

# Lightweight Construction and Individual Interior Design

**Lightweight construction and individual design**

**- what Thermopal offers – references from current projects!**

**Speaker: Thomas Kastner – Project manager track vehicles**

# What is important for your company?

**Shared success**

→ *What is more important?*

**The benefit of the customer / passenger!**

**Benefits are:**

- **design concept**
- **optimum engineering**
- **punctual implementation**

# Company Thermopal

thermopal



- member of Pflaiderer AG
- situated in Leutkirch, in the Allgäu
- 500 employees

## → Specialities of Thermopal:

- decorative materials and core technology
- DST system: any design with any texture on any core material
- special products, eg. Individual, lightweight boards etc.

# What does design mean to you?

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- Artistic
- Planning
- Visuality

# What does design mean to us?

## Sensory experience!

### Touch

- "felt" temperature
- feel of "real wood"

### Hearing

- Sound reflection

# What does design mean to us?

## Sight

- colours affect our mood

## Smell and taste

- perception
- design
- harmony

# What does design mean to us?

thermopal



**Rooms with emotion.  
Walls with U225 fire engine red.**

# What does design mean to us?



**Touch, hearing, sight ...  
designs are much more than visual stimuli.**

# What does design mean to us?



# Thermopal compared to market possibilities

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- 500 compared to 2,500 designs
- 12 compared to 50 different surfaces

## Batch size

Format 5,500 or 2,750 x 2,020 mm

## Note:

The larger the format, the better the optimization, the lower the costs.

# How can we offer you individuality?

- we offer a wide range of colours / reproductions and surfaces

But

→ Individuality is magic for our customers

**This is how we offer you individuality!**

**thermopal**



**This is how we offer you individuality!**

**thermopal**



# This is how we offer you individuality!



# This is how we offer you individuality!

**thermopal**



## Demand is extraordinary

- fire protection requirements
- resistance
- wear and tear
- project-based, individual design concept

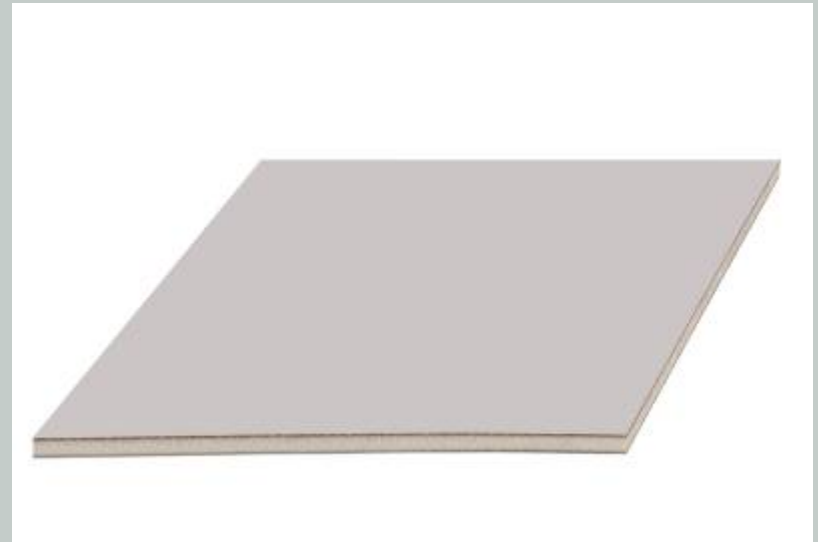
## Requirements increasing...

- **reduce weight**
- **more transport volume**
- **more comfortable / easier to handle**
- **reduce costs (energy / less material / brake system)**

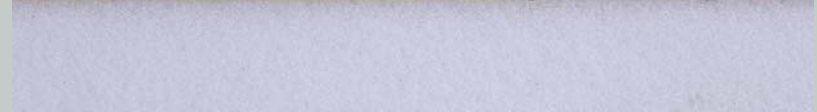
# Where lightweight boards can be used

## Solid PU Foam-Brillant

- General furniture, trade fair and shop construction (e.g. conference tables, water resistant furnitures)
- Partitions
- Caravans and transportation vehicles
- Ship building
- Aircraft construction
- Railway interiors (backtables in seats / ceilings / sidewalls for better isolation!)



## Solid PU Foam-Brillant



Polyurethane hard foam core sealed on both sides with polyester fleece  
Resistant to moisture, good dimensional stability, very light and yet high pressure and heat resistance, insulating properties

- **Format:** 2,750 x 2,020 mm  
(lengthwise join of core board at approx. 1,400 mm)
- **Thickness:** 20.4 mm (HPL 1.2 mm on both sides)  
4.6 mm (HPL 0.8 mm on both sides)
- **Material class:** core board B3, non-dripping
- **Surface:** 01, 04,06 not possible
- **Weight per unit area:** approx. 3 kg/m<sup>2</sup> (thickness 4.6 mm)  
approx. 5.5 kg/m<sup>2</sup> (thickness 20,4 mm)
- **Bonding:** PUR (polyurethane adhesive)

# Where lightweight boards can be used

## Aluminium Honeycomb-Brillant

- Ship building and ship interiors  
e.g. wall panelling in corridors  
and emergency and escape routes
- Track vehicles  
(e.g. interior panelling etc.)
- Furniture construction  
(e.g. shelves, extra high sliding doors etc.)
- General vehicle construction
- **Railway interiors (WC cabins / wall constructions / tables)**



## Aluminium Honeycomb-Brillant



Aluminium honeycomb core with aluminium face

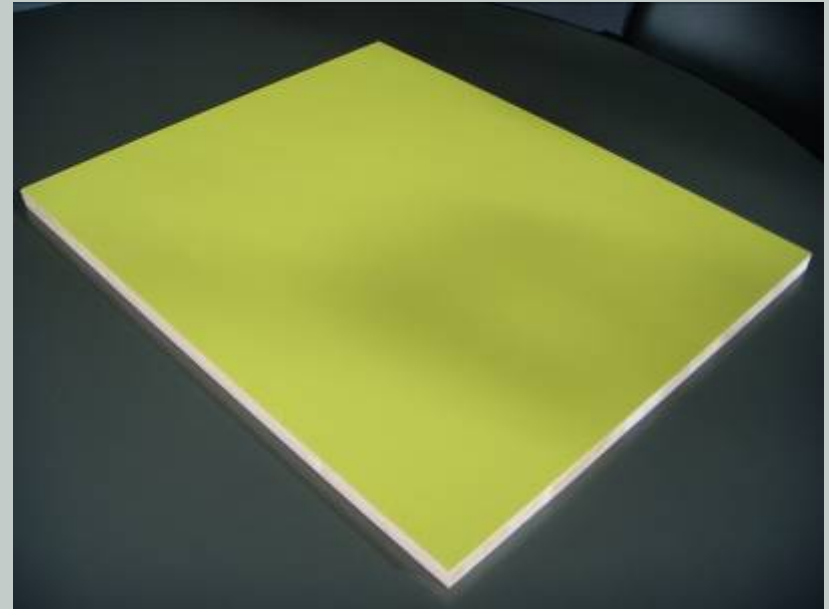
Resistant to moisture, ultra lightweight and yet high pressure and breakage resistance, high resistance to twisting and bending, does not rot

- **Format:** 2,500 x 1,500 mm
- **Thickness:** 10.8 mm / 11.6 mm  
(HPL 0.8 mm on one or both sides)
- **Material class:** B1 – fire retardant
- **Surface:** no texture restrictions
- **Weight per unit area:** approx. 6.5 kg/m<sup>2</sup> (thickness 10.8 mm)  
approx. 7.7 kg/m<sup>2</sup> (thickness 11.6 mm)
- **Bonding:** PUR (polyurethane adhesive)

# Where lightweight boards can be used

## Plywood super light-Brillant

- General furniture construction
- Trade fair and shop construction
- Caravans
- Ship building
- Vehicle construction
- **railway interiors (also walls, tables, flooring)**



## Plywood super light-Brillant



Centre layer in Albasia/Balsa wedge galvanized and sealed on both sides with thick peeled veneer, maximum requirements for bending, highly wear resistant,

- **Format:** 2,600 / 5,200 x 2,050 mm
- **Thickness:** 20.6 mm
- **Material class:** B2 – normal inflammable
- **Surface:** 01 / 04 / 06 – not in standard programme
- **Density:** approx. 300 kg/m<sup>3</sup>
- **Bonding:** D3 – PVAc

# References

## Velaro CN – Siemens AG



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# References

Flirt OKO" (regional train Rostock-Sassnitz)



## Growing market requirements

→ costs and benefits

→ forthcoming projects

**Thank you very much  
for listening**