

WDS[®] Lambdaflex[®] Super

Characteristics

WDS[®] Lambdaflex[®] Super is a microporous insulation material with an extremely low coefficient of thermal conductivity, i.e. with very good insulating properties. WDS[®] Lambdaflex[®] Super consists of inorganic silicates. The main constituent is fumed silica, the other components are opacifiers for minimizing infrared radiation.

WDS[®] Lambdaflex[®] Super (core material) is not flammable and meets the requirements acc. to DIN ISO 4102 for fire protection class A1.

WDS[®] Lambdaflex[®] Super is heat sealed in a laminated aluminum foil system.

It can be used up to a maximum application temperature of 1100 °C.

Application

Tried and tested applications for WDS[®] Lambdaflex[®] Super include back-up insulation in the steel and non-ferrous metals industry.

In these applications, WDS[®] Lambdaflex[®] Super fulfills several functions, such as:

- Precisely controlled energy emission
- Reduction of weight and volume
- Increase of heat retention
- Increased effective volume

WDS[®] Lambdaflex[®] Super is also successfully used as insulation material in the following areas:

- Heat treatment systems for metals
- Heat treatment systems for glass
- Fire protection equipment
- Electronic devices
- Measurement equipment
- Plant construction parts
- Parts in the automotive industry
- Chimneys, pipes and diesel exhaust systems

Form of delivery

1. Standard sizes:

- 500 mm * 250 mm * X
- 500 mm * 500 mm * X
- 1000 mm * 500 mm * X

2. Standard thicknesses (X):

- 3 mm, 5 mm, 7 mm, 10 mm
- Tolerances acc. to DIN ISO 2768
→ Tolerances class "c", coarse

3. Complex geometries and special formats available on request



Restrictions on Applications

WDS[®] Lambdaflex[®] Super is sensitive to all liquids that can wet it, such as water, oil, petroleum spirit, since they can destroy the nanoporous structure.

For the aforementioned reasons, care should be taken not to damage the cover film before or during installation.

Damage or cut edges must therefore be protected with an Aluminum adhesive tape.

Shelf life

WDS[®] Lambdaflex[®] Super, if properly stored, has an unlimited shelf life.

WDS[®] Lambdaflex[®] Super must be handled and stored in dry conditions.

WDS[®] Lambdaflex[®] Super is resistant to diffusion by atmospheric humidity (water vapor).

Composition

Silicon dioxide	SiO ₂	approx. 50 %
Zirconium silicate	ZrSiO ₄	approx. 45 %
Others		approx. 5 %

Electrical resistance

Panel unhardened	
Stored under dry conditions	> 2000 MO

Thermal shock resistance

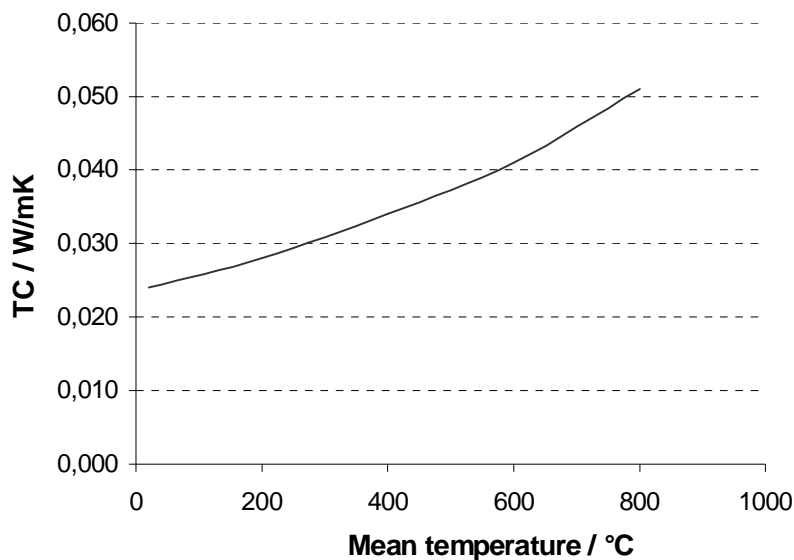
WDS[®] Lambdaflex[®] Super is insensitive to high and low temperature thermal shocks.

Product data

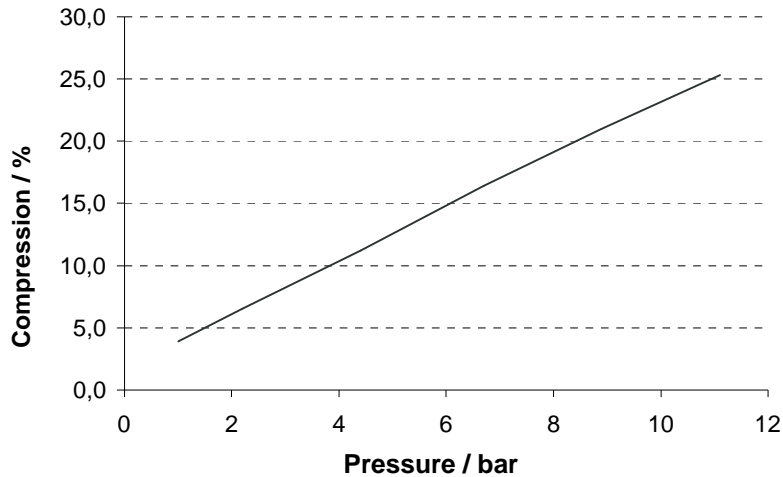
Properties	Comments	Standards	Units	Values
Color	without film White			Silver
Bulk density			kg / m ³	300-450
Thermal conductivity	At mean temp. of 20 °C and approx. 350 kg/m ³	DIN 51046	W / mK	≤ 0.024
Heat resistance	Core material		°C	1100
Low-temp. compression strength		DIN 51067 DIN 53421	N / mm ²	1.45
Refractoriness under load	Load 0.05 N / mm ²	ASTM C 832		
	200 °C		%	- 0.43
	400 °C		%	- 0.60
	600 °C		%	- 0.83
	800 °C		%	- 1.93
Shrinkage	1050 °C / 12 h, temperature applied at one side		%	0.3
Linear shrinkage / long term	Temperature applied at all sides			
	950 °C		%	1.3
	1000 °C		%	2.6
	1050 °C		%	6.9
Compression (at 1 bar)			%	3.9
Specific heat capacity	RT up to 800 °C		KJ / kgK	0.8
Thermal conductivity		DIN 51046		
	20 °C		W / mK	0.024
	200 °C		W / mK	0.028
	400 °C		W / mK	0.034
	600 °C		W / mK	0.041
	800 °C		W / mK	0.051

*The above data are only intended as a guide and should not be used in preparing specifications

Thermal conductivity as a function of mean temperature (DIN 52612)



Compression behavior



Safety directions

WDS[®] Lambdaflex[®] Super is not a hazardous material as defined in EU directive 91/155/EEC.

The fibers used for mechanical reinforcement of WDS[®] Lambdaflex[®] Super are not respirable as defined by WHO. Please also observe our material safety data sheet. WDS[®] Lambdaflex[®] Super does not liberate hazardous decomposition products and, as far as is known at present, does not cause any problems to human health.

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the product for a particular purpose.



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