

Data sheet

WDS® Flexible Contour

ENGLISH

Metric information - Page 2
Imperial information - Page 3

Description

WDS® Flexible Contour is a microporous insulation material with an extremely low coefficient of thermal conductivity, i.e. with very good insulating properties.

WDS® Flexible Contour consists of inorganic silicates. The main constituent is fumed silica, the other components are opacifiers for minimizing infrared radiation and reinforcing glass filaments.

WDS® Flexible Contour (core material) is not flammable and meets the requirements of IMO FTPC part I and DIN EN 13501-1, part I class A1. WDS® Flexible Contour is heat sealed in a close-fitting 15 µm PE shrink film.

Application

WDS® Flexible Contour was specially developed for applications in the automotive industry. In this case, specifically for automotive exhaust systems. The significant reduction of the required insulation thicknesses with WDS® Flexible Contour leads to highly efficient weight and space-saving thermal insulation.

In this function, WDS® Flexible Contour fulfills several functions, such as:

- Elimination of secondary insulation, such as heat shields
- Selective thermal management
- Drastic reduction in surface temperature
- Reduction of weight and insulation volume
- Increase of heat retention
- Increased effective volume in engine compartment

Typical applications

WDS® Flexible Contour is already successfully used as insulation material in the following areas:

- Muffler/Silencer within exhaust systems
- Exhaust Manifold
- Cone Insulation
- Pipe Insulation

Restrictions on applications

WDS® Flexible Contour is sensitive to all liquids that can wet it, such as water, oil, petroleum spirit, since they can destroy the Nanoporous Structure. WDS® Flexible Contour must be handled and stored in dry conditions.

Shelf life

- WDS® Flexible Contour, has unlimited shelf life if it stored properly
- WDS® Flexible Contour must be handled and stored in dry conditions.

Safety directions

WDS® Flexible Contour is not a hazardous substance according to the EU Directive 2006/1907/EEC. The fibers used for mechanical reinforcement have a diameter of > 5 µm; therefore they are not respirable (in accordance to the WHO definition). WDS® Flexible Contour does not use any dangerous decomposition substances and according to current knowledge, it does not cause any problems to human health or the environment.

Composition

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

Thermal shock resistance

WDS® Flexible Contour is insensitive to high and low temperature thermal shocks.



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Metric information

Physical properties	
Colour	White
Nominal density kg/m ³	260 - 520
Classification temperature °C	1100
Compressive strength MPa (density = 350kg/m ³) ASTM C165 @RT	0.275
Linear shrinkage % @1000°C exposed on single side AAW 906-00	0.4
Specific heat capacity of raw panel kJ/kg·K DIN 51007 @700°C	0.958

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

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Imperial information

Physical properties	
Colour	White
Nominal density pcf	16.3 - 32.5 lb/ft ³
Classification temperature °F	2012
Compressive strength density pcf = 21.9 lb/ft ³ ASTM C165 @68°F	39.89
Specific heat capacity of raw panel kJ/kg-K DIN 51007 @1292°F	0.958
Linear shrinkage % @1000°C exposed on single side AAW 906-00	0.4

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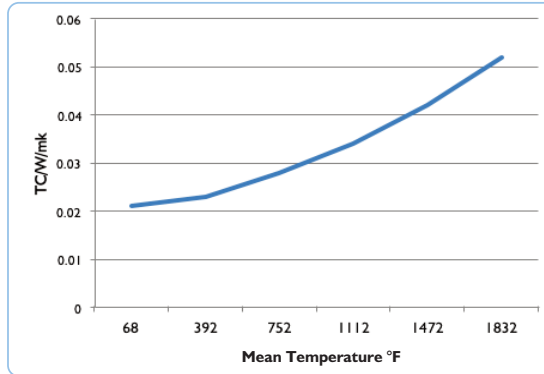
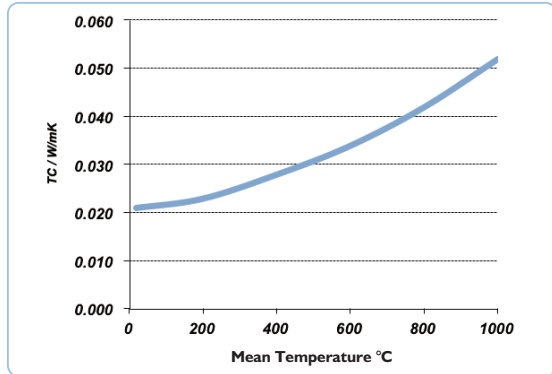
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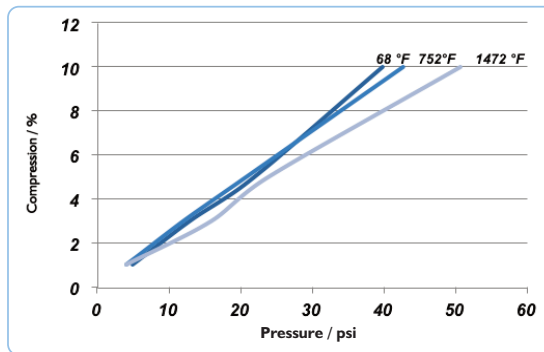
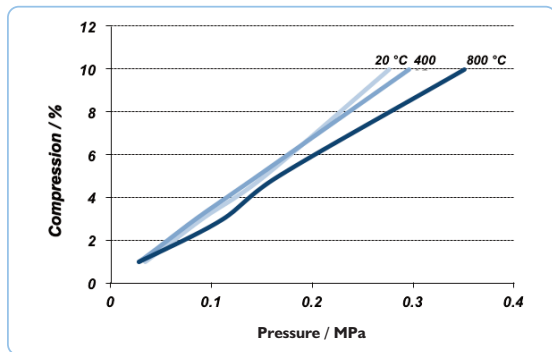
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Thermal Conductivity as a function of mean temperature



Compression Behaviour



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