

**Modular System
“SeaPan”
for interior and
superstructure design**

E-LASS webinar
16th of September, 2020

CBG Composites GmbH
Dr. Alexander Lebedev

... Fire protection - safe and light...

Manufacturing place with a 100 years history



- CBG Composites GmbH was founded in 2014 and is located in North-Rhine-Westphalia which is one of the most industrial regions in Germany
- Manufacturing portfolio consists of composite modern innovative products for different land and sea applications
- World wide export activities



Certification and patents

Patented solutions in a certified environment



- Quality management system ISO 9001
- Ship equipment 2014/90/EU -Type Examination: Module B
Production Quality Assurance: Module D
- Registered Trade Marks: SeaPan®, FirePan®, FireCore® etc.



Product portfolio

optimal composition of products of natural origin
with meaningful depth of production



Basalt Rocks



Basalt Roving



Basalt fiber



Basalt fabric



Basalt grid



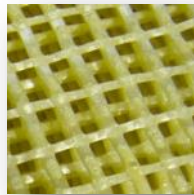
Basalt rebar



Mineral wool
LifeRock®
Rockwool core
FireCore®



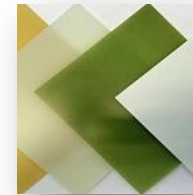
Sandwich
Panels
SeaPan®, FirePan®



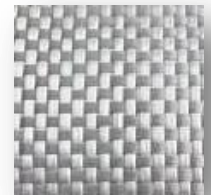
Grid Laminate
Glass preregs,
Ceramic Laminates



Basalt preregs,
and Glass fiber
Laminate



Basalt



Glass fabric



Non-combustible
Adhesive mass
Ceramatrix



Non-Combustible
Adhesive mass
Ceramatrix-Carbo



Non-Combustible
Fitting mass
FiberMatrix



Anti-Fire
Impregnation
FireStop



Biodegradable



Recyclable

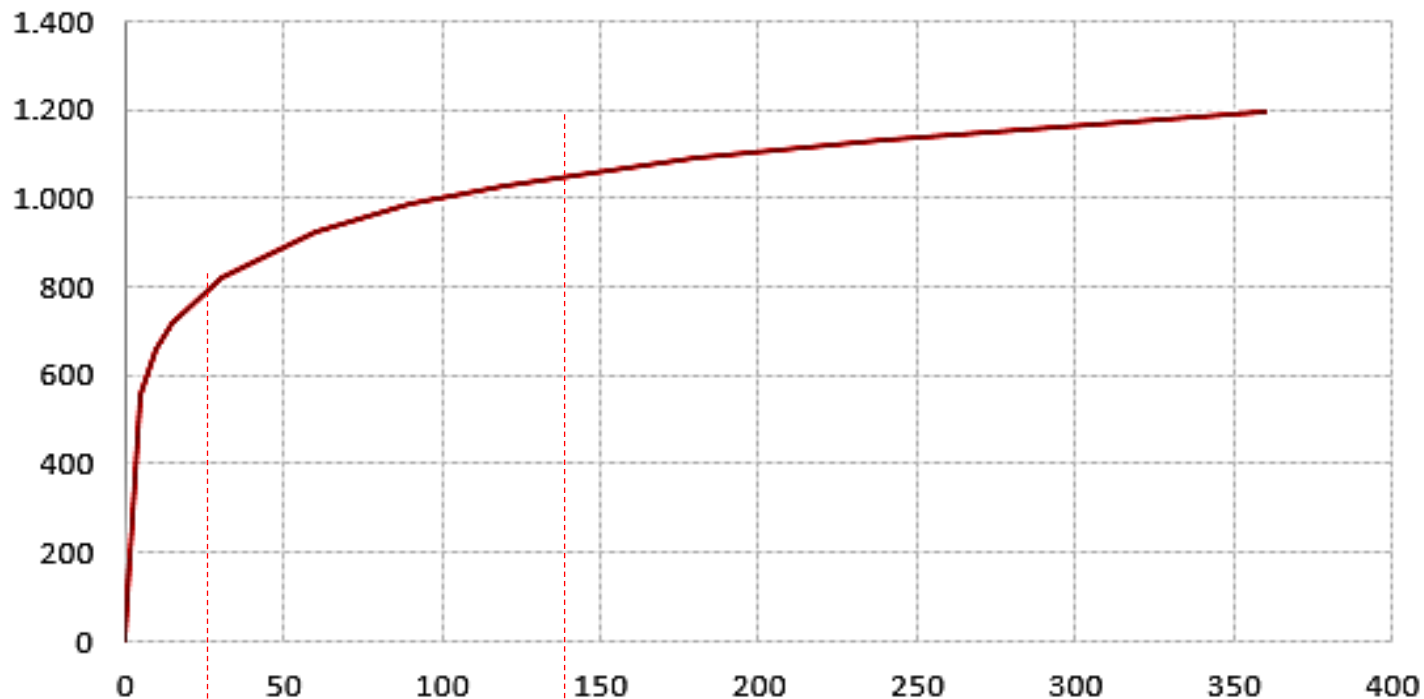
High-performance material – Basalt

Competitive with different materials

Standard fire temperature-time curve (SFTTC)

according to DIN 4102-2

Temperature, (°C)



Time, (min)

Softening point Steel

Softening point Basalt

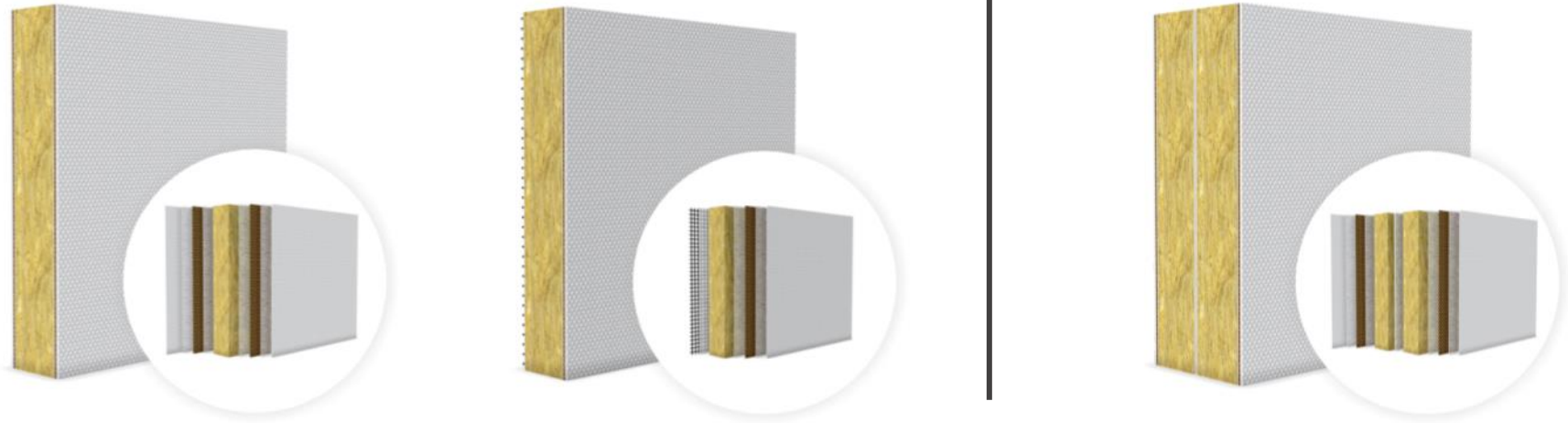
Modular panel system SeaPan

Partition walls, ceilings and floating floor solutions

Panels Construction

Single Chamber Panels

Multi Chambers Panels



Core Material:

MW LifeRock 180, pre-processed high performance mineral wool with oriented fibers

Front Side:

Multilayer basalt laminate on inorganic silicate matrix (Basalt-Silicate-Plate), covered on demand by different layers, exemplary glass laminates, HPL, CPL metal films etc.

Back Side:

Multilayer basalt laminate on inorganic silicate matrix (Basalt-Silicate-Plate), covered on demand by different layers, exemplary glass laminates, HPL, CPL metal films etc. OR basalt grid structure

Fire protection adhesive Ceramatrix L 1-50



Modular panel system SeaPan

Partition walls, ceilings and floating floors solutions



Reaching of the product properties which are most important for the use in ship building

- **non combustibility**
- **high fire resistance**
- **low weight**
- **low thickness**

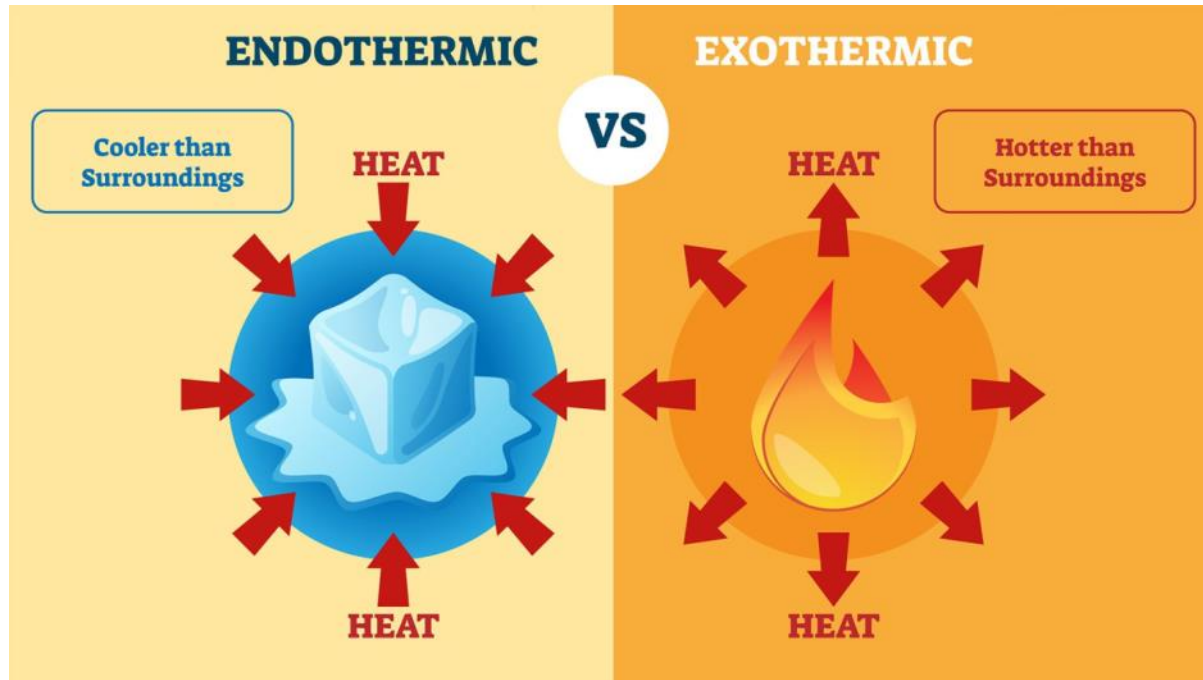
is insured by the choice of raw materials, construction solutions AND by the **use of patented low viscosity single-component, water-resistant, non-combustible adhesive mass with endothermic effect LR Ceramatrix 1-50** produced from natural components, primarily rocks and basalt microfibers.



Modular panel system SeaPan

Partition walls, ceilings and floating floors solutions

Endothermic reaction is a chemical reactions in which the reactants absorb heat energy from the surroundings to form products. These reactions lower the temperature of their surrounding area, thereby creating a cooling effect.

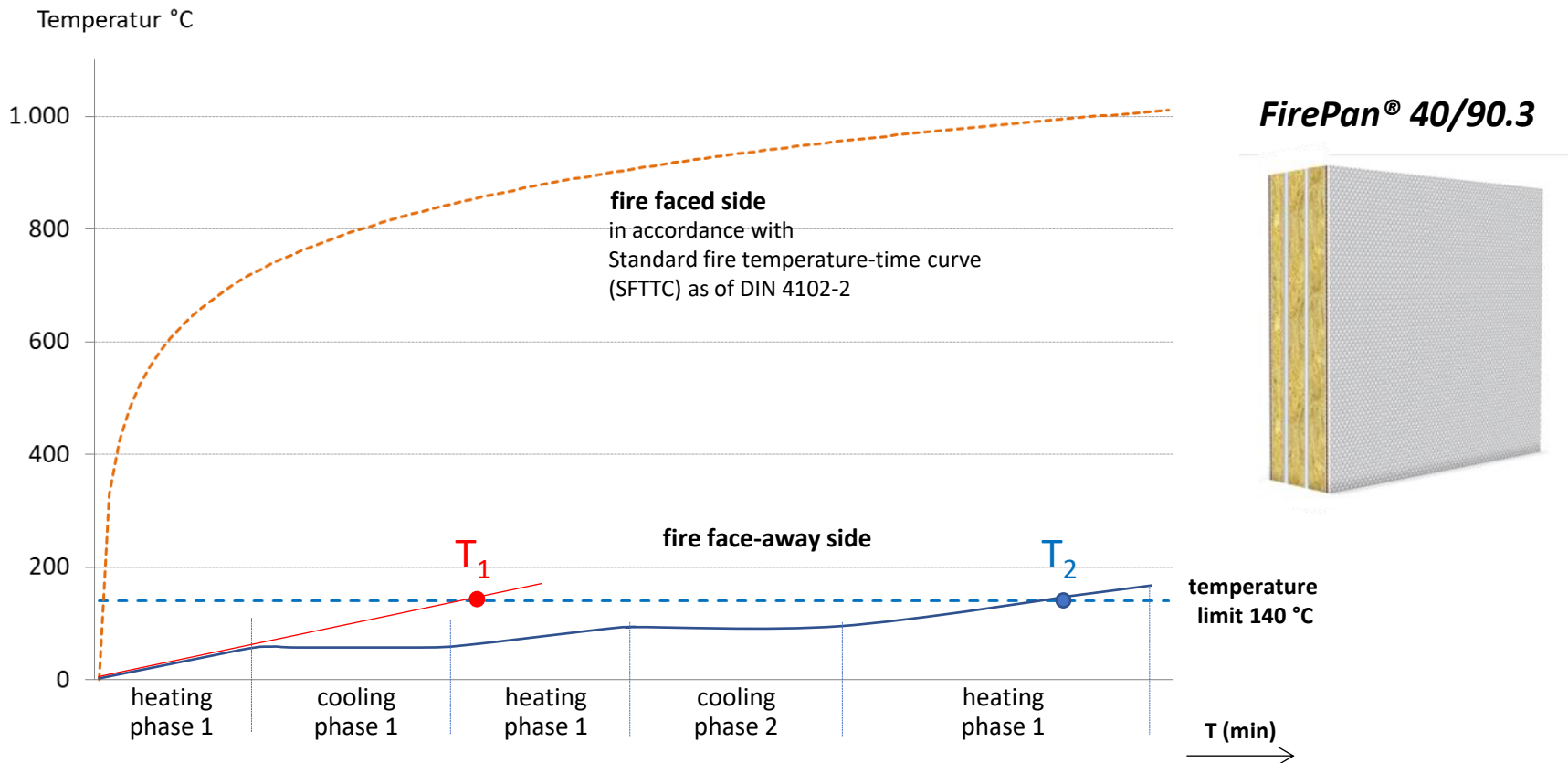


Source: <https://examples.yourdictionary.com/simple-endothermic-reaction-examples.html>

Modular panel system SeaPan

Partition walls, ceilings and floating floors solutions

Endothermic cooling effect on work



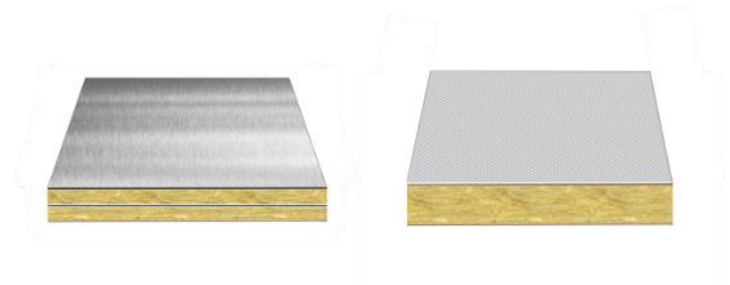
Modular panel system CBG SeaPan®

Partition walls, ceilings and floating floor solutions



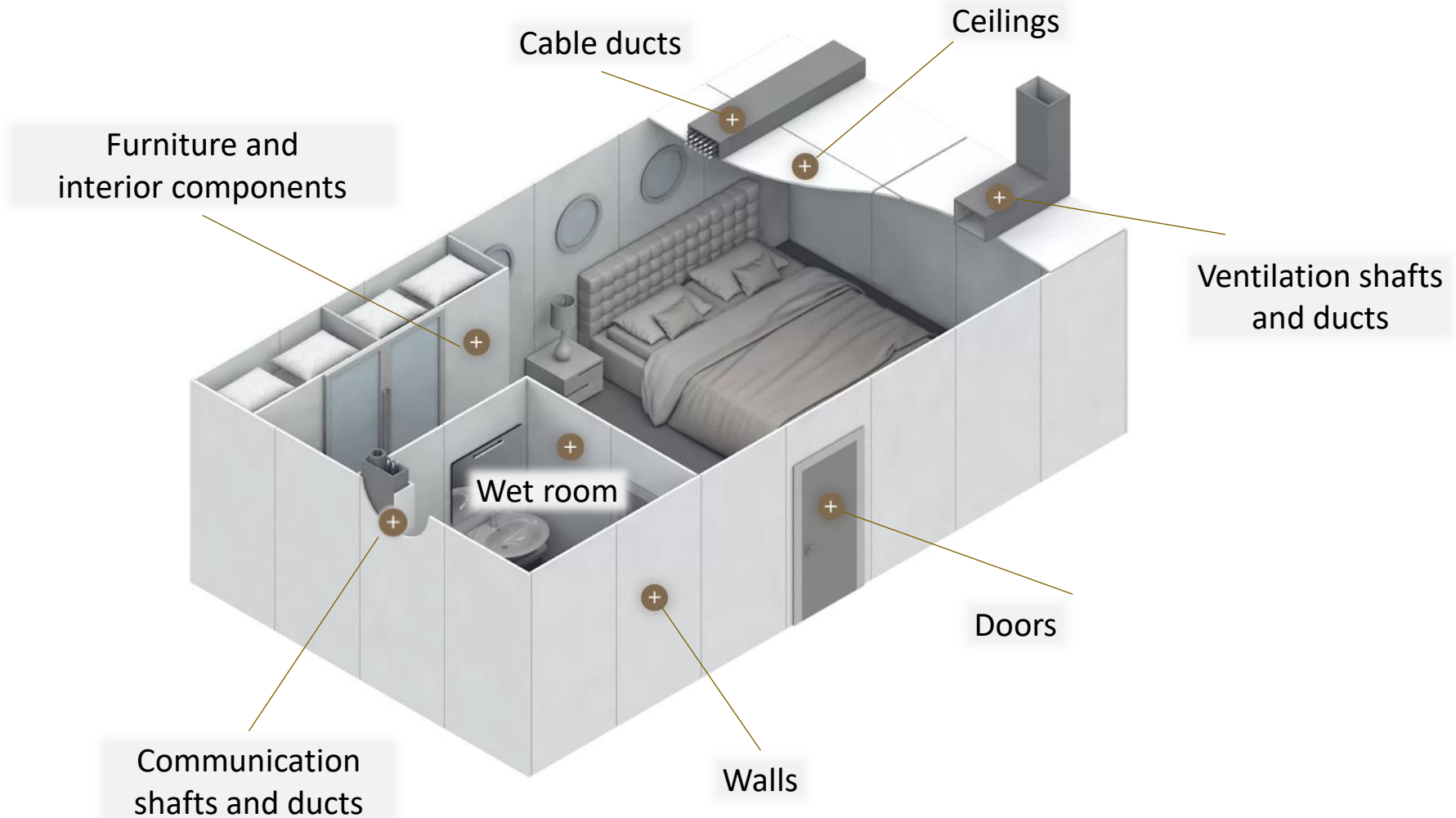
Fire-resistant, composite wall sandwich panels **CBG SeaPan®** based on basalt and ceramic matrix meet fully the requirements to materials to be used in ship building.

- **Non-combustibility**
- **High fire resistance**
- **High heat resistance** up to 1.300 °C
- **Ultra lightness**
- **No smoke emission** in case of fire
- **High heat-insulating** due to cooling effect
- **High sound insulation** properties up to 52 dB
- High resistance to acids and alkalis
- Resistance to UV radiation and vibration
- High constructive properties
- Handling with conventional cutting tools
- Easy and time-saving installation
- 100% natural, non-toxic and easy recyclable



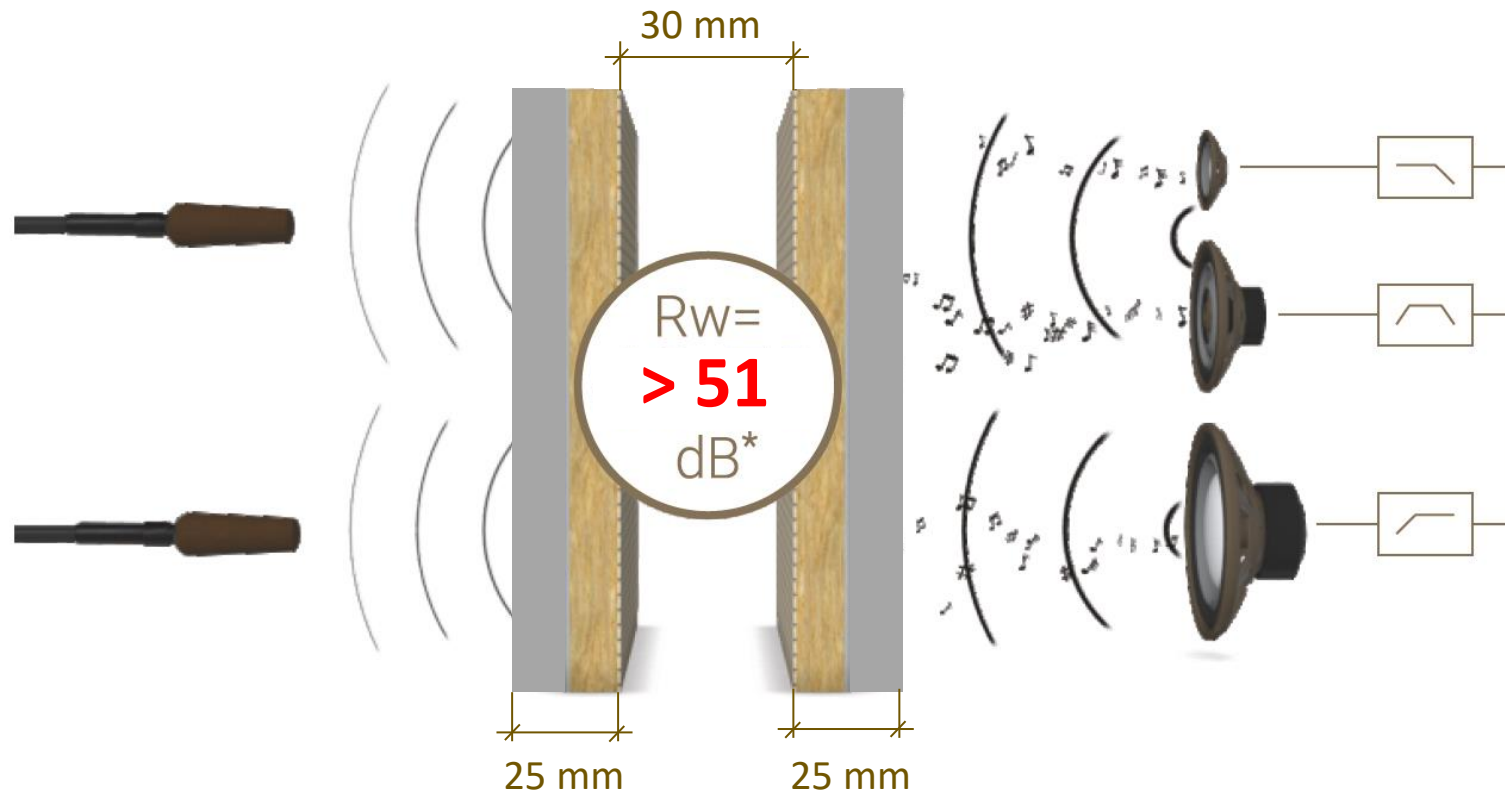
Possible Applications

Ships outfitting



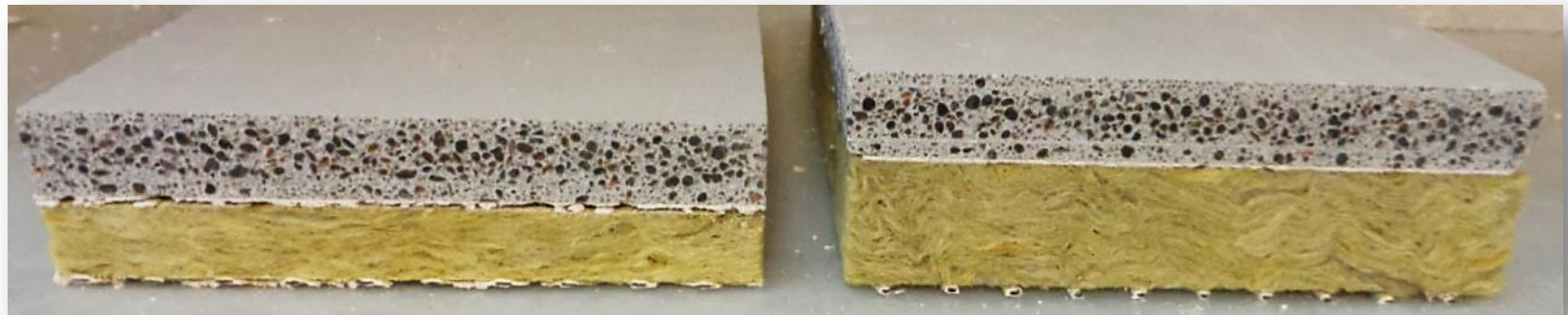
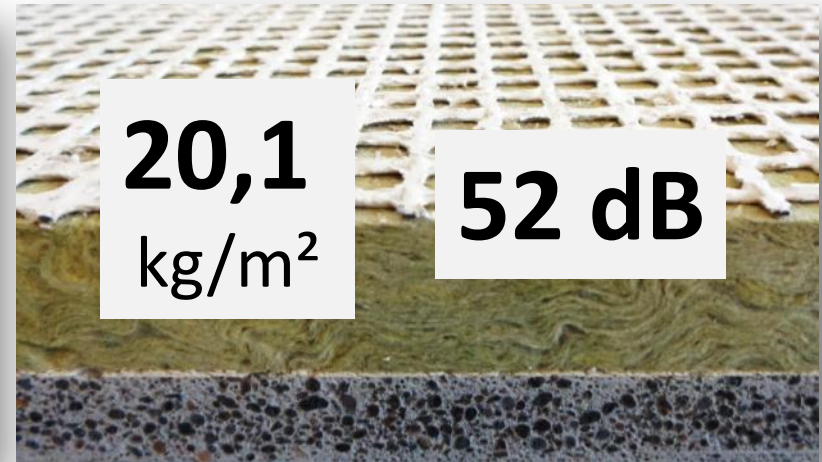
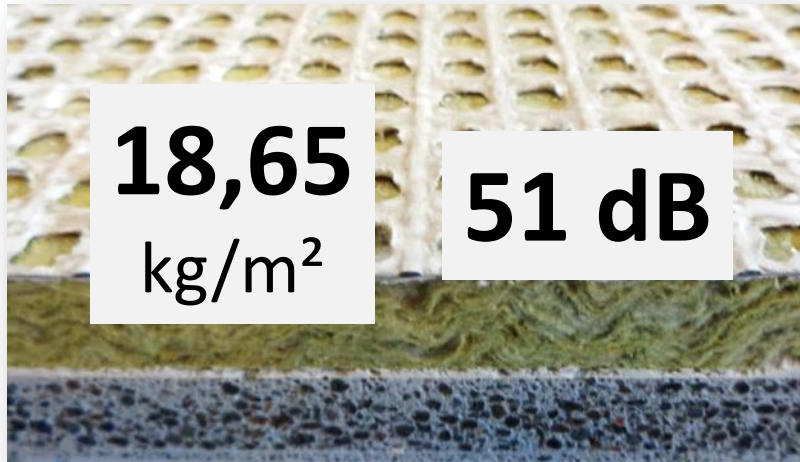
Product features

Sound insulation



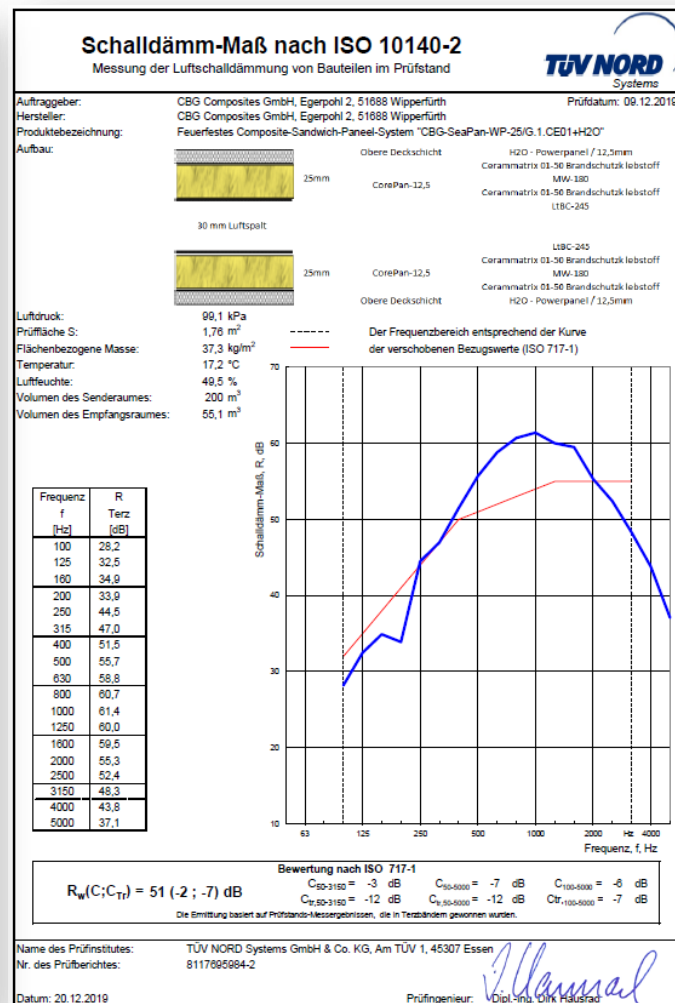
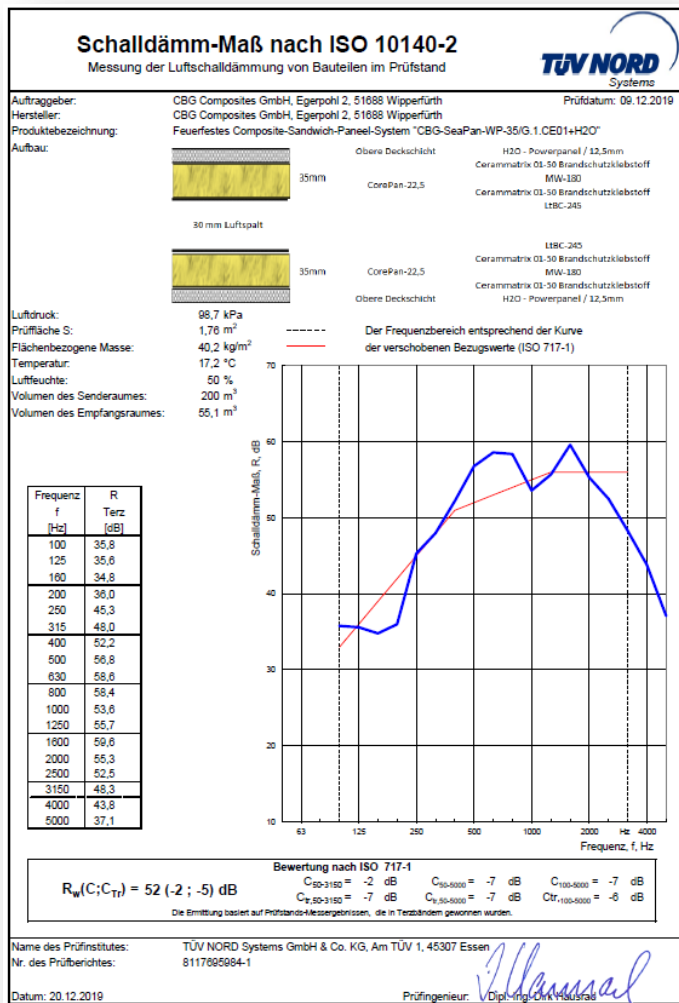
Product features

Sound insulation



Product features

Sound insulation



Product properties overview

SeaPan Family (extract)



Characteristics	SeaPan WP 15G	SeaPan WP 15/15	SeaPan WP 25/15	SeaPan WP 25 G	SeaPan WP 30/60	SeaPan DP 40-15	SeaPan FF 30/60	SeaPan SilencePan 25 G
Type of application	Wall partition panel	Wall partition panel	Wall partition panel	Wall partition panel	Wall partition panel	Ceiling panel	Floating floor panel	Wall partition panel
Surface weight, [kg/m ²] at max. moisture content of 4%,	5,25 ± 0,5	5,7 ± 0,5	7,8 ± 0,5	7,3 ± 0,5	12,4 ± 1,2	10,3 ± 0,5	12,5 ± 0,5	18,6 ± 0,5
Total thickness, [mm]	15 ± 0,5	15 ± 0,5	25 ± 0,5	25 ± 0,5	30 ± 0,5	40 ± 0,5	30 ± 0,5	25 ± 0,5
Sound insulation according to DIN EN ISO 10140-2 (Rw), [db]	43 (Cabin to Cabin)			45 (Cabin to Cabin)				51 (Cabin to Cabin)
Core material density, [kg / m ³]	170 ± 15%	170 ± 15%	170 ± 15%	170 ± 15%	400 ± 15%	170 ± 15%	420 ± 15%	170 ± 15%
Compression strength according to EN 826, [kPa]	100 ± 10	100 ± 10	100 ± 10	100 ± 10	100 ± 10	100 ± 10	100 ± 10	100 ± 10
Tensile according to en 1607, [kPa]	30 ± 5	30 ± 5	30 ± 5	30 ± 5	30 ± 5	30 ± 5	30 ± 5	30 ± 5
Melting point	>1.100°C	>1.100°C	>1.100°C	>1.100°C	>1.100°C	>1.100°C	>1.100°C	>1.100°C
Fire classification acc. to IMO 2010 FTP Code	B-15	B-15	A-30	B-15	A-60	B-15 A-30	A-60	B-15 ⁽¹⁾ A-30 ⁽²⁾
Inorganic Fraction [%]	ca. 99	ca. 99	ca. 99	ca. 99	ca. 99	ca. 99	ca. 99	ca. 99
Width, trimmed, max., [mm]	1.200 ± 1	1.200 ± 1	1.200 ± 1	1.200 ± 1	1.200 ± 1	1.200 ± 1	1.200 ± 1	1.200 ± 1
Length, trimmed, max., [mm]	bis 3.030 ± 2	bis 3.030 ± 2	bis 3.030 ± 2	bis 3.030 ± 2	bis 3.030 ± 2	bis 3.030 ± 2	bis 3.030 ± 2	bis 3.000 ± 2

* - Listed data can be modified

Saving of weight up to 1,5 – 2 times in comparison with conventional materials!

Product features

Connection and modular elements



Product features

Flexibility



Areas of applications and markets

On water and on land



- Walls, Partitions and Ceilings
- Doors and gates
- Fire protection barriers
- Fire protection doors and gates
- IT- and Server rooms
- Data security rooms
- Soundproof walls and rooms
- **Customized Developments**



We are open for co-operation

and will be glad to welcome you



CBG Composites GmbH continuously expands and deepens its ties with partners from different countries in all areas of its activities. Research and testing centers and laboratories, suppliers of raw materials and components, certification centers, sales partners, engineering offices, companies that use our products for their products are only a part of the spectrum of companies and organizations in various fields that work with us both on a one-off and permanent basis.

We are open to building and expanding relationships with anyone on a mutually beneficial basis.

Thank you for your attention!

A photograph showing various CBG products: a large rectangular panel with a grid pattern, a white bucket labeled 'Cerammatix-Carb', a roll of brown material, and several smaller samples of different materials. The background is dark with orange and red flames, suggesting fire resistance.

NEW GENERATION

Fire-resistant, innovative heat- and sound-insulating basalt based products for use in building construction, shipbuilding and engineering



Fire protection classes
B-15, A-30, A-60 (IMO 2010 FTPC3)
F30, F60, F90 (DIN EN 13501, DIN 4102)

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