

Superwool[®] Plus and HT Boards

Product Data Sheet



Product Description

Superwool Boards are manufactured from our market leading low biopersistent Superwool Bulk fibres, refractory fillers, organic and inorganic binders. Superwool Boards offer excellent thermal and physical performance in high-temperature applications. Superwool offers an alternative to traditional solutions due to its high refractoriness and excellent non-wetting characteristics with molten aluminum. Superwool provides stability and resistance to most types of chemical attack. Thermal and physical properties are restored after drying.

- Superwool Plus Board H is recommended when a high strength material is required
- Superwool Plus Board 85 is ideally suitable for applications up to 1000°C (1830°F)
- Superwool Plus Board LTI is recommended for applications where thin, rigid insulating panels are required such as domestic boilers
- Superwool HT Board offers the highest classification temperature up to 1300°C (2370°F)
- Superwool HT Board C is specially designed for application up to 1000°C (1830°F) requiring cycling resistance and high mechanical performances as in domestic boilers

Benefits

- Thin boards is easily die-cut and all boards can be cut with a hacksaw blade allowing precise shapes to be made.
- Good thermal shock resistance allows use in applications with large variations in temperature
- Low heat storage capacity
- Can be used in direct contact with flame
- Very low thermal conductivity
- Exonerated from any carcinogenic classification under nota Q of directive 97/69 EC

Applications

- Molten aluminum contact
- Furnace, kiln, and oven hot face linings
- Flue and chimney linings
- Insulation as backup to firebrick, insulating firebrick, refractory monolithics and rammed shapes
- Appliance and heat processing insulation

Environmental & Health Safety

Superwool low biopersistent fibres are exonerated and 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 NOTA Q of European Directive 67/548. All Morgan Advanced Materials Superwool low biopersistent fibre products are therefore exempt from the classification and labelling regulation in Europe.

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Properties	Superwool Plus H	Superwool Plus 85	Superwool Plus LTI	Superwool HT C		Superwool HT
Colour	Tan	Tan	Tan	Tan	Tan	Tan
Classification Temperature, °C (°F)	900 (1650)	1000 (1800)	1100 (2010)	1150 (2100)		1300 (2370)
Density, kg/m ³ (pcf)	520 (32.45)	320 (19.97)	350 (21.84)	380 (24)	480 (30)	360 (22.46)
Modulus of Rupture, MPa (psi), *unfired	3.5 (507.5)	0.8 (116)	1.5 (217.5)	1.4 (203)	2.6 (377)	1.4 (203)
Thickness, mm (in)	20-25 (0.8-1)	20-50 (0.8-2)	6-15 (0.24-0.6)	20-50 (0.8-2)	6-18 (0.24-0.72)	10-50 (0.4-2)
Compressive strength @ 10% deformation, MPa (psi)	1.1 (159.5)	0.3 (43.5)	0.3 (43.5)	0.5 (73)	0.6 (87)	0.3 (43.5)
Water absorption after 2 hours, %	2	2	-	-	-	-
Permanent Linear Shrinkage, %, 24 hours, EU made products per EN (1094-1)						
900°C (1652°F)	1.2	-	-	-	-	-
1000°C (1832°F)	-	0.9	-	-	-	-
1100°C (2012°F)	-	-	1	-	-	-
1150°C (2100°F)	-	-	-	1.6	1.6	1.6
Chemical Analysis, %						
Alumina, Al ₂ O ₃	11.2	10.1	4.4	6	8	1.4
Silica, SiO ₂	70.5	59.5	67	72	73	77.5
Calcium oxide + Magnesium oxide, CaO + MgO	15.1	28.2	27.4	20	17	20.3
Ferric oxide + Titanium oxide, Fe ₂ O ₃ + TiO ₂	1.6	1.2	0.6	1	1	0.1
Alkalis, as Na ₂ O+K ₂ O	1.6	1	0.6	1	1	0.7
Loss on Ignition, LOI, after 2 hours heating, 800°C (1472°F)	10	5	5	5.5	5.5	3
Thermal Conductivity, W/m·K (BTU·in/hr·ft²·°F), per ASTM C201						
200°C (392°F)	-	-	-	-	-	0.05 (0.35)
300°C (572°F)	0.12 (0.83)	0.07 (0.486)	0.08 (0.56)	0.07 (0.49)	0.07 (0.49)	-
400°C (752°F)	0.13 (0.90)	0.08 (0.56)	0.09 (0.62)	0.09 (0.62)	0.09 (0.062)	0.08 (0.56)
500°C (932°F)	-	0.08 (0.56)	-	-	-	-
600°C (1112°F)	0.15 (1.04)	0.11 (0.76)	0.12 (0.83)	0.12 (0.83)	0.12 (0.83)	0.11 (0.76)
800°C (1472°F)	-	0.12 (0.83)	0.15 (1.04)	0.15 (1.04)	0.15 (1.04)	0.15 (1.04)
1000°C (1832°F)	-	0.16 (1.11)	-	-	-	0.2 (1.39)
1200°C (2192°F)	-	-	-	-	-	0.26 (1.80)

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.

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Product Availability

Superwool Plus Board H, 85, LTI Boards and Superwool HT and Superwool HT C Boards are manufactured in Europe. Packaging is listed for the Europe regional business. Please contact your regional Morgan Advanced Materials - Thermal Ceramics representative to support packaging availability for your regional business needs.

Dimensions
Superwool Plus and Superwool HT Boards are available as standard size 1200mm x 1000mm
Superwool Plus Boards can be supplied with aluminium foiling on request.

Tolerances			
Superwool Plus H	20mm thickness, max +/-1	25mm thickness, max +/-2	
Superwool Plus 85	20mm thickness, max +/-1	25-50mm thickness, +/-2	
Superwool Plus LTI	6-9mm thickness, max +/-0.5	10-15mm thickness, max +/-1	
Superwool HT	10-20mm thickness, max +/-1	25-50mm thickness, max +/-2	
Superwool HT C	6mm thickness, max +/-0.5	10-20mm thickness, max +/-1	25-50mm thickness, max +/-2

Boards can be packed in cartons or on pallets which are shrink wrapped with recyclable plastic.

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