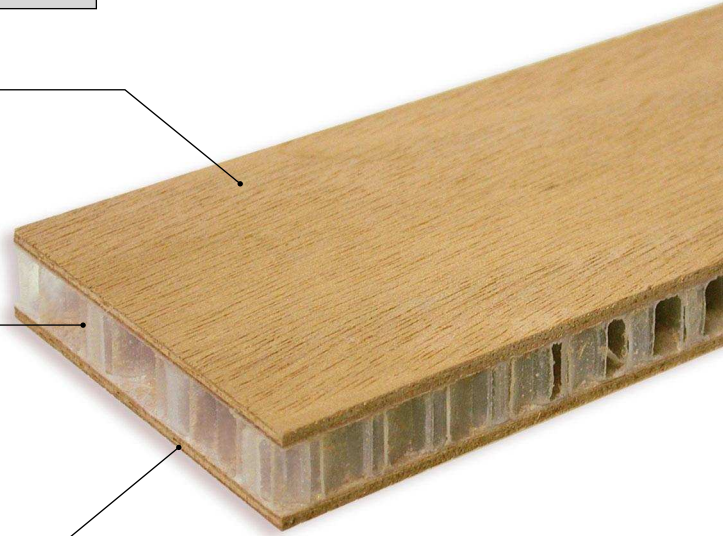
Panel's composition

SKINS OF MARINE PLYWOOD

quality Okoumè
 Thickness: from 1,5 to 8 mm

CORE

Polypropylene honeycomb
 type PP 8.0 T30
 Density: 80 Kg/m³



On request: • other kind of plywood.

EXAMPLE

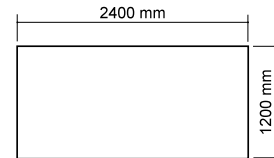
Panel's weight

- Honeycomb core PP 8.0 T30
- Thickness starting from 14 mm
- Thickness' tolerance $\pm 0,5$ mm
- Dimension's tolerance ± 30 mm

Total thickness mm	14	16	18	20
SKINS' thickness mm	3+3	3+3	4+4	4+4
CORE'S thickness mm	8	10	10	12
Weight kg/m ²	3,7	3,9	4,8	4,9

Standard dimensions

(other dimensions available on request)



Honeycomb core's properties

Type	PP 8.0 T30
Cell size mm	8.0
Colour	white
Density kg/m ³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strength MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°C	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0,10%
Water absorption 24H	0,10%
Flammability	normal



Polypropylene honeycombs

Note:

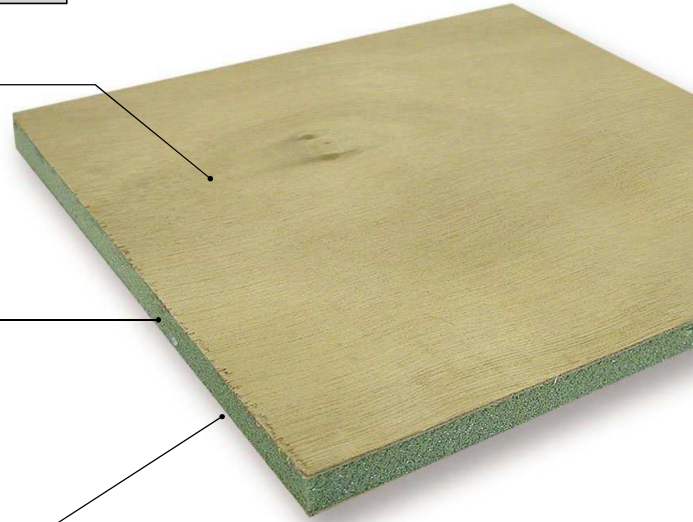
- T30: thermo-welded (30 gr/m²) tissue for glueing.

OKU - PVC

Panel's composition

SKINS OF MARINE PLYWOOD
 quality Okoumè
 Thickness: from 1,5 – 8mm

CORE
 PVC foam
 Density: from 33 to 200 kg/m³

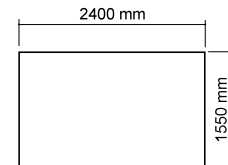
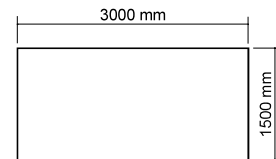


On request: • other qualities of plywood

EXAMPLES

Panel's weight (with PVC 55 kg/m ³)				
<ul style="list-style-type: none"> • Thickness starting from 6mm • Thickness' tolerance +/- 0,5mm • Dimension's tolerance +/- 30mm 				
Total thickness mm	14	16	18	20
Skins' thickness mm	3+3	3+3	4+4	4+4
Core's thickness mm	8	10	10	12
Weight kg/m²	3,5	3,65	4,55	4,6

Standard dimensions (other dimensions available on request)



PVC foam

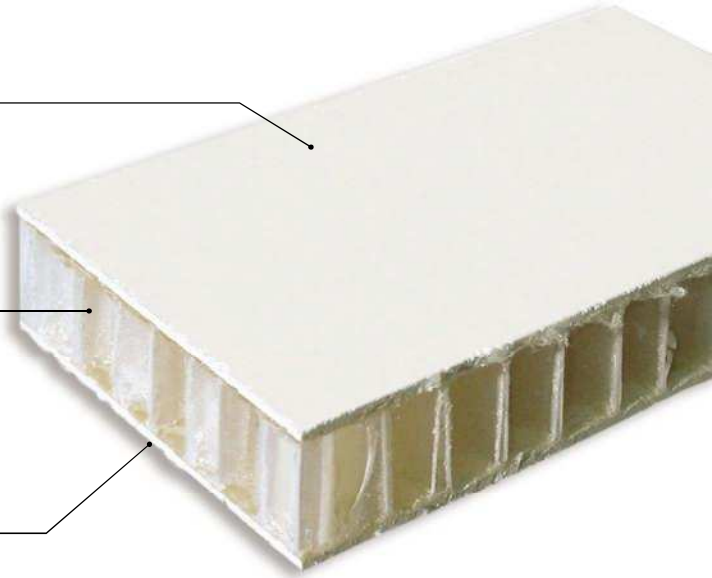
FOAM CORE'S PROPERTIES							
Type	MC 30	MC 40	MC 55	MC 75	MC 90	MC 130	MC 200
Density kg/m³	33	40	55	80	100	130	200
Minimal temperature C°	-200						
Specific heat	0,26						
Fire resisting property	Selfextinguishing M2						
Compressive strength MPa DIN 53421 kg/cm²	3	4	8,5	16	20	30	50
Tension strength MPa DIN 53571 kg/cm²	6	8,5	13	20	24	40	60
Bending Moduls MPa DIN 53423 kg/cm²	4,5	6	14	21	25	30	35
Thickness mm	different kind of thicknesses available – starting from 3						
Dimension mm	1020 x 2180 - 2150 x 1000 - 1080 x 1500						

VTR - PP

Panel's composition

SKINS OF POLYESTER GRP with white gel coat
 RAL 9010 and protection scratch resistant film on
 gel coat side
UV resistant
Approved for contact with food products

CORE
 Polypropylene honeycomb
 type PP 8.0 T30
Density: 80 Kg/m³



- On request:
- RAL colours,
 - certificate of approval for food application,
 - certificate of UV resistance.

Panel's weight

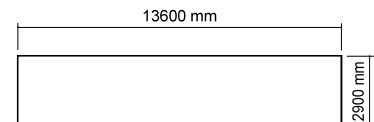
- Honeycomb core PP 8.0 T30
- Tolerances $\pm 0,5$ mm
- Thickness starting from 12 mm
- Thickness' tolerance $\pm 0,5$ mm
- Dimension's tolerance ± 30 mm

Total thickness mm	12	15	20	25	30	40
SKINS' thickness mm	1,5 + 1,5					
CORE'S thickness mm	9	12	17	22	27	37
Weight kg/m ²	5,8	6,1	6,5	6,9	7,3	8,1

Honeycomb core's properties

Type	PP 8.0 T30
Cell size mm	8.0
Colour	white
Density kg/m ³	80
Compressive strength MPa DIN 53421	2.0
Compressive modulus MPa DIN 53421	97
Shear strength MPa DIN 53294	0,55
Shear modulus MPa DIN 53294	12.8
Effective temperature range °C	from - 30 to + 80
Thermal conductivity W/mK 10°C	0,102
Sound reduction factor 50 - 4.000 Hz	22 dB
Water absorption max	0,10%
Water absorption 24H	0,10%
Flammability	normal

Standard dimensions (max) (other dimensions available on request)



Polypropylene honeycomb

Note:

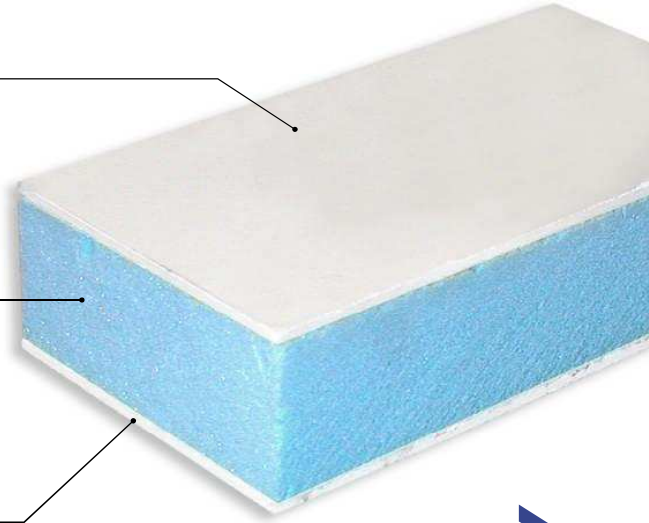
- T30: thermo-welded (30 gr/m²) tissue for glueing.

VTR - STY

Panel's composition

SKINS OF POLYESTER GRP with white gel coat
 RAL 9010 and protection scratch resistant film on
 gel coat side
UV resistant
Approved for contact with food products

CORE
 extruded Polystyrene foam
Density: 30 - 33 - 40 Kg/m³



- On request:
- RAL colours,
 - certificate of approval for food application,
 - certificate of UV resistance.

Panel's weight

- Polystyrene foam core, density 33 kg/m³
- Tolerances $\pm 0,5$ mm
- Thickness starting from 15 mm.
- Thickness' tolerance $\pm 0,5$ mm
- Dimension's tolerance ± 30 mm

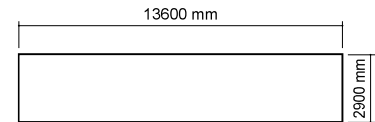
Total thickness mm	15	20	25	30	40
SKINS' thickness mm	1,5 + 1,5				
CORE'S thickness mm	12	17	22	27	37
Weight kg/m²	5,5	5,7	5,8	6,0	6,3

Foam core's properties

Density	40
Temperature °C	- 50 / + 75
Fire resisting property	Class B1

Standard dimensions (max)

(other dimensions available on request)



Polystyrene foam core