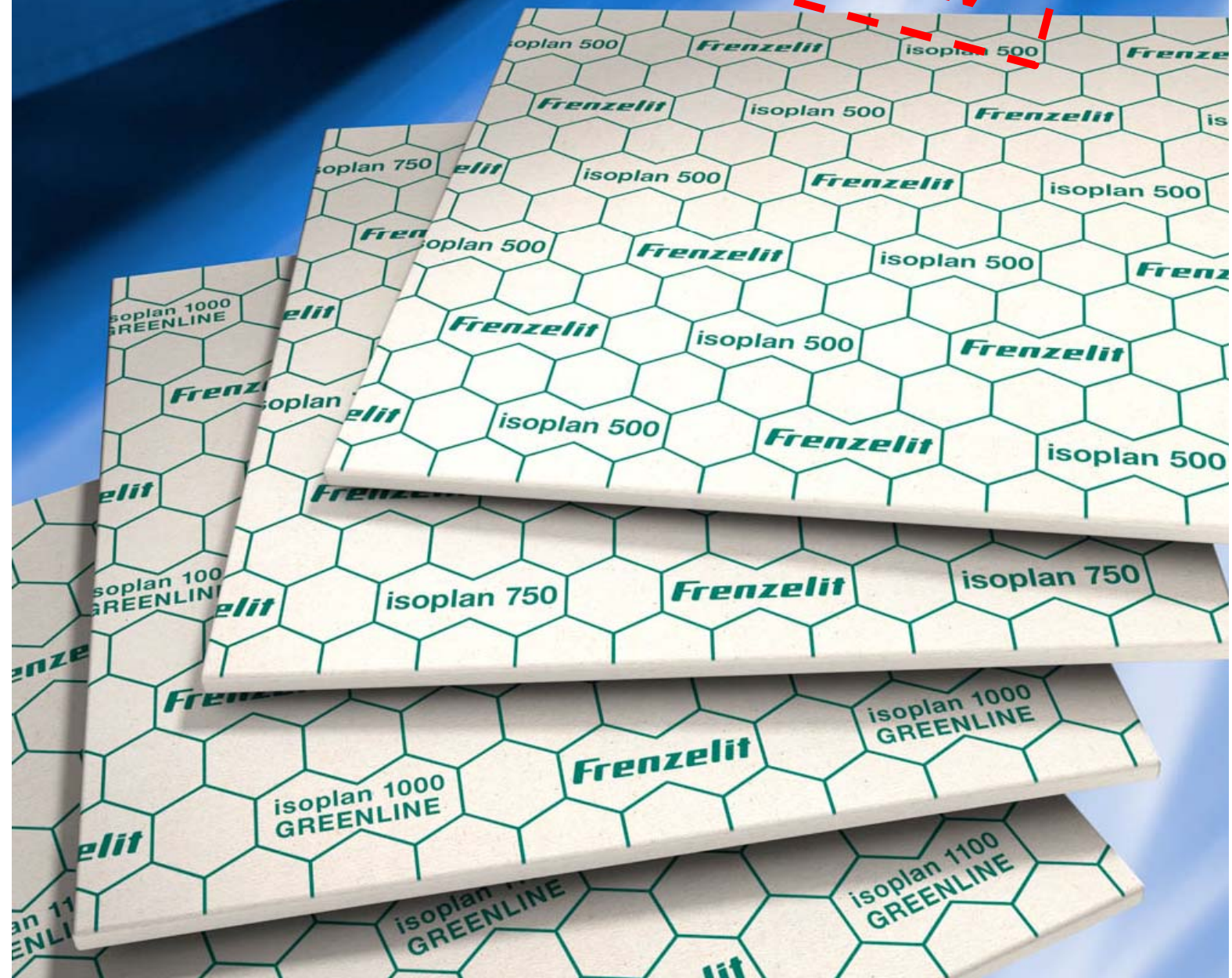


isoplan® GREENLINE

Innovative, environmentally sound insulation materials.

new



GASKETS

TECHNICAL TEXTILES

EXPANSION JOINTS

INSULATION

NEW MATERIALS

 **Frenzelit**

creating hightech solutions

isoplan® – insulation materials for exacting requirements

isoplan® is used as insulation board in temperatures ranging up to 1,100 °C ⁽¹⁾ and as gaskets for inert gases up to an internal pressure level of 500 mbar.

isoplan® products are based on special, biosoluble mineral fibers and/or biosoluble high-temperature Alkaline Earth Silicate (AES) wools. In combination with appropriate filling and bonding agents, they guarantee resistance to consistently high temperatures.

isoplan® – processing advantages

isoplan® has special advantages thanks to its easy and fast processability using standard cutting, sawing and punching equipment. The extremely flexible material combination means that thin isoplan® can be adapted to existing geometries both dry and in a moistened state, even at thicknesses of up to 10 mm.

isoplan® – application advantages

The coordinated raw material blend and the defined process technology lead to extremely low thermal conductivity, with very good, consistent heat insulation properties. isoplan® materials are also suitable for acoustic soundproofing.

High application temperature limits and low thermal conductivity levels enable isoplan® to be deployed as an insulation material in many different application areas. isoplan® is used for low-pressure gaskets as well. The applications range in this context from maintenance, repair and upkeep to OEMs: steel industry, melting and pouring equipment, industrial furnaces and boiler manufacturing, chimney flaps, fire protection doors, heating and drying equipment, machine and equipment manufacturing, electrical equipment and the glass industry.

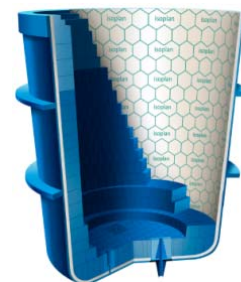


isoplan® 500 GREENLINE

Application temperature limit: 1,050 °C

The problem solver in the isoplan® product family with very low emission when heated for the first time (low emission) and with minimised strength loss in the 300 – 500°C range.

Material combination: biosoluble mineral fibre and active functional filling agents.



isoplan® 750 GREENLINE

Application temperature limit: 750 °C

Environmentally sound standard insulation material.

Material combination: biosoluble mineral fiber and filling agents



isoplan® 1000 GREENLINE

Application temperature limit: 1,000 °C

Environmentally sound insulation at high temperatures.

Material combination: biosoluble mineral fiber and temperature-resistant filling agents

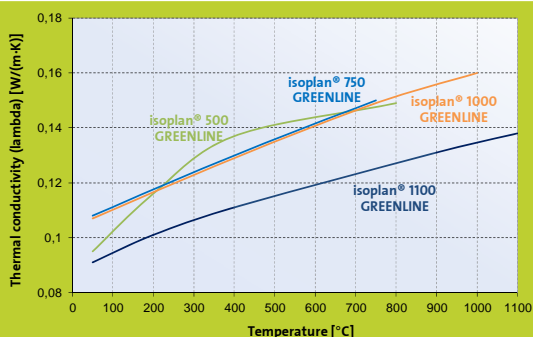


isoplan® 1100 GREENLINE

Application temperature limit: 1,100 °C

Environmentally sound insulation at very high temperatures.

Material combination: biosoluble high-temperature AES-Wool and filling agents that withstand high temperatures.



Thermal conductivity – the key criterion

Alongside high temperature resistance, thermal conductivity is the crucial criterion for the assessment of an insulation material. It indicates how much heat flows through a material between the surfaces.

The lower the level, the higher the insulation capacity of the material. In insulation material applications, surface pressure levels of 10 N/mm² should not be exceeded.

Contact us if you have any questions about specification of how thick the insulation material needs to be.

Material data

			isoplan® 500 GREENLINE	isoplan® 750 GREENLINE	isoplan® 1000 GREENLINE	isoplan® 1100 GREENLINE
REACH-listed SVHC fiber content ⁽²⁾			none	none	none	none
Application temperature limit			1,050 °C	750 °C	1,000 °C	1,100 °C
Identification colour			white	white	white	white
Thickness tolerance			± 10 %	± 10 %	± 10 %	± 10 %
Physical properties	Test standards	Unit	Value*	Value*	Value*	Value*
Sample thickness 5.0 mm						
Density	DIN 28 090-2	[g/cm ³]	0.90	0.94	0.94	0.91
Tensile strength	DIN 52 910					
Longitudinal		[N/mm ²]	9.0	5.7	5.7	6.6
Transverse		[N/mm ²]	4.0	2.9	2.8	3.5
Compressibility	ASTM F 36 K	[%]	15.0	6.9	7.8	9.1
Recovery	ASTM F 36 K	[%]	40.0	52.0	56.0	52.5
Loss on ignition	DIN 52 911	[%]	16.0	16.5	16.2	16.8
Thickness shrinkage	6 h / 800 °C	[%]	1.2	1.6	1.5	1.8
	6 h / 1,000 °C	[%]	7.0	---	7.0	---
	6 h / 1,100 °C	[%]	---	---	---	11.5
Area shrinkage						
Longitudinal/trans.	6 h / 800 °C	[%]	1.4	0.9	0.8	0.7
Longitudinal/trans.	6 h / 1,000 °C	[%]	3.0	---	1.9	---
Longitudinal/trans.	6 h / 1,100 °C	[%]	---	---	---	3.5
Thermal conductivity (400°C avge. temp.)		[W/(m·K)]	0.14	0.13	0.13	0.11
* Modal value (typical value)						
Product data						
Dimensions [mm]			1,000 x 1,000	1,000 x 1,000	1,000 x 1,000	1,000 x 1,000
Thicknesses [mm]			2.0 / 5.0	2.0 / 3.0 5.0 / 8.0 / 10.0	2.0 / 3.0 5.0 / 8.0 / 10.0	2.0 / 3.0 5.0 / 8.0 / 10.0
Further dimensions and thicknesses are available on request.						

Information about product use:

(1) The organic content escapes causing a loss of strength in the 300°C to 500°C temperature range. The discolouration of the material associated with this disappears at higher temperatures and a sintering process takes place which guarantees the consistent strength of the material. Encapsulation of the material is advisable in the case of insulation applications in self-supporting or vibrating systems.

(2) isoplan® GREENLINE products comply with REACH and do not contain any SVHC-listed fibres. isoplan® GREENLINE products are an excellent alternative to products that are based on ceramic fibres.

If you have any application engineering questions, we will be delighted to answer them. Just contact:

gaskets@frenzelit.de

Good for people and the environment.

From research and development to our manufacturing operations and use of the product by the customer: quality assurance and a responsible approach to resources and the environment are a firm commitment we observe in everything we do throughout the life cycle of all products.

The Frenzelit gasket division has obtained certification that the company complies with the requirements of ISO 9001, ISO 14001 and ISO 50001. This means complete transparency in all areas and therefore provides a high degree of security – for the benefit of our employees, the environment and our customers.

Quality management

ISO 9001

Environmental management








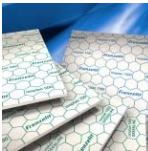
ISO 14001

Energy management

ISO 50001



Engineered by Frenzelit: Gasket materials / fibre-reinforced compounds

novapress®	novatec®	novaflon®	novaphit®	novamica®	novaform® Soft Compounds	novaplan®	isoplan®
							
200°C	250°C	260°C	550°C	1000°C	250°C	1000°C	1100°C
-100°C	-100°C	-200°C	-200°C	-200°C	-100°C	-100°C	-100°C
Elastomer-bonded fibre compound gaskets	Fibre-reinforced graphite gaskets with Kevlar®	Modified and filled PTFE gaskets	Expanded graphite with/without stainless steel expanded metal insert	Phlogopite mica with/without stainless steel expanded metal insert	Technical films for insulation, sealing, acoustic applications etc.	Soft layer/insert for heat shield applications and cylinder head gaskets	High-temperature insulation materials

Kevlar® is a trademark registered by DuPont

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