

Issue 2006



AIR-board® Panels

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AIR-board® Panels

The AIR-board® panels

Our unique bonding technology enables us to combine a rigid translucent honeycomb core with transparent thermoplastic top sheets resulting in a panel with exceptional optical features.

The 6 types of the AIR-board® series mainly differ in top sheet material and its structure, dimensions and colors. You will find all product details in this data sheet or online at www.design-composite.com.

Common properties

- innovative translucent optics
- excellent light transmission
- outstanding thermal insulation
- high stiffness
- light weight
- PC honeycomb core hardly flammable
- easy to handle and process
- compatible with standard profile systems
- flat applications only

AIR-board® PC

Lightweight construction with excellent stiffness by using high transparent 1 mm non UV-protected PC top sheets.

Special properties

- high impact resistance
- excellent bending strength
- low weight
- only for interior applications



AIR-board® UV PC

This panel combines unique optical features with the best thermal insulation.

Highly transparent UV-protected 2 mm PC top sheets and our 10 year's warranty enable a lasting exterior application.

Special properties

- excellent UV and weather resistance
- high impact and hail resistance
- panel size up to 7800 x 2020 x 150 mm
- easy to install



AIR-board® UV PC color

Exclusive sandwich panels by applying translucent and colored UV-protected 2 mm PC cover sheets.

Standard colors on stock:

- orange
- green
- light blue
- dark blue

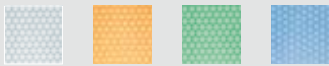
Special colors on request

Special properties

- excellent UV and weather resistance
- high bending strength
- good hail resistance
- both sides usable
- large sizes available



AIR-board® Panels



AIR-board® UV satin

Panels with unique light scattering by using translucent satined colored 3 mm UV-protected PMMA top sheets.

Standard colors on stock:

- opal
- orange
- glass green
- ice blue

Special colors on request

Special properties

- velvety scratch resistant top surface
- pleasant haptics
- no visible fingerprints
- both sides usable
- physiological unobjectionable



color AIR-board® UV PC

Modern color design resulting from combination of colored PC honeycomb cores with highly transparent 2 mm UV-protected PC top sheets.

Standard colors on stock:

- pink
- green
- yellow

Special colors on request

Special properties

- state-of-the-art color design
- good light transmission
- usable for interior and exterior
- excellent stiffness
- light weight
- easy to install



metal AIR-board® UV PC

Lightweight panel consisting of highly transparent 2 mm UV-protected PC top sheets and a hexagonal aluminium honeycomb core.

Standard cell dimension: 12,7 mm available from stock.

Cell diameter of 6,4 mm, 9,5 mm, 19,1 mm and 25,4 mm on request

Special properties

- unique metallic alu-look
- good light transmission
- excellent UV and weather resistance
- high stiffness
- easy to install

AIR-board® Panels

Dimensions, mechanical and physical data

	AIR-board® PC	AIR-board® UV PC	AIR-board® UV PC color	AIR-board® UV satin	color AIR-board® UV PC	metal AIR-board® UV PC
Standard						
Length (mm)	2550	3020	3020	3020	3020	3020
Width (mm)	1050	1220	1000	1000	1000	1220
Thickness (mm)	12/16/19	19	19	19	19	19
Tolerances of standard dimensions						
Length (mm)	+10/-10 **	+2/-2	+2/-2	+2/-2	+2/-2	+2/-2
Width (mm)	+5/-5 **	+1/-2	+1/-2	+1/-2	+1/-2	+1/-2
Thickness (mm)	+0/-1	+0/-1	+0/-1	+2/-2	+0/-1	+0/-1
Dimensions max.*						
Length (mm)	7800	7800	7800	3020	7800	7800
Width (mm)	1420	2020	2020	2020	2020	2020
Thickness (mm)	150	150	150	150	150	150
Fire class ¹ DIN 4102 ² ÖNORM B 3800 ³ BS 476 Part 7	B1 ¹ , 1Y ³	B1 ¹ , B1 ² , 1Y ³	B1 ¹ , B1 ²	B2 ¹	B1 ¹ , 1Y ³	B1 ² , 1Y ³
Coefficient of thermal expansion (1/K) acc. to DIN 53752-A	6,5x10 ⁻⁵	6,5x10 ⁻⁵	6,5x10 ⁻⁵	7x10 ⁻⁵	6,5x10 ⁻⁵	6,5x10 ⁻⁵
Service temperature (°C)	-30 up to +80	-30 up to +80	-30 up to +80	-30 up to +80	-30 up to +80	-30 up to +80

* with core joint—minimum order quantity per special dimension: 200 m²; panels with thickness > 80 mm edges untrimmed

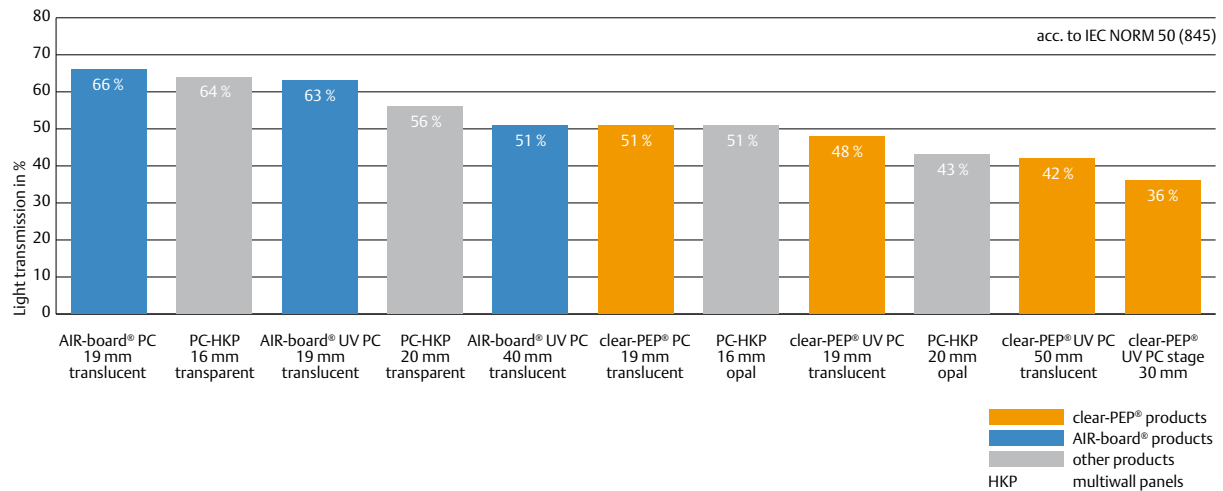
** untrimmed

	AIR-board® PC	AIR-board® UV PC	AIR-board® UV PC color	AIR-board® UV satin	color AIR-board® UV PC	metal AIR-board® UV PC
Weight per unit area (kg/m ²)	12 mm	3,1	–	–	–	–
	16 mm	3,4	5,6	5,6	7,8	5,6
	19 mm	3,6	5,9	5,9	8,0	5,9
	25 mm	4,0	6,3	6,3	8,4	6,3
	30 mm	4,4	6,6	6,6	8,8	6,6
	40 mm	5,1	7,3	7,3	9,5	7,3
	50 mm	5,8	8,0	8,0	10,2	8,0
	80 mm	7,9	10,1	10,1	12,3	10,1
	150 mm	12,8	15,0	15,0	17,2	15,0
Thermal insulation U-value (W/m ² K)	12 mm	2,9	–	–	–	–
	16 mm	2,5	2,6	2,6	2,7	2,6
	19 mm	2,2	2,3	2,3	2,4	2,3
	25 mm	1,8	1,9	1,9	2,0	1,9
	30 mm	1,6	1,6	1,6	1,7	1,6
	40 mm	1,3	1,3	1,3	1,3	1,3
	50 mm	1,0	1,1	1,1	1,1	1,1
	80 mm	0,7	0,7	0,7	0,7	0,7
	150 mm	0,4	0,4	0,4	0,4	0,4
Sound insulation Rw (dB)	12 mm	19	–	–	–	–
	16 mm	19	21	21	24	21
	19 mm	19	21	21	24	21
	25 mm	19	21	21	24	21
	30 mm	20	23	23	26	23
	40 mm	20	24	24	27	24
	50 mm	21	24	24	28	24
	80 mm	22	25	25	28	25
	150 mm	–	–	–	–	–

AIR-board® Panels

Light transmission

Comparison of PC multiwall sheets (in short PC-HKP) with AIR-board® PC and AIR-board® UV PC



AIR-board® UV PC 19

	TSET-value (total solar energy transmittance)			
sun elevation angle	0°	30°	45°	60°
	0,72	0,67	0,61	0,52

Mechanical data

	AIR-board® PC	AIR-board® UV PC	AIR-board® UV PC color	AIR-board® UV satin	color AIR-board® UV PC	metal AIR-board® UV PC
Modulus of elasticity (N/mm ²)	12 mm	1000	-	-	-	-
	16 mm	780	1300	1300	1510	1300
	19 mm	670	930	930	1250	930
	25 mm	510	890	890	900	890
	30 mm	430	750	750	760	750
	40 mm	330	560	560	570	560
	50 mm	260	450	450	460	450
	80 mm	120	260	260	270	260
150 mm	36	41	41	45	41	
Bending strenght (N/mm ²)	12 mm	7	-	-	-	-
	16 mm	6	5	5	5	5
	19 mm	5	5	5	5	5
	25 mm	4	4	4	3	4
	30 mm	3	3	3	3	3
	40 mm	2	2	2	2	2
	50 mm	2	2	2	2	2
	80 mm	1	1	1	1	1
150 mm	-	-	-	-	-	
Bending stiffness (Nm ² /m)	12 mm	144	-	-	-	-
	16 mm	266	444	444	515	444
	19 mm	383	532	532	714	532
	25 mm	664	1159	1159	1172	1159
	30 mm	968	1688	1688	1710	1688
	40 mm	1760	2987	2987	3040	2987
	50 mm	2708	4688	4688	4792	4688
	80 mm	5120	11093	11093	11520	11093
150 mm	10125	11531	11531	12656	11531	

* Values determined with the three-point bending test according to ISO 178: test sample width 80 mm / support distance 250 mm

AIR-board® Panels

Maximum support distances for fixing with profile systems or point fixings

AIR-board® UV PC, AIR-board® UV PC color, color AIR-board® UV PC, metal AIR-board® UV PC

	Load in N/m ²									
	600	800	1000	1200	1400	1600	1800	2000	2500	3000
16 mm	1620	1480	1390	1270	1230	–	–	–	–	–
19 mm	1810	1660	1570	1490	1420	1370	1320	–	–	–
25 mm	2000	1980	1860	1760	1680	1620	1560	1520	–	–
30 mm	2000	2000	2000	1970	1880	1820	1760	1710	–	–
40 mm	2000	2000	2000	2000	2000	2000	2000	2000	1910	–
50 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
80 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
150 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

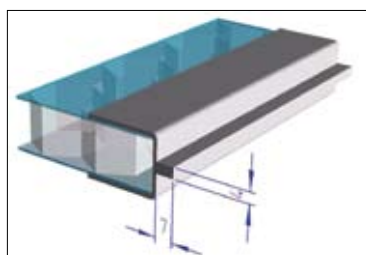
AIR-board® UV satin

	Load in N/m ²									
	600	800	1000	1200	1400	1600	1800	2000	2500	3000
19 mm	2000	1980	1860	1760	1680	1620	1570	–	–	–
25 mm	2000	2000	2000	2000	2000	2000	1870	1820	–	–
30 mm	2000	2000	2000	2000	2000	2000	2000	2000	–	–
40 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
50 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
80 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
150 mm	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000

- data in mm
- calculated values based on the assumption of fixing with profiles at two sides or with point fixings and considering a safety factor of 1,5
- load capacity values include the maximum force and the corresponding panel weight per m²
- in case of using a profile fixing system: minimum of 20 mm clamped on two sides
- 2000 mm – maximum support distance caused by available width of top layer

Installation systems for all AIR-board® panels

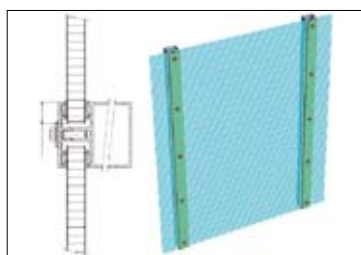
Concealed plug-in connection system



This installation system is specially designed for standard aluminium exhibition construction profiles.

Appropriate for interior applications

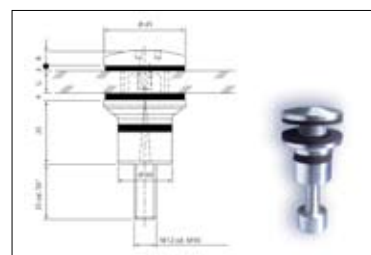
Visible clamping profile system



Example of a typical aluminium fixing system for exterior glazing – compatible with all AIR-board® panels.

Appropriate for exterior applications

Point fixing system



Our panels with sealed edge bending are suitable for curtain walls by using all available (spider) point fixed systems.

Appropriate for exterior applications

Important advices concerning exterior applications:

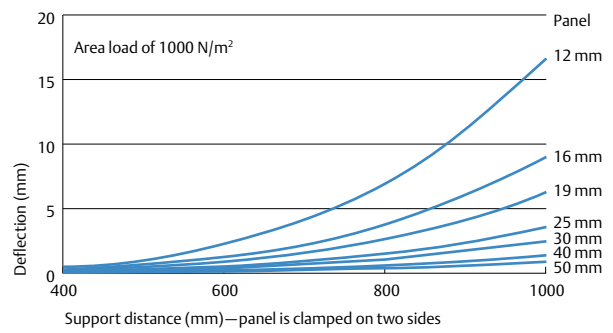
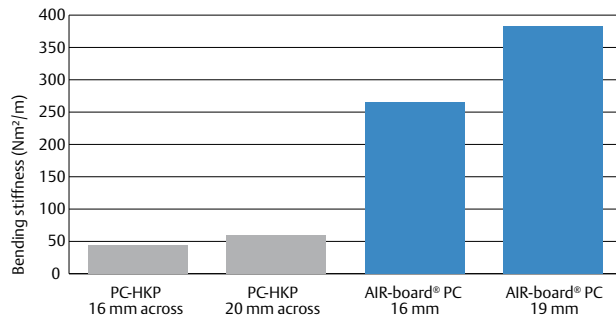
- panel edges have to be protected against penetrating moisture
- in case of horizontal installation: angle for installation $\geq 5^\circ$

All statements and data correspond with our current know-how and are subject to changes. Though a legally binding assurance of certain characteristics or suitability of any product type for a special purpose can not be derived. Any indication is only a non-binding recommendation. Subject to changes.

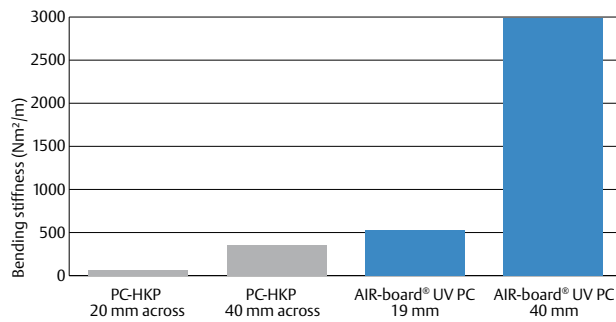
AIR-board® Panels

Details on load – deflection and bending stiffness

AIR-board® PC

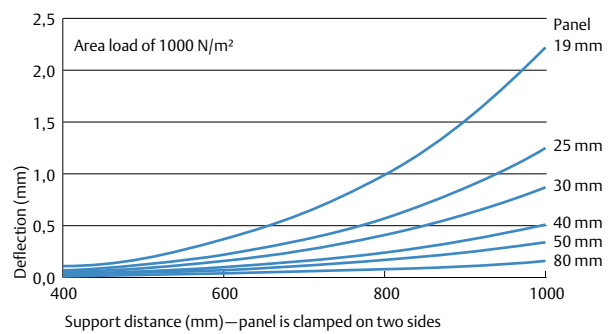
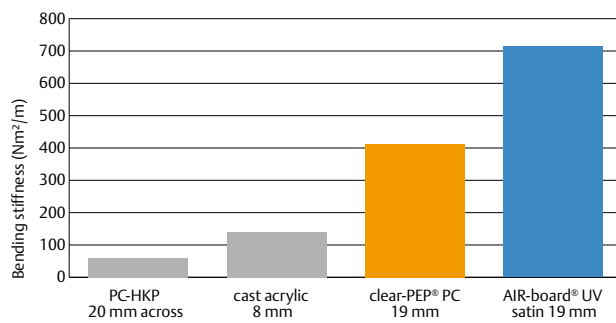


AIR-board® UV PC, AIR-board® UV PC color, color AIR-board® UV PC

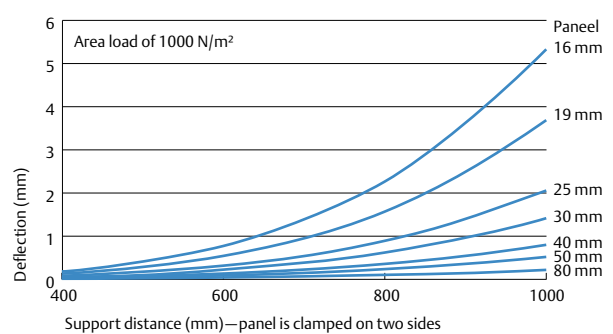
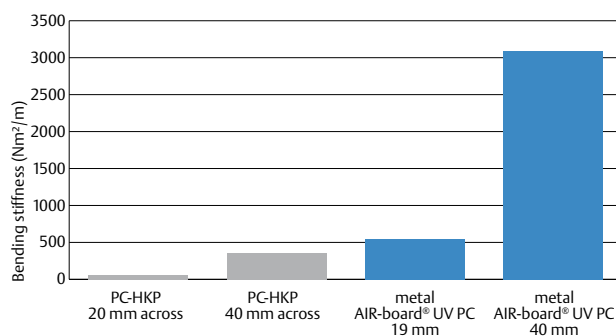


Please refer to the table on the left for further details on load capacity of AIR-board® UV PC.

AIR-board® UV satin



metal AIR-board® UV PC



Applications of AIR-board® panels

The range of applications for AIR-board® panels is almost unlimited and we are constantly developing new solutions together with our customers.

architecture
design elements
exhibition booths
shop design
stage setting
interior design

displays
illuminated advertising
dispenser
point-of-sales
shop window decorations
décor items

shelves
luminaries
illuminated ceilings
furniture
partitions
sliding doors

raised floors
balustrade glazing
facades
canopies
...and many more!



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