

## AN ECO-FRIENDLY SOLUTION



IMPERMA



BOARD

QUALITY PVC FOAMBOARD

A construction board, compliant with European and Japanese emission standards.

## A little introduction



We are proud to introduce you to an alternative construction material with many practical applications and that is a recyclable replacement for MDF, Chipboard, Melamine board, and Plywood. Imperma Board comes in sheet format from 3mm-32mm that can be machined and finished like traditional materials; but it's **SIMPLY BETTER!**

The product is an homogeneous material with a foam core made of closed cell PVCU with a hardened skin on both surfaces. Imperma Board is non-toxic, formaldehyde free, non-porous and can be used and processed using the same methods as wood-based panel products. The unique properties of Imperma Board enables unparalleled possibilities for curves, profiles and bends, without affecting its structural integrity.



Suited to both interior and exterior environments, our non-toxic, eco-friendly PVC Foam-based Imperma Boards, are a perfect alternative to wood, melamine, chipboard, and MDF.

The product is a homogeneous material with a foam core made of closed-cell PVCU and a hardened, robust surface.

A relatively lightweight yet highly durable lifetime investment product, Imperma Board complies with European emissions standards and RoHS Standards and is gaining popularity in international markets, as well as South Africa.

# Why Imperma Board is the obvious design and manufacturing choice?



- Machined, saw-cut, CNC-cut, routed, profiled and edged with no special or additional tooling required, yet generates less wear and tear on machines and blades
- Easy to handle, cost effective, simple construction
- Unparalleled possibilities for curves, profiles and right angles without affecting surface integrity
- 3mm to 32mm thickness
- Finishes – UV Print, paint, duco, lamination with timber veneer or an HPL Laminate
- A versatile choice



- 100% recyclable
- Formaldehyde free
- Releases minimal dust
- Non-toxic
- Human and environment friendly



- Fade resistant
- A consistently smooth, bright surface



- Rot resistant
- Insect proof



- No sealants, treatments or painting\* required

\* However, Imperma Boards are suitable for surface coating and can be directly painted on with minimal to no preparation.



- Hard, smooth surface
- >30 year lifespan, excellent chemical resistance
- Exceptional durability



- Moisture resistant (non-porous impermeable/ invulnerable to mold and mildew)
- UV resistant
- Minimal expansion/ contraction & no splitting



- Excellent thermal properties – not readily susceptible to fire
- Self extinguishing
- Germ and pathogen resistant\*

\* An anti-bacterial option is 97% effective against MRSA and E.coli is available upon request subject to minimum order quantities and delivery lead times.





Imperma Board is the sustainable and optimal solution for high-humidity spaces.



**Retail, commercial, domestic applications, sports facilities and laboratories**

Imperma Board has wide applications in shopfitting, office fit-outs, furniture, shelves, partitions, wall cladding and ceilings.

**Yacht and boat interiors and bulkheads**

Imperma Board is a safe, cost-effective and sustainable solution for boat interiors.

The refurbishment and manufacture of off-road vehicle bodies and caravans.

**UV RESISTANT** • Minimal expansion and contraction. No splitting.

## Kitchen Cabinets

Imperma Board can be combined with a wide variety of decorative surface laminates.



## Interior and Exterior Advertising

Still the go-to product in the signage industry, Imperma Board can be manufactured in various thicknesses, and lengths and is UV-stable\*.

\* UV-stability only applies to white boards.



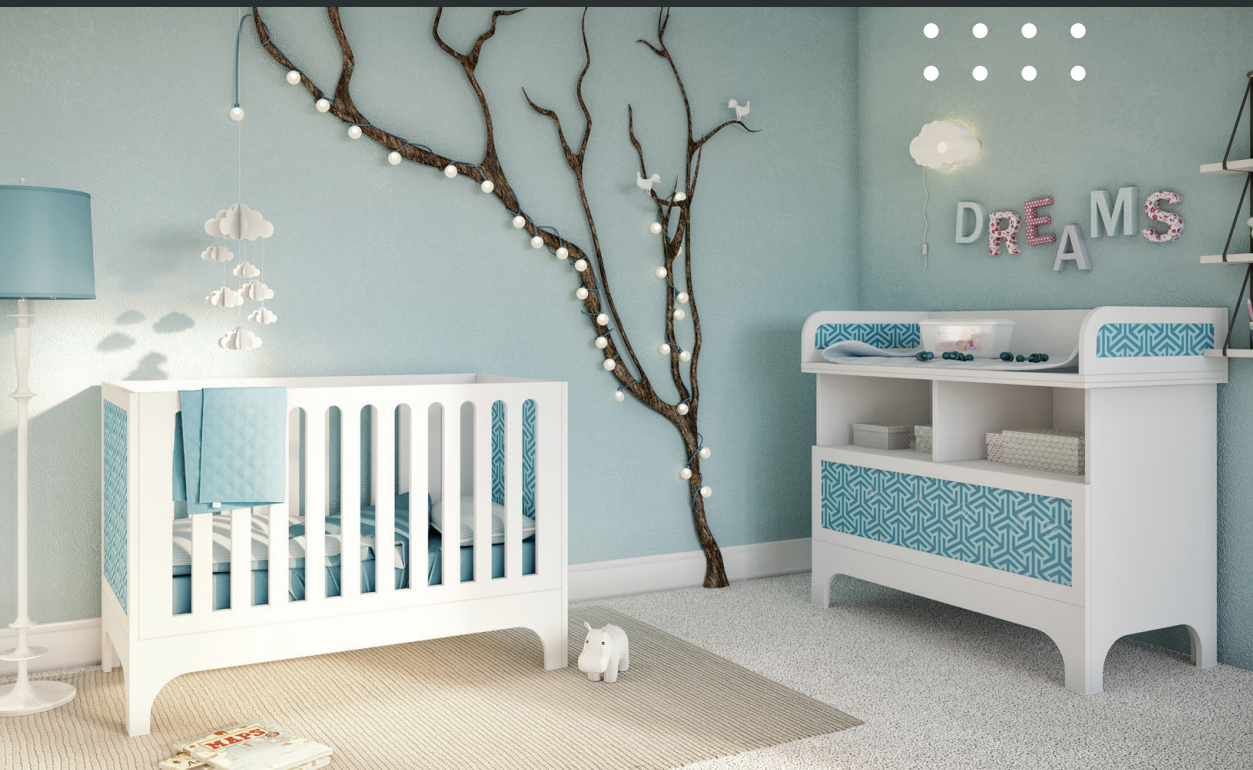


## Packaging and storage

Storage should be in standard warehouse conditions with an ambient temperature of 15°C – 25°C. Products should be stored flat on a pallet, with a flat cover sheet to protect it. Do not store close to heat sources.

Sheets should be carried on edge and lifted directly instead of dragged off the pallet. Protective film (where applicable) should be removed when necessary.

To think... Outside the box!



## Ultra violet resistance

Sunlight affects all materials to varying amounts. The weathering properties of Imperma Board sheets are excellent but can be further enhanced by increasing the density from 0,50g/cm<sup>3</sup> to 0,70 g/cm<sup>3</sup>.

The maximum, in service, surface temperature is between 60°C and 70°C.

For exterior use, lighter colours are preferable as darker sheets absorb heat from sunlight and can deform.

If used behind glass, ensure adequate spacing is left between the foam sheet and the glass to ensure adequate ventilation.

## Precipitation

Imperma Boards do not absorb moisture from precipitation and will not deteriorate or degrade in the presence of moisture. Hail storms may cause damage through impact of large hail stones on cold panels.

No sealants, treatments or painting required





## Chemical resistance

The inherent nature of the base PVC polymers has excellent chemical resistance. Resistant to:

- Salt solutions.
- Most acid solutions.
- Most petrol, alcohols, fats and oils.

PVC is, in varying degrees, not resistant to organic chemicals containing nitro and chlorine groups, aromatic hydrocarbons, amino compounds and some ethers.

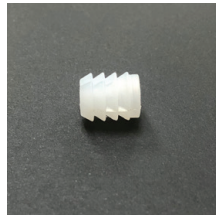
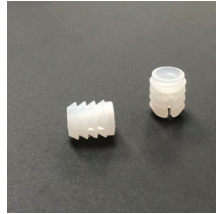
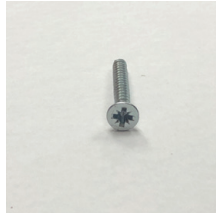
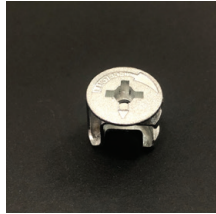
## Cleaning and maintenance

Clean lightly soiled sheets with water and solvent free, non- abrasive and non-scouring liquids.

Heavily soiled sheets can be cleaned with methylated spirits, methyl petroleum and alcohol ether solvents. Normal precautions should be taken.

Due to good electrical insulation properties, a static charge could develop during cleaning or handling.

Excellent thermal properties - not readily susceptible to fire



Coefficient of thermal expansion

Value m/mK 50 x 10<sup>-6</sup> |

Value mm/mK 0.05

## Manufacturing methodology

Imperma Boards can be machined using standard woodworking machinery. We recommend using counter-sunk self-tapping screws and not chipboard screws. It is always advised that the correct tools are used for fixing screws, namely an impact screw-driver. Nylon dowels are available from many suppliers. These dowels are especially effective with a little PVC weld, which then fuses the nylon to the board for extra secure and long lasting fixes.

There are many compatible knock down fixings that lend themselves to Imperma Board. We recommend using them in conjunction with plastic dowels and a little PVC weld for additional bonding. Hafele, FIT and FHD are just a few of the suppliers of plastic and nylon fixings.

## Bonding

Surfaces should be cleaned and free of any residue. We recommend using a PVC weld adhesive. There are many available on the market under different brand names.

The adhesives company, Pekay Group in Industria, Johannesburg was asked to conduct tests on various adhesives with PVC Foamboard. Their report and recommendations can be found at [www.impermaboard.com/downloads](http://www.impermaboard.com/downloads)

## Specifications

<b>Size</b>	Various widths and lengths including standard board sizes
<b>Thickness</b>	3 – 32mm
<b>Density</b>	0.5 – 0.7g/cm <sup>3</sup>
<b>Colour</b>	White with other colours available on order
<b>Executive standard</b>	QB/T 2463.1-1999
<b>Certificate</b>	ISO 9001
<b>Weldable</b>	Yes
<b>Foam process</b>	Celuka
<b>Water saturation</b>	≤1%
<b>Tensile strength</b>	12 - 20MPa
<b>Elongation at break</b>	15 - 20%
<b>Vicat softening point</b>	73 – 76 °C
<b>Impact strength</b>	8 - 15 KJ/m <sup>2</sup>
<b>Shore hardness</b>	D 75
<b>Flexural modulus of elasticity</b>	800 - 900 MPa
<b>Bending strength</b>	12 - 18 MPa
<b>Life span</b>	>30 years
<b>Flame retardance</b>	Self-extinguishing ≤ 5 sec.

## Acoustic Properties

<b>Thickness</b>	<b>Attenuation</b>
3mm	19dB
5mm	22dB
6mm	23dB
8mm	24dB
10mm	27dB

**Sound attenuation frequency range 100 - 3 000**

### **Fire Rating**

Imperma Board has a fire classification of B, s1, d0 in terms of EN13501.

The product is thus combustible (B), quantity/speed of emission is absent or weak i.e. extremely limited, smoke development is (s1) and no burning droplets (d0)

### **Warranty**

Manufacturers' warranty available on request.

PROPERTY	TEST METHOD	UNITS-SI	VALUE
<b>PHYSICAL</b>			
Relative density	In house	g/cm <sup>3</sup>	50-72
Water absorption	ASTM-570	%	0.5-0.8
<b>MECHANICAL</b>			
Tensile strength at yield	ASTM D-638		
Elongation at break	ASTM D-638		
Flexural strength at yield	ASTM D-790		
Flexural modulus	ASTM D-790		
Charpy impact strength	ASTM D-256		
Shore D hardness		Value	n/a

THERMAL	TEST METHOD	UNITS-SI	VALUE
<b>THERMAL</b>			
Service temperature	In house	°C	Minus 10-65
Heat distortion temperature	In house	°C	63
Vicat softening temperature	ASTM D-648	°C	75
Coefficient of thermal expansion	ASTM D-648	°C	75
<b>ELECTRICAL</b>			
Dielectric strengths	ASTM D-257	Ω	5x10
Surface resistivity	ASTM D-257	Ω-cm	5x10
<b>FLAMABILITY</b>			
EN 13501			B, s1, do
BS 476 part 7			Class 1
UL 94			V-0
NSP 92501,5			M-1, M-2
DIN 4102			B-1
IEC 695.2.1			Self Extinguish
ASTM E-84			Class A

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