

Data sheet

ENGLISH

Superwool® VF Shapes and Boards

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Description

Vacuum-forming allows the production of a variety of configurations, tailored to the particular application and ranging from simple sections (such as tubes, cones and flat shapes) to complex shapes (such as combustion chambers).

Good cohesive strength high operating temperature and excellent insulating properties make Superwool® Plus™ VF and Superwool® HT™ VF products suitable for various applications.

Superwool® Plus™ VF is a vacuum formed insulating product made from a mixture of Superwool® Plus™ fibres, refractory constituents and organic binders.

Superwool® Plus™ Strong VF is produced by the addition of selected refractory fillers in order to maximize the mechanical properties and the resistance to erosion of the final product.

Superwool® Plus™ Carton is produced by the addition of selected Superwool® Plus™ fibres, both organics and inorganics binders. Boards in Superwool® Plus Carton are thin and rigid.

Superwool® HT™ VF is a vacuum formed insulating product, made from mixture of Superwool® HT™ Fibres, refractory constituents and organic binders.

Superwool® HT 2™ VF offers record performances compared to the original formula because of its resistance to higher temperature, while maintaining a low thermal conductivity and good resistance to erosion. Use in conditions with repeated shocks must be avoided.

Superwool® Plus™ LB™ and Superwool® HT™ LB VF are tailored products, flexible and offer a good resistance and facilitate installation in which, rigid products are not suitable.

Type

Vacuum formed shapes & boards manufactured from high temperature insulation wool.



Classification temperature

From 1200°C to 1450°C

The maximum continuous use temperature depends on the application. Unaffected by most chemicals except strong alkalis, phosphoric acid and molybdenum. For further advise please contact your local Morgan Thermal Ceramics partner.

Standard grades

Superwool® Plus™ VF

Standard formula based on Superwool® Plus™ Fibre

Superwool® Plus Strong™ VF

Dense formula based on Superwool® Plus™ Fibre

Superwool® Plus™ Carton

Thin boards or cutting pieces based on Superwool® Plus™ Fibre

Superwool® HT™ VF

Standard formula based on Superwool® HT™ fibre

Superwool® HT 2™ VF

Dense formula based on Superwool® HT™ fibre and additives
High resistance against molten iron and steel

Superwool® Plus™ LB™ and Superwool® HT™ LB VF

Flexible formulae based on Superwool® Plus™ VF fibres or Superwool® HT™ VF fibres

Typical applications

- Riser sleeves and crucibles for ferrous and non ferrous molten metals
- Stopper nut insulation
- Ladle shroud gasket
- Nozzle insulation in continuous casting
- Roller inserts in roller hearth furnace
- Glass casting mould
- Tube insulation end in tube fumes boiler
- Insulation for domestic appliance
- Furnace insulation

Benefits

- Easy to use
- 'Tailor made' shapes
- Homogeneous structure
- Low thermal conductivity
- Good erosion resistance and rigidity
- Excellent hardness properties
- Excellent thermal shock resistance
- Low heat storage, lightweight
- Good cycling performance (standard formula)
- Molten iron & steel resistance
- No reaction with alumina based bricks in application in the range of typical use temperature
- Flame resistant
- Easy to machine
- Exonerated from any carcinogenic classification under nota Q of directive 97/69 CE

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Special treatment

Superwool hardener or Superwool cement may be applied should it be necessary to surface treat or glue to other substrates.

Superwool® Boards and Shapes (except Superwool® HT LB) can be pre-fired should it be necessary.

	Superwool® Plus™ VF	Superwool® Plus™ Strong VF	Superwool® Plus™ Carton	Superwool® Plus™ LB	Superwool® HT™ VF	Superwool® HT 2™ VF	Superwool® HT™ LB
Classification temperature °C	1200	1200	1200	1200	1300	1450	1100
Colour	White/tan	White/tan	White/tan	White/tan	White/tan	White/tan	White/tan
Density, kg/m³	280	380	290	260	320	335	250
Modules of rupture, MPa							
Unfired	1.15	2.01	1.47	Flexible	1.1	1.87	Flexible
Fired	0.52	0.9	-	-	-	-	-
Loss of ignition, %	5 - 7	5 - 7	7	5 - 7	6	4	5 - 7
Compressive strength, MPa							
5 % compression	0.13	0.3	-	-	-	-	-
10 % compression	0.16	0.38	-	-	-	-	-
Thermal Conductivity, ASTM C-201, W/m K							
à 400°C	0.08	0.09	0.07	0.08	0.10	0.08	0.04
à 600°C	0.12	0.12	0.10	0.12	0.13	0.12	0.08
à 800°C	0.16	0.14	0.15	0.16	0.19	0.18	0.15
à 1000°C	0.2	0.17	-	0.20	0.24	0.25	0.24
à 1200°C	-	-	-	-	0.31	0.33	0.25
à 1300°C	-	-	-	-	-	0.38	-
Permanent linear shrinkage after 24 hours isothermal heating, %							
1100°C	<2	<2	<2	-	-	-	<2
1250°C	-	-	-	<2	<2	-	-
1400°C	-	-	-	-	-	<2	-

Superwool® Plus™ Carton

Standard dimensions in mm:

1000*500*3 mm
 1000*500*4 mm
 1000*500*5 mm
 1000*500*6 mm
 1000*500*8 mm

Other thicknesses and sheet sizes can be supplied to special order.

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Whilst the values and application information in this datasheet are typical, they are given for guidance only. The values and the information given are subject to normal manufacturing variation and may be subject to change without notice. Morgan Advanced Materials – Thermal Ceramics makes no guarantees and gives no warranties about the suitability of a product and you should seek advice to confirm the product's suitability for use with Morgan Advanced Materials - Thermal Ceramics.

SUPERWOOL® is a patented technology for high temperature insulation wools which have been developed to have a low bio persistence (information upon request). **SUPERWOOL®** products may be covered by one or more of the following patents, or their foreign equivalents:

SUPERWOOL® PLUS and **SUPERWOOL® HT** products are covered by patent numbers: US5714421 and US7470641, US7651965, US7875566, EP1544177 and EP1725503 respectively.

A list of foreign patent numbers is available upon request to Morgan Advanced Materials plc.

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