Morgan Advanced Materials

POREXTHERM

Data sheet

# WDS® Flexible Contour

ENGLISH

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## 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 1 and DIN EN 13501-1, part 1 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/m³ | 260 - 520 |
| **Classification temperature** °C | 1100 |
| **Compressive strength** MPa (density = 350kg/m³) 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.

## Contact


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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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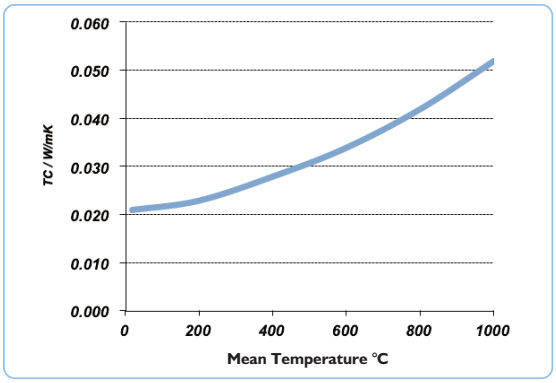
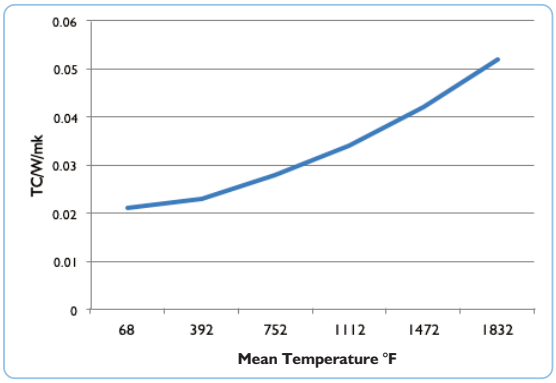
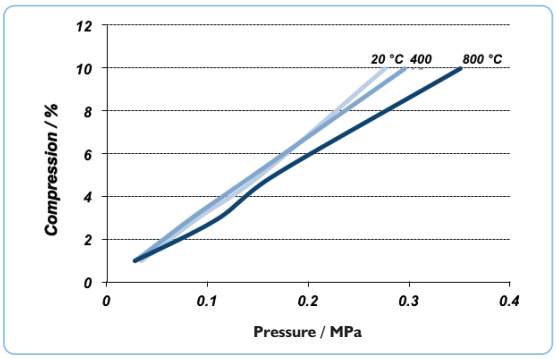
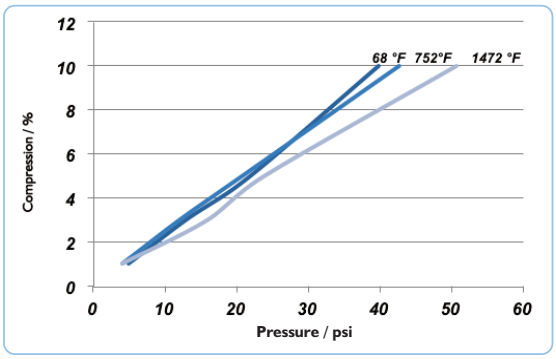
### Thermal Conductivity as a function of mean temperature




### Compression Behaviour

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