



# Superwool<sup>®</sup> VF Shapes and Boards

## Product Data Sheet

### Product Description

Superwool vacuum formed shapes and boards are made from our patented Superwool low biopersistent fibres. These products are manufactured using high purity raw materials and the latest vacuum forming technology, resulting with products with excellent thermal and physical performance in high-temperature applications. Both Superwool Plus and Superwool HT based products are available in organic-rigid or flexible forms. The rigid products can also be manufactured inorganic, by high temperature firing, post-forming.

Superwool vacuum formed shapes and boards have excellent refractoriness and non-wetting characteristics with molten aluminum. Superwool fibres provide excellent stability and resistance to most types of chemical attacks.

Superwool Plus VF products have a 1200°C classification temperature and are available in the following forms:

- Standard: Superwool Plus VF formulation with low thermal conductivity and excellent resistance to molten aluminium wetting.
- Strong: A higher density product with improved mechanical strength.
- Carton: Thin boards based on Superwool Plus fibre. Offering 3mm minimum thickness.
- LB (latex bonded): Offering flexibility where a rigid product is not suitable.

Superwool HT VF shapes are available with classification temperatures up to 1450°C in the following forms:

- Standard: Offering a 1300°C classification temperature.
- HT2: Higher refractoriness with a classification temperature of 1450°C. Applications with repeat thermal shocks must be avoided.
- LB (latex bonded): Offering flexibility where a rigid product is not suitable.

The continuous use temperature depends upon the application and we encourage contacting your regional Morgan Advanced Materials - Thermal Ceramics representative to support specific application requirements.

### Features

- Rigid, self-supporting, fibre insulating board
- Very low thermal conductivity
- Opportunity to reduce backup insulation thickness up to 50% when replacing insulating firebrick or castable
- Low heat storage and lightweight
- Good thermal shock resistance allows use in applications with large variations in temperature and cyclic operation
- Non-wetting to molten aluminium
- Good machinability for cutting and shaping to different sizes and shapes
- Easy to install

### Applications

- Furnace, Kiln, and Oven hot face and backup linings
- Insulation backup to:
  - Firebrick and insulating firebrick
  - Refractory monolithics utilizing rammed linings or shapes
- Flue and Chimney linings, Hot gas duct lining
- Ingot mould hot tops
- Applications with direct molten aluminium contact
- Consumer appliances Gaskets, Seals, Expansion joints
- Molten Metal trough covers
- Heat Shields for personal protection
- Heat processing equipment

### Environmental & Health Safety

Superwool low biopersistent fibres manufactured by Morgan Advanced Materials are not classified as carcinogenic by IARC or under any national regulations on a global basis. They have no requirements for warning labels under GHS (Globally Harmonised System for the classification and labelling of chemicals).

In Europe, Superwool fibres meet the requirements specified under Note Q of European Regulation EC/1272/2008 (on Classification, Labelling and Packaging of substances and mixtures). All Morgan Advanced Materials Superwool low biopersistent fibre products are therefore exonerated from classification and labelling as hazardous in Europe.

# Superwool<sup>®</sup> VF Shapes and Boards

## Product Data Sheet



Properties	Superwool Plus	Superwool Plus Strong	Superwool Plus Carton	Superwool Plus LB
Region of Manufacture	EMEA	EMEA	EMEA	EMEA
Colour	White / tan	White / tan	White / tan	White / tan
Classification Temperature, °C (°F), ISO 10635	1200 (2192)	1200 (2192)	1200 (2192)	1200 (2192)
Density, kg/m <sup>3</sup> (pcf), ASTM C612-14	280 (17.5)	380 (23.7)	290 (18.1)	260 (16.2)
Compressive Strength, 10% deformation, MPa (psi), ASTM C165	0.16	0.38	-	-
<b>Permanent Linear Shrinkage, %, ISO 10635</b>				
1100°C	<2	<2	<2	-
1250°C	-	-	-	<2
1400°C	-	-	-	-
<b>Modulus of Rupture, MPa, ASTM C165</b>				
Unfired	1.15	2.01	1.47	Flexible
Fired	0.52	0.9	-	-
<b>Thermal Conductivity, W/m·K, ASTM C201</b>				
400°C (752°F)	0.08	0.09	0.07	0.08
600°C (1112°F)	0.12	0.12	0.10	0.12
800°C (1472°F)	0.16	0.14	0.15	0.16
1000°C (1832°F)	0.20	0.17	-	0.20
1200°C (2192°F)	-	-	-	-
1300°C (2372°F)	-	-	-	-

### Product Availability

Superwool Plus, Plus Strong, Plus Carton and Plus LB are manufactured and packaged for Europe regional business. Please contact your regional Morgan Advanced Materials - Thermal Ceramics representative to support packaging availability for your regional business needs.

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet 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.

# Superwool<sup>®</sup> VF Shapes and Boards

## Product Data Sheet



Properties	Superwool HT	Superwool HT2	Superwool HTLB
Region of Manufacture	EMEA	EMEA	EMEA
Colour	White / tan	White / tan	White / tan
Classification Temperature, °C (°F), ISO 10635	1300 (2372)	1450 (2642)	1100 (2012)
Density, kg/m <sup>3</sup> (pcf), ASTM C612-14	320 (19.9)	335 (20.9)	250 (15.6)
<b>Permanent Linear Shrinkage, %, ISO 10635</b>			
1100°C	-	-	<2
1250°C	<2	-	-
1400°C	-	<2	-
<b>Modulus of Rupture, MPa, ASTM C165</b>			
Unfired	1.1	1.87	Flexible
Fired	-	-	-
<b>Thermal Conductivity, W/m·K (BTU·in/hr·ft<sup>2</sup>·°F), ASTM C201</b>			
200°C (392°F)		-	0.03 (0.21)
400°C (752°F)	0.10	0.08 (0.56)	0.04 (0.28)
600°C (1112°F)	0.13	0.12 (0.83)	0.08 (0.56)
800°C (1472°F)	0.19	0.18 (1.25)	0.15 (1.04)
1000°C (1832°F)	0.24	0.25 (1.73)	0.24 (1.67)
1200°C (2192°F)	0.31	0.33 (2.29)	0.29 (2.01)
1300°C (2372°F)	-	-	-
1400°C (2552°F)	-	0.38 (2.64)	-

### Product Availability

Superwool HT, HT2 and HTLB are manufactured and packaged for Europe regional business. Please contact your regional Morgan Advanced Materials - Thermal Ceramics representative to support packaging availability for your regional business needs.

The product(s) represented are intended for industrial refractory applications. The values and application information in this datasheet 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.