



**TERMOGRADNJE
INŽENIRING** d.o.o.

HIGHTEMPERATURETECHNOLOGY

Environmentally Friendly
Client Orientated
Individual
Sustainable
Adaptable

www.termogradnje.si

PRODUCTS

Woven, braided, knitted Textile technical Products

- Glass fiber
- Alcaline Earth Dilics fiber (AES)
- Refractory Ceramic fiber (ASW/RCF)
- Aramid/Kevlar fiber
- Carbon fiber
- Basalt fiber

- Ropes
- Packings
- Tapes, Laddertapes
- Sleeveings, Tubes
- Tehnical fabrics
- Ready-made to messure articles

With and without adhesive,
Colored, Reinforced,
Coated, impregnated,
Tailored, cut to lenght and width.

Tehnical »non Woven« Products Paper, Felts, Blankets

- Glass fiber
- Alcaline Earth Dilics fiber (AES)
- Refractory Ceramic fiber (ASW/RCF)
- Muliterfiber
- Carbonfaster (oxyd. PAN)
- Micanite-combiproducs

- Die cut parts
- Gasket
- Back up insulation
- Modules, heatblocks (AES, RCF)

With and without adhesive,
Coated, Colored.

Panels, Boards, Millboards, machined parts

- Glass fiber
- Alcaline Earth Dilics fiber (AES)
- Refractory Ceramic fiber (ASW/RCF)
- Polycristaline fiber (Zircon)
- Mulitefiber
- Vermiculite
- Calcium silicate

- Die cut parts, Made to messure
- Gaskets
- Back to insulation
- Doorinstalation, Covers
- Heatshields
- Slagseals, Construction parts.

Pressed and vacuumformed Parts

- Highpercentage Silicafiber
- Alcaline Earth Dilics fiber (AES)
- Refractory Ceramic fiber (ASW/RCF)
- Polycristaline fiber (Zircon)
- Vermiculite
- Highpercentage Silicafiber

- Insulation feeders
- Insulation parts after drawing
- Boilerinsulation,
- Heatshirds, covers
- Slag seals, construction parts
- Tubes, half shells

Vermiculite 1100

Calciumsilicate 100 and 1100

Mica Product

WOVEN, BRAIDED, KNITTED TEXTILE TECHNICAL PRODUCT

Cords, packings, ropes: Seals (oven, boiler doors), access panels, kiln car packings, flange sealing/gaskets, Flap seals, soot-blowers ...



Tapes: as sealing between flanges, for separation between different materials, pipe and tube insulation (overlapping), shock/contact protection.



Sleeves, hoses: insulation and protection over exhaustpipes or hydraulic lines, welding protection, general insulation. Often coated with silicone (self-extinguishing properties in contact with melt).



WOVEN TEXTILE TECHNICAL PRODUCT, READY-MADE ARTICLES

Technical Fabrics:

made of Glass-, Alcaline Earth Silica-, RCF-, Aramid-, Kevlar- and Carbonfiber.



With various coatings, providing:

- coatings for improved cut resistance,
- coatings for increased thermal resistance,
- coatings for improved reflective properties,
- Silicone and plastic and PTFE coatings for improved sealing properties.

Ready-made, tailoring:

The different textiles we process at our location. Manufacturing end-products such as curtains, lock cloths, insulating pads, welding blankets, hose insulation, enclosures.

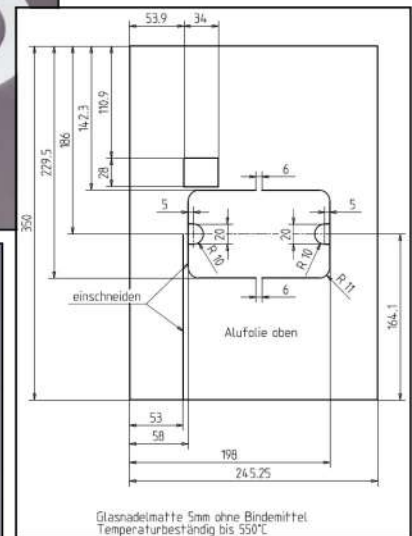
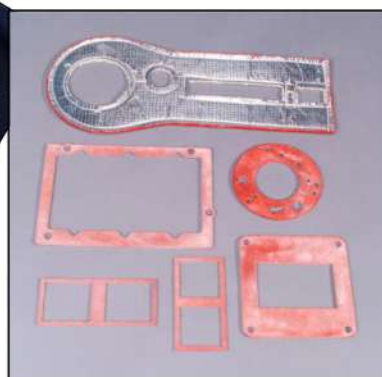


Papiere und Filze:


We perform the full range of technical felts and papers from Glass, Alkaline Earth Silica (AES), Refractory Ceramic fiber (ASW/RCF), as well as CARBON FIBRE and Aramid felts.




We produce on modern punching machines and plotting systems, offering the possibility to produce all geometries right after your drawings and design.



BLANKETS

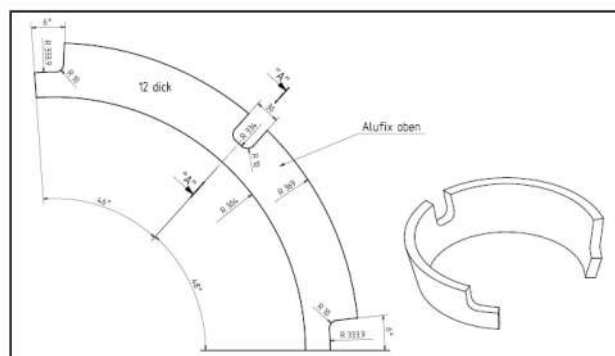
<p>Ceramicfiber: (ASW/RCF)</p>	<p>Standard denities 64, 96, 128, 160 kg/m³ Thickness 6(6.4), 13(12.7), 25(25.4), 38, und 50(50.4) mm</p> <p>Classification temperatures 1260 °C, 1400 °C, 1600 °C</p>	
<p>Alternative in biosoluble Quality</p>		
<p>AES Wool</p>	<p>Thickness and densities as above Classification temperature 1100 °C, 1200 °C, 1300 °C</p>	

BULK FIBER

<p>Ceramicfiber: fiber (ASW/RCF)</p>	<p>BULK-Material, spun and blown packed in sackets (à 25 kg)</p> <p>Classification temperatures 1260 °C, 1400 °C, 1600 °C</p>	
<p>Alternative in biosoluble Quality</p>		
<p>AES Wool</p>	<p>Thickness and densities as above Classification temperature 1100 °C, 1200 °C, 1300 °C</p>	

BULK/wool is used for insulating applications which are difficult to access (cavities to be stuffed), often used during maintenance for minor repairs.

DIE CUT PARTS AND MANUFACTURING OF SPECIAL SOLUTIONS



Cordmodules consist of several mat strips which are pressed together to form a block and are held by an internal cord. The cord burns off at the first heating, setting free the force of pre-compression. The so released force will then compensate the shrinkage, that occurs at high temperatures.

The Cordmodules are fixed either with comb-anchors (mechanical) or with refractory mortar on ceilings, walls and floors. They offer – compared to the conventional market products (modules with gauze, mesh or tightening straps and cartons or boards) – the advantage, that no further rework must be carried out.

The modules have an excellent resistance to temperature changes. The thermal and physical properties do not change by the wetting of water and steam after drying.



APPLICATION EXAMPLES

Petrochemical:

- Steam cracking plant
- Primary reformers
- Distillation furnaces
- Boiler

Ceramic:

- Tunnel kilns (tiles and bricks)
- (sanitaryware)
- (porcelain)
- Intermittent kilns

Metallurgy:

- Reheat furnaces
- Heat treatment furnaces
- Forge furnaces
- Ladle covers
- Ladle pre-heaters
- Soaking pit covers

Characteristics:

- Excellent thermal and physical stability
- Low heat storage
- Faster temperature cycling
- Energy savings
- Increased productivity
- Lower installation cost
- Easier repairs



ANCHORS FOR MOUNTING CORDMODULES



WERKSTOFF	GEFÜGE	ZUNDERTEMPERATUR IN DER LUFT	CR %	NI %	TYPISCHE EIGENSCHAFTEN
1.4301	Austenit	900°C	17,0 – 20,0	8,5 – 10,0	Geringe Beständigkeit gegenüber SO ₂ /SO ₃ ; Nach Schweißen verminderte interkristalline Korrosionsbeständigkeit.
1.4828		1.000°C	19,0 - 21,0	11,0 – 13,0	Geringe Beständigkeit gegenüber SO ₂ /SO ₃ ; Geringe Versprödungsgefahr. Ohne Wärmebehandlung schweißbar.
1.4841	Austenit	1.150°C	24,0 – 26,0	19,0 – 22,0	Geringe Beständigkeit gegenüber SO ₂ /SO ₃ ; hohe Zeitstandfestigkeiten; gute Beständigkeit gegenüber N ₂ bei niedrigem Anteil von O ₂ Versprödungsgefahr. Ohne Wärmebehandlung schweißbar.
Inconel 601	Austenit	1200°C	21,0 – 25,0	58,0 – 63,0	Gute Beständigkeit gegenüber SO ₂ /SO ₃ ; hohe Zeitstandfestigkeiten; gute Beständigkeit gegenüber N ₂ bei niedrigem Anteil von O ₂ Versprödungsgefahr. Ohne Wärmebehandlung schweißbar.

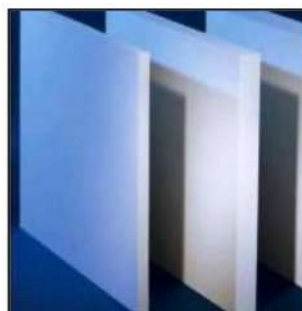
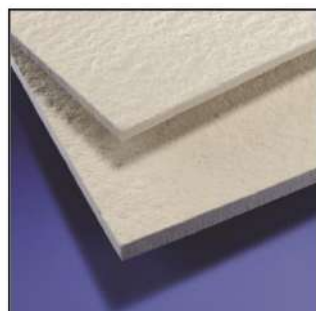
(Other materials if necessary possible)

We offers a wide range of board and panel-material for insulation and back up insulation.

- Vermiculite, density 375 - 1200 kg / m³, thicknesses 10 - 100 mm;
- Calciumsilicaboards, density 230 kg/m³, thicknesses of 25 - 100 mm;
- Microporous insulation panels thicknesses of 10 - 50 mm, including laminates.



- Ceramicfiber boards (ASW/RCF), density 300 - 400 kg/m³, thickness 3-50 mm;
- Alcaline Earth Silica fiber boards (AES), density 270 - 360 kg/m³, thickness 3-50 mm;
- Millboards, ASW/RCF and AES Qualities, density about 1000 kg/m³, thickness 1-10 mm).



Wärmeleitfähigkeit in W/mK

	Mikroporöse Platte *	CaSi Leichtplatte	Board LD	Felt HD	Board Zk
Temperatur °C	ca. 270 kg/m ³	ca. 230 kg/m ³	320 kg/m ³	250 +/- 50 kg/m ³	390 kg/m ³
200	0,02	0,07			
400	0,024	0,1			
600	0,031	0,14	0,09	0,11	0,13
800	0,04	0,17	0,13	0,14	0,16
1000			0,17	0,19	0,19

FORMTEILE (MECHANISCHE FERTIGUNG)

We produce on the latest CNC manufacturing Lines, realizing finished parts according to customer drawings.

By 5-axis machining options the most complex shapes are possible.

Materials:

- Vermiculite (375 - 1200 kg/m³)
- Calciumsilicate (ca. 230 kg/m³)
- Microporous insulation panels
- RCF/ASW Fiber 300 - 400 kg/m³
- AES Fiber 270 - 360 kg/m³
- High Silica Content fiber 200 - 300 kg/m³
- Millboards 1000 kg/m³



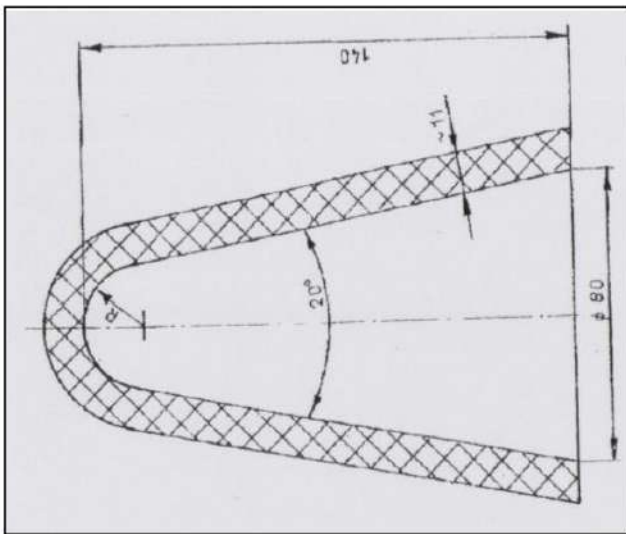
The ready-shaped parts are used in:

- Back-up insulation of combustion chambers
- Door and cover insulation for boilers (loading door, the ash drawer, inspection openings ...)
- Direct linings of combustion chambers in stoves and fireplaces
- Baffles, Heat shields, Deflectors
- Rear insulation and furnace construction (for stove fitters), or basic furnace lining
- Back-up insulation in industrial furnaces
- Bottom insulation in hot steam cleaners
- Access Panels (fire doors)
- In structural fire protection (channel insulation, fire dampers)



Apart from the mechanical treatment and processing of sheet materials to finished products, we also give shape to the materials by pressing method (vermiculite) and a wet-process (vacuum forming offibrous materials).

Again, complex shaping is possible and parts can be manufactured matching your demand.



GLUE

SILPlast HT320 (black):

- Hightemperature-Silicone, one-component, cures neutral;
- Max temperature up to 350 °C, continuously 320 °C;
- storage 12 month;
- packing: 12 pcs./carton.



SILPlast AC270R (red):

- Hightemperature-Silicone acid, two-component;
- Max temperature up to 300 °C, continuously 270 °C;
- storage 12 month;
- packing: 12 pcs./carton.

SILPlast 1300 BK MO

- Hightemperature Glue;
- Gluing of rockwool, ceramic fiber, calcium silicate, or plaster on galvanized sheet, steel or concrete;
- Also used for sealing chimneys and heating systems.
- Shorttime 1500 °C, continuously 1300 °C;
- Incombustible, A1 classified;
- Storage 12 month ;
- Packing: 12 pcs./carton.
- The product is also packed in pails;
- Standard: 25 kg.
- Colour: white and black.



Highthermfix 1100

- Hightemperature Glue;
- Gluing of rockwool, ceramic fiber, calcium silicate, or plaster on galvanized sheet, steel or concrete.
- Colour: sand;
- Continuously max 1100 °C;
- Incombustible, A1 classified.
- Tubes of 20 ml;
- Cartridges á 310 ml;
- Pails of 5 / 15/ 25 kg.





CONTACT US

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