

The distinctive TRCore, for our clear-PEP<sup>®</sup> panels, is manufactured on our specially designed and patented core expander. The innovative characteristic of the open cell structure gives the lightweight panels not just a unique depth but also an extremely high rigidity.

The various types of panel in the clear-PEP<sup>®</sup> family differ in their facing sheet materials, cores, surface structures, physical properties, dimensions and colours.



## Product description

Facing sheet on both sides	Transparent polycarbonate
Core	PC - TRCore honeycomb

## Properties

- innovative translucent optics
- unique 3D effects and light scattering
- excellent UV stability and resistance to weathering
- low weight
- easy processing
- compatibility with common mounting systems
- excellent rigidity
- high impact strength

## Dimensions

Format	Length [mm]	Width [mm]	Thickness [mm]
Standard	3020	1220	19
Special dimensions <sup>1;2</sup>	max. 7800	max. 2450	max. 80

<sup>1</sup> all panels over 3020 x 1500mm with core joint

<sup>2</sup> on request – minimum order per special size: 200m<sup>2</sup>

Tolerances	Length [mm]	Width [mm]	Thickness [mm]
Cut to size	+2/-2	+1/-2	+0/-1

## General physical properties

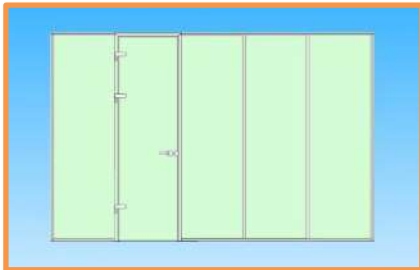
Coefficient of thermal expansion acc. to DIN 53752-A	Service temperature	Fire class			G-Value (total energy transmission value)			
		DIN 4102-1	BS 476 Part 7	EN 13501	Solar angle			
[1/K]	[°C]				0°	30°	45°	60°
$6,5 \times 10^{-5}$	-30 bis +80		1Y	B s1 d0	0,62	0,58	0,55	0,43

Thickness [mm]	Weight per unit area [kg/m <sup>2</sup> ]	Thermal insulation U-value [W/m <sup>2</sup> K]	Sound insulation Rw [dB]	Bending stiffness* [Nm <sup>2</sup> ]
16	8,5	2,8	24	478
19	8,5	2,7	24	629
30	9,7	2,4	25	1688
40	9,7	2,1	25	2933
60	10,9	1,7	26	3280
80	10,9	1,4	26	5973

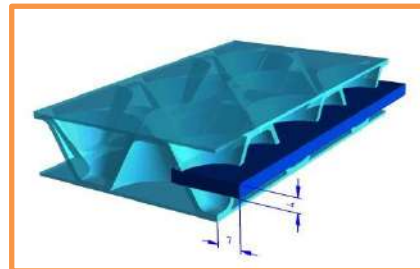
\* per m panel width

## Mounting systems for all clear-PEP<sup>®</sup> panels

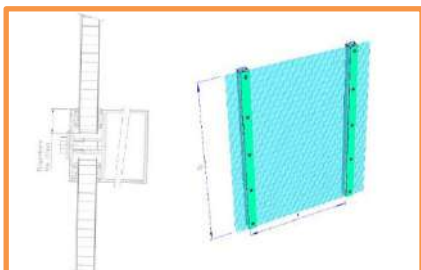
### Profile system for dividing walls



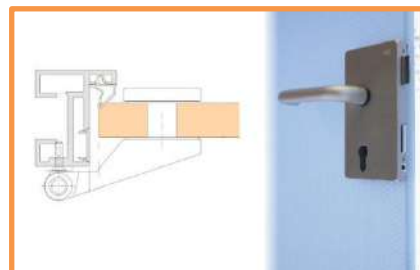
### Tongue and groove joint



### Profile system for glazing



### Furniture for hinged doors



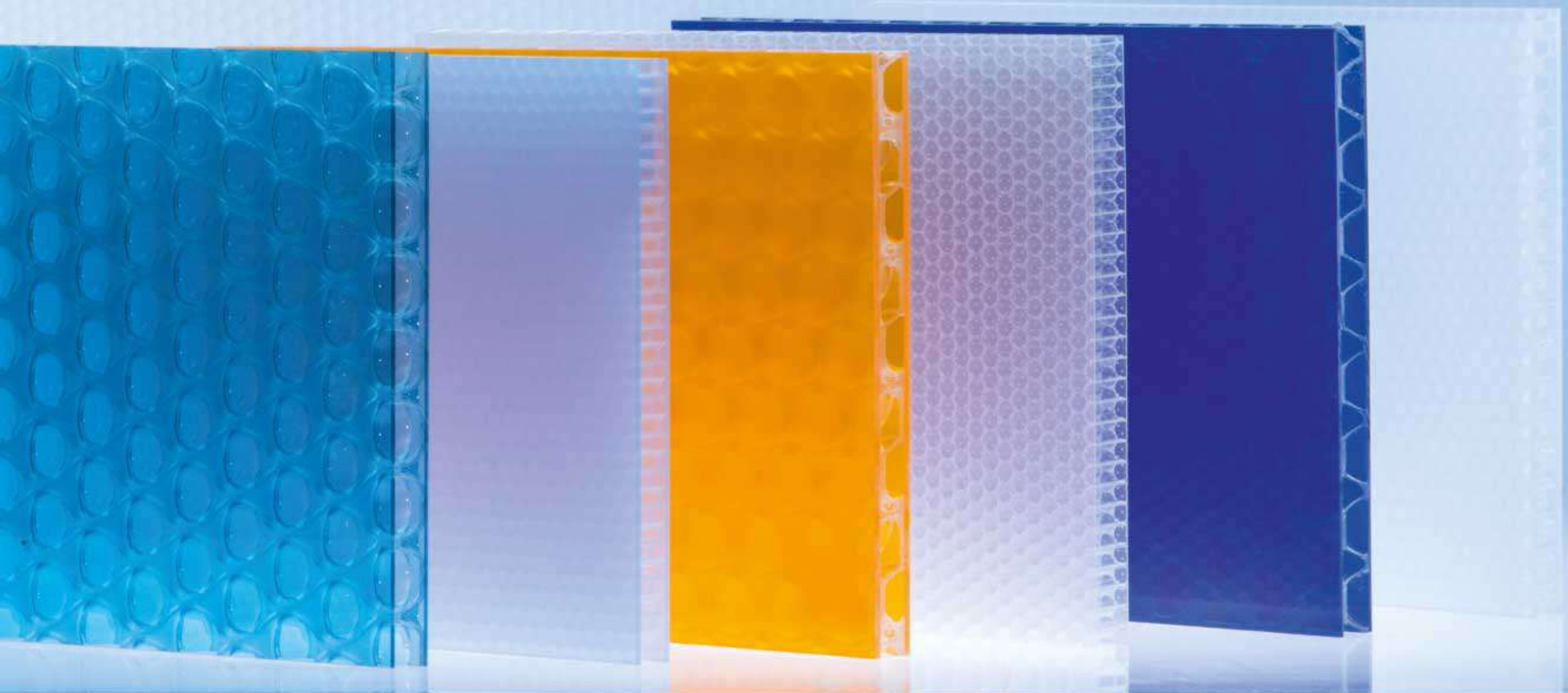
All these specifications are based on our most up-to-date information but are subject to changes at any time.  
A legally binding assurance of certain properties or the suitability of an individual type for a specific field of application cannot be assumed from these specifications.

**Stiffness of clear-PEP UV PC**

Product	Thickness	Deflection* caused by self-weight						Deflection* under a load of 1000 N/m <sup>2</sup> (20,88 psf)					
		Support Distance						Support Distance					
		600 mm (23,62")		1000 mm (39,37")		1200 mm (47,24")		600 mm (23,62")		1000 mm (39,37")		1200 mm (47,24")	
		Deflection in mm	Deflection in inch	Deflection in mm	Deflection in inch	Deflection in mm	Deflection in inch	Deflection in mm	Deflection in inch	Deflection in mm	Deflection in inch	Deflection in mm	Deflection in inch
clear-PEP UV PC	19 mm (1,14")	0,2	0,0082	1,4	0,0574	2,9	0,1189	2,4	0,0984	18,0	0,7377	37,0	1,5164
clear-PEP UV PC	25 mm (0,98")	0,1	0,0041	0,8	0,0328	1,6	0,0656	1,3	0,0533	9,7	0,3975	20,0	0,8197
clear-PEP UV PC	30 mm (1,18")	0,1	0,0041	0,6	0,0246	1,2	0,0492	0,9	0,0369	6,6	0,2705	13,5	0,5533
clear-PEP UV PC	35 mm (1,38")	0,1	0,0041	0,4	0,0164	0,8	0,0328	0,6	0,0246	4,7	0,1926	9,6	0,3934
clear-PEP UV PC	40 mm (1,47")	0,1	0,0041	0,3	0,0123	0,6	0,0246	0,5	0,0205	3,5	0,1434	7,2	0,2951

\*...supported at two edges





## design composite panels

Die jahrzehntelange Erfahrung in Klebtechnologie und Produktion von Wabenkernen aus hochwertigen Kunststoffen bildet die Basis für unsere Verbundpaneele. Die Kombination von höchster Qualität mit faszinierendem Design schafft vielfältige Möglichkeiten der innovativen Gestaltung. Prüfungen in unserem bestens ausgestatteten Labor und Ausgangskontrollen garantieren höchste Qualität unserer Produkte.

Besonders durch den Einsatz moderner Lichttechnologien kommen unsere transluzenten Wabenpaneele optimal zur Wirkung. Die **AIR-board®** und **clear-PEP®** Paneele haben unterschiedliche Kernstrukturen.

*Over 15 years of experience in adhesive technology and production of TRlcore cores from high quality plastic is the basis for our composite panels. The combination of the highest technical quality with stunning designs creates numerous opportunities for innovative concepts. Quality testing in our well-equipped laboratory through to final inspection guarantees the highest quality of our products.*

*The use of advanced lighting technology is particularly suited to our panels to enhance their optical effect.*

***AIR-board®** and **clear-PEP®** panels have different core structures.*


### Features

- Excellent UV and weather resistance
- Innovative translucent optics
- Excellent light transmission
- Provides full or partial visibility/privacy
- Light weight
- Easy processing
- Compatible with standard fixing systems
- Excellent bending stiffness
- Unique 3D-effects and light scattering
- High impact and abuse resistance
- Patented core geometries
- Good thermal and sound insulation properties



### Eigenschaften

- Ausgezeichnete UV Stabilität und Bewitterungsresistenz
- Innovative transluzente Optik
- Hohe Lichtdurchlässigkeit bei optimalem Sichtschutz
- Geringes Gewicht
- Leichte Verarbeitbarkeit
- Kompatibilität mit gängigen Befestigungs-Systemen
- Exzellente Steifigkeit
- Einzigartige 3D-Effekte und Lichtstreuung
- Hohe Schlagzähigkeit
- Patentierte Kerngeometrien
- Gute Wärme- und Schalldämmung



AIR-board®

Die Wabenkerne für unsere **AIR-board®** Paneele sind in verschiedenen Zellgrößen und Strukturen erhältlich. Erst durch das Verkleben der Kerne mit unterschiedlichsten Deckschichten entstehen Paneele mit einzigartigen Eigenschaften.

*The honeycomb cores in different sizes for our **AIR-board®** panels can be combined with various transparent or coloured facing sheets. The different layers and different core structures allow a variety of imaginative design options.*



clear-PEP®

Auf einer eigens entwickelten und patentierten Kernziehmaschine werden die unverkennbaren Wabenkerne für unsere **clear-PEP®** Paneele hergestellt. Die innovative Charakteristik der Lochstruktur verleiht dem Leichtbaupaneel nicht nur eine einzigartige Tiefenwirkung, sondern auch eine extrem hohe Steifigkeit.

*The distinctive TRCore, for our **clear-PEP®** panels, is manufactured on our specially designed and patented core expander. The innovative characteristic of the open structure gives the lightweight panels not just a unique depth but also an extremely high rigidity.*



AIR-board® & clear-PEP® panels

lagerware / stock items

## AIR-board®

PRODUKT / PRODUCT



**AIR-board® UV PC transparent**

3020 x 1220 x 19 mm

Art-Nr. ABU019-30201



**AIR-board® UV satin opal**

3020 x 1000 x 19 mm

Art-Nr. ABSA19-20011



**AIR-board® UV satin orange**

3020 x 1000 x 19 mm

Art-Nr. ABSA19-20041

PRODUKT / PRODUCT



**chaos AIR-board® UV satin clear**

3020 x 1000 x 19 mm

Art-Nr. ABCS19-20001



**AIR-board® acoustic**

2500 x 1220 x 18 mm

Art-Nr. ABM018-00201

Zusätzlich zu unserem Lagerprogramm produzieren wir auch individuelle Paneele nach Kundenwunsch.

*In addition to the range of stocked panels we also produce panels to customer requirements.*

lagerware / stock items

## clear-PEP®

### PRODUKT / PRODUCT



**clear-PEP® UV PC transparent**  
3020 x 1220 x 19 mm  
Art-Nr. CPU019-30201



**clear-PEP® UV PC color orange**  
3020 x 1000 x 19 mm  
Art-Nr. CPC019-24781



**clear-PEP® UV PC color light blue**  
3020 x 1000 x 19 mm  
Art-Nr. CPC019-26251



**clear-PEP® UV satin opal**  
3020 x 1000 x 19 mm  
Art-Nr. CPSA19-20011

### PRODUKT / PRODUCT



**clear-PEP® UV satin grey**  
3020 x 1000 x 19 mm  
Art-Nr. CPSA19-20061

NEU / NEW



**clear-PEP® UV PC stage**  
2000 x 1000 x 40 mm  
Art-Nr. CPS040-20001

BODENPANEEL  
FLOOR / STAGE



**clear-PEP® spy UV satin clear**  
3020 x 1000 x 19 mm  
Art-Nr. CPSS19-20001

NEU / NEW





### Die Möglichkeiten

Neben dem Standardprogramm bieten wir verschiedene Deckschichten, Dimensionen, Kernstrukturen, Farben und Materialkombinationen mit speziellen Eigenschaften an.

Kundenorientierung und Flexibilität erlauben es uns, individuelle Lösungen anzubieten.

### The possibilities

*In addition to the standard range we offer many different surface sheets, dimensions, core structures, colours and material combinations with special properties.*

*Customer orientation and flexibility allow us to offer customized solutions.*



### Farben/Colours

Alle Farben sind in satinierten/glänzenden Ausführungen lieferbar.

*All colours in glossy or satin finishes are available.*



### Formen/Shapes

Individuelle Zuschnitte/Bohrungen/Ausfräsungen und Verformungen können nach Kundenanforderungen gefertigt werden.

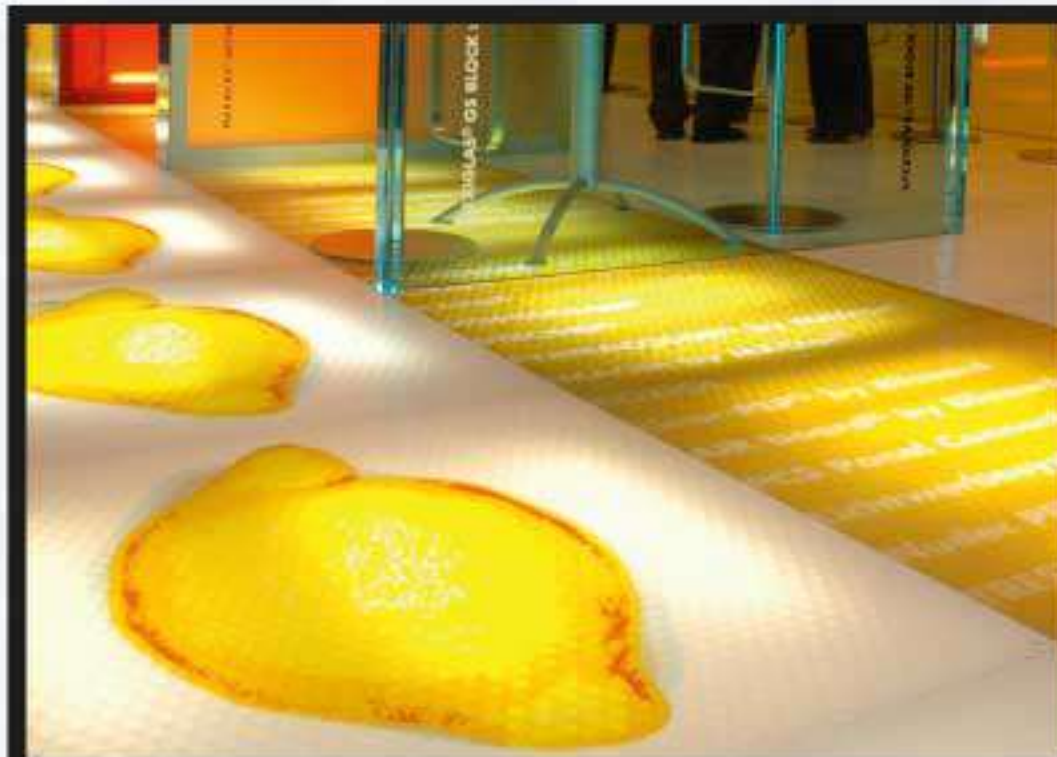
*Cutting/drilling/bending/CNC milling according to customer's specifications.*



**Dimensionen / Dimensions**

Paneelformate sind bis zu einer Größe von 7500 x 2500 mm möglich.

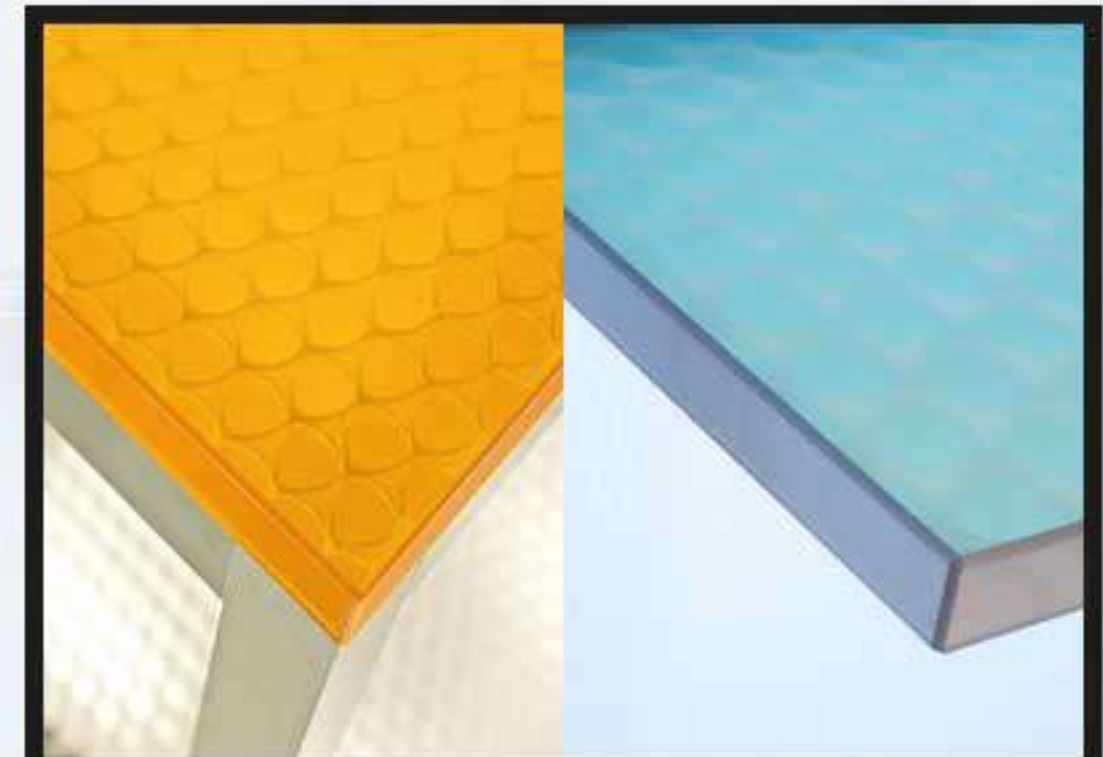
*Panel sizes up to 7500 x 2500 mm.*



**Aufdruck / Printing**

Beliebige Grafiken/Logos können mit Hilfe von Digitaldruck auf die Paneele aufgedruckt werden.

*Any graphics/logos can be printed on the panels with digital print.*



**Kantenlösung / Edge banding**

Kantenlösungen für den Innen- und Außenbereich.

*Edge banding options for interior and exterior applications.*

Mit unseren Systemlösungen präsentieren wir maßgeschneiderte Konzepte für Innenausbau und Fassadengestaltung. Spezielle Profilsysteme ermöglichen Raumabtrennungen und Wandgestaltungen, Dreh- und Schiebetürkonzepte, Beschattungssysteme und vieles mehr mit hohem Designanspruch.



### **Wandsysteme / wall systems**

Vollwertige Wandsysteme, integrierte Türen und Profilsysteme werden montagefertig geliefert.

*Complete wall systems, integrated doors and profile systems are delivered ready for assembly.*



### **Türsysteme / door systems**

Individuelle Dreh- & Schiebetüren werden als Komplettlösung mit passenden Beschlagsystemen angeboten.

*Customized hinged & sliding doors together with the appropriate mounting systems.*



### **Stellwandsysteme / partition walls**

Temporäre oder permanente Stellwände für Raumteiler, Messestände, Ausstellungen, Kongresse, Büros, Foyers etc.

*Temporary or permanent partition walls for applications such as exhibition booths, congresses, offices, foyers etc.*

*With our system solutions we present bespoke concepts for interior and external applications. Special profile systems offer room partitions, decorative walls, swing and sliding doors, shading systems and many other possibilities for requirements with a higher level of design.*



### **Fassaden/facades**

Witterungsresistente Paneele aus UV-geschützten Materialien mit hohen thermischen Isolationswerten kommen speziell bei Hinterleuchtung und Sonneneinstrahlung optisch perfekt zur Geltung.

*The weather-resistant panels from UV-resistant materials with outstanding thermal insulation values are at their best when illuminated from the rear or with sunlight.*



### **Beschattungssysteme/shading systems**

Witterungsresistente Paneele aus UV-geschützten Materialien setzen optische Akzente in der Außenfassade und bringen Schatten und Komfort.

*The weather-resistant panels from UV-resistant materials are providing a distinct look to a building's exterior while providing shade and increased comfort.*

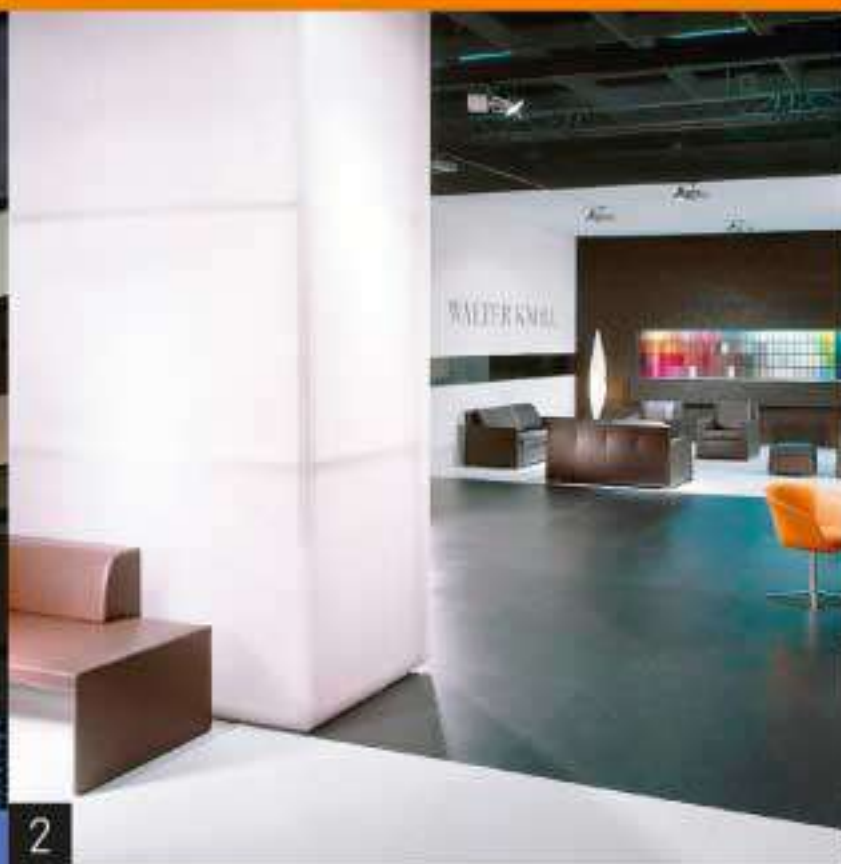


### **Akustiksysteme/acoustic systems**

Die speziell entwickelten Akustikpaneele für Decke/Wand und Trennwände dienen zur Verbesserung der Raumakustik und der Schallabsorption.

*The specially developed acoustic panels for ceilings, walls and partitions are used to improve the room acoustics and sound absorption.*

anwendungen / applications



Anwendungsmöglichkeiten von **AIR-board®**- und **clear-PEP®**-Paneelen: Architektur, Messestände, Ladenbau, Bühnenkulissen, Innenausbau, Displays, Lichtwerbung, Schaufensterdekorationen, Regale, Leuchtkörper, Lichtdecken, Design-Möbel, Trennwände, Schiebetüren, Doppelböden, Geländerverglasungen, Fassadenelemente, Vordächer u. v. m.  
 Application possibilities for **AIR-board®**- and **clear-PEP®**-panels: architecture, exhibition booths, shop design, stage setting, interior design, displays, illuminated advertising, shop window decorations, shelves, luminaries, illuminated ceilings, furniture, partitions, sliding doors, raised floors, balcony panels, facades, canopies and much more!



6



5



2



2



3



1



1



3

- 1 Shopdesign, Ladenbau, Bar
  - 2 Messebau, Bühnenbau
  - 3 Museen
  - 4 Designmöbel
  - 5 Sanitäranwendungen
  - 6 Hotel- und Wellnesseinrichtungen
  - 7 Aussenfasaden
- 
- 1 Shop design/bars
  - 2 Exhibition booths
  - 3 Museums
  - 4 Designer furniture
  - 5 Sanitary applications
  - 6 Health spa and hotels
  - 7 External facades



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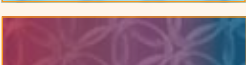

Web: www.allplastics.com.au



NBB - Die Agentur | Bilder: Nikolaus Faustauer, Maximilian Muzzinas, Michael Huber, mada GmbH, Archiv Design Composite GmbH



# clear-PEP® panels

Color	Top sheets	Dimensions	clear-PEP®	clear-PEP® spy
	PC transparent	2550 x 1050 x 16	CP0016-25501*	
	PC transparent	2550 x 1050 x 19	CP0019-25501*	
	UV PC transparent	3020 x 1220 x 19	CPU019-30201*	CPUS19-30201
	UV PC color orange	3020 x 1000 x 19	CPC019-24781*	CPCS19-24781
	UV PC color green	3020 x 1000 x 19	CPC019-27771*	CPCS19-27771
	UV PC color light blue	3020 x 1000 x 19	CPC019-26251*	CPCS19-26251
	UV PC color dark blue	3020 x 1000 x 19	CPC019-26271*	CPCS19-26271
	UV satin clear	3020 x 1000 x 19	CPSA19-20001*	CPSS19-20001
	UV satin opal	3020 x 1000 x 19	CPSA19-20011*	CPSS19-20011
	UV satin orange	3020 x 1000 x 19	CPSA19-20041*	CPSS19-20041
	UV satin glass green	3020 x 1000 x 19	CPSA19-20021*	CPSS19-20021
	UV satin ice blue	3020 x 1000 x 19	CPSA19-20031*	CPSS19-20031
	radiant	2420 x 1200 x 19	CPR019-24201	CPRS19-24201
	UV PC stage	2000 x 1000 x 40	CPS040-20001*	

\*stock items, delivery time for other panels on request



## 1. Introduction

Our standard lightweight panels respectively any customized panel demand not only a great deal of the modern Design Composite production equipment, but also a comprehensive know-how of processing and handling by our customers.

Following instructions and suggestions should assist you to handle Design Composite lightweight panels according to their properties.

## 2. Metal cutting processing of Design Composite panels

### 2.1 General

In principle the selection of the cutting tool depends on the type of top sheet material.

**Note:** In general we recommend to wear protective gloves and safety glasses during mechanical processing with the panels.

### 2.2 Drilling

Any conventional metal drill bit (HSS spiral bit) can be used. Panels without metallic top sheets should be drilled with high drill speed (50 – 10 m/min, but little feed speed). We recommend an advance drill if the hole diameter is more than 5 mm.

Due to the thermal expansion of any thermoplastic top sheet a hole diameter of minimum 2 mm bigger than the screw diameter is imperatively required.

Lubrication is useful during drilling in order to achieve an optimum drill surface.

### 2.3 Sawing

Sandwich panels can generally be cut with standard workshop equipment (e.g. work table or hand circular saw, compass and band saw). Carbide tipped saw blades with a large number of crown teeth together with high cutting speed and little feed speed produce optimum results.

When drilling a support could prevent detachment of the lower top sheet.

**Cutting thermoplastic sheets (e.g. clear-PEP®, clear-PEP® color, AIR-board®, AIR-board® satin) require special saw blades in order to avoid bursting of edges.**

**Recommendation: Leitz HW circular saw blade for NE-metal neg. HW 300x3.2x30, Z96, FZ / TZ.**

**For further information look up [www.leitz.org](http://www.leitz.org)**

**Cutting with laser and/or water-jet is not possible!**

## **2.4 Milling**

**Sandwich panels can be milled with cemented carbide (CC) milling tools.**

**Note: high cutting speed (15.000 – 25.000 R/min) combined with little feed speed produces optimum results.**

## **2.5 Grinding**

**Grinding is used to adjust minor top surface defects or rough cutting edges. High grinding speed with little feed speed is recommended too. The requested roughness can be adjusted with the grit size of the sandpaper. Tape speed of 10 m/s is suggested.**

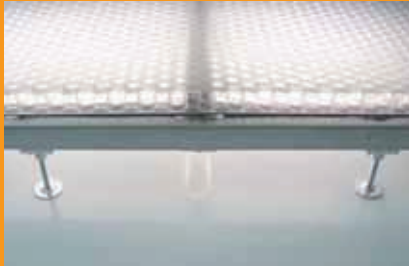
## **2.6 Burnishing**

**Manual polishing can either be done with a soft cloth or with a suitable felt together with a polishing paste.**

**Larger surfaces should be polished with a face-polishing machine that is equipped with a cloth of felt or lambskin soaked with polishing paste.**

# Installation systems for all AIR-board® & clear-PEP® panels

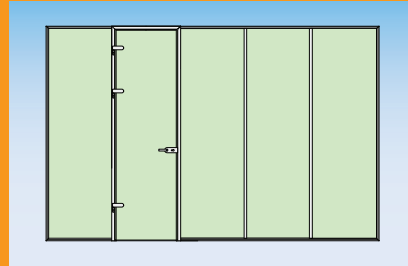
**Profile system for raised floor**



Profile system for installing clear-PEP® UV PC stage - panels as raised floor; appropriate for backlighting.

**Appropriate for interior applications**

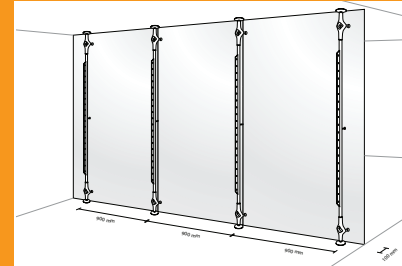
**Profile system for partition walls**



Profile system for partition walls in different variations, including swing- and sliding doors.

**Appropriate for interior applications**

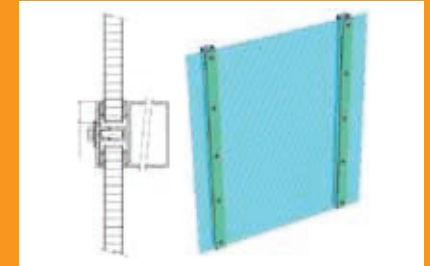
**Profile system for partition walls**



Profile system for partition walls with open panel joints; completion with swing-, sliding doors and shelves on request.

**Appropriate for interior applications**

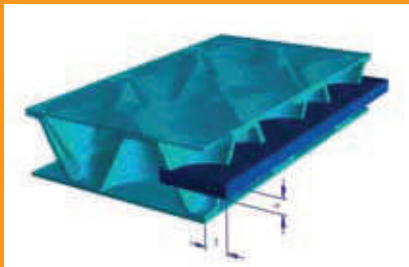
**Visible clamping profile system**



Example of a typical aluminium fixing system for exterior glazing; compatible for all AIR-board® & clear-PEP® Panels.

**Appropriate for exterior applications**

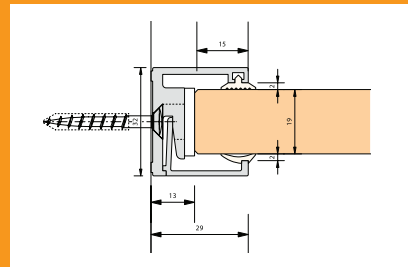
**Tongue & groove connection**



Tongue & groove connection for panel joints without profiles; specially designed for standard aluminium booth construction profiles.

**Appropriate for interior applications**

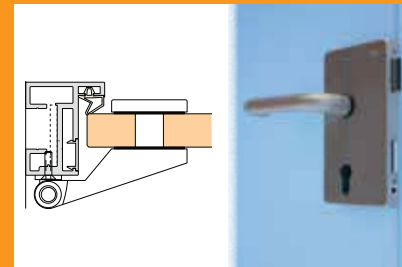
**Profile system for partition walls**



Slim profile system for fixed partitions; compatible with all 16 and 19 mm AIR-board® & clear-PEP® panels.

**Appropriate for interior applications**

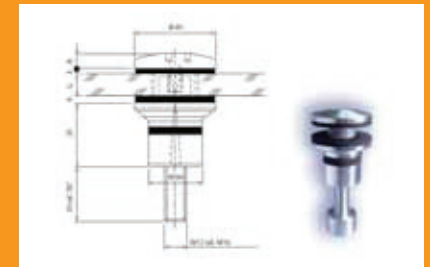
**Fittings for swing doors**



Fittings for swing door system appropriate for frameless 19 mm AIR-board® & clear-PEP® panels.

**Appropriate for interior applications**

**Point fixing system**




Our panels with sealed edge banding 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  $\geq 5^\circ$ .



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	<b>Material Safety Data Sheet</b> <b>Product Lines</b> <b>clear-PEP® and AIR-board®</b>	<b>MSDS</b> <b>0102</b> Ch.- Nr.:      01 page:          1 von 2
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1. Trade names of products concerned:

**clear-PEP® PC**  
**clear-PEP® UV PC**  
**clear-PEP® UV PC color**  
**clear-PEP® UV PC stage**

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

2. Composition / Indication to parts:

Chemical characterisation:

Polycarbonate panels bonded with a drawn TRICore or honeycomb Polycarbonate core

Dangerous substances:

By bonding with Polyurethane adhesives Isocyanathe can be released, however they are chemically bonded in adhesive reacted out (approx. 48 hours after processing).

3. Possible dangers:

unknown

4. First Aid actions:

inhale:  
skin contact:  
swallow up:  
eye contact with PC-swarf:

not applicable  
not applicable  
not applicable  
irrigation with water or commercial eye irrigations

5. Actions against fire:

Suitable extinguishing agents:  
Unsuitable extinguishing agents:  
At fire following will be released:  
Other decomposition products at thermal decomposition:

water, powder, foam, carbon dioxide  
unknown  
Carbon Dioxide, water vapour

Further information:

Carbon Monoxide and other organic monomers in small quantity  
combustion residues are to be disposed according to local regulations

6. Actions at unintended release:

not applicable

7. Handling and storage:

handling:  
storage:

no information  
in delivery package in dry rooms, according to local fire-directions

These indications are based on our state of knowledge and experience at date of issue, but they do not bear the meaning of assurance of characteristics. It is not allowed to change nor to translate into other products. Copying in unchanged status is allowed.



**Material Safety Data Sheet**  
**Product Lines**  
**clear-PEP® and AIR-board®**

**MSDS**      **0102**  
Ch.- Nr.:    01  
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8. Exposition limitation and personal protective equipment:

Parts with limit value to be observed – not applicable

Personal protective equipment:

breathing protection

not necessary

eye protection

at mechanical processing – protective goggles

ear protection

at mechanical processing – ear protection

9. Physical and chemical characteristics:

form:

non-detachable

colour:

according to customer's request

smell:

neutral

change of condition:

non

ignition temperature:

over 200° C

solubility in water:

unsolubly

10. Stability and reactivity:

no change of condition at usage according to determination

11. Information on toxicology:

no acute toxicity

12. Information on ecology:

Information on elimination:

no datas available

Behaviour in environment

compartments:

not water endangering, environment neutral

13. Information on disposal:

According to local magisterial directives

14. Information on transport:

no labelling liability for dangerous goods-law according to EEC-law

15. Instructions:

labelling according to EEC-law:

no labelling liability

national regulations:

not subject of dangerous goods-regulation

16. Others:

information for usage of this MSDS please find in the footer

These indications are based on our state of knowledge and experience at date of issue, but they do not bear the meaning of assurance of characteristics. It is not allowed to change nor to translate into other products. Copying in unchanged status is allowed.

