

Data sheet

Superwool® Paper

ENGLISH

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Description

Superwool® papers are uniquely designed from Superwool® bulk and organic binders. Superwool® papers are specially processed to offer excellent performance in high-temperature applications. Superwool® papers offer an alternative to traditional solutions due to its unique properties of high refractoriness and excellent non-wetting characteristics to applications requiring direct contact with molten aluminium.

Superwool® provides stability and resistance to chemical attack. Exceptions include hydrofluoric acid, phosphoric acid and strong alkalis (i.e. NaOH, KOH). Superwool is unaffected by incidental spills of oil or water. Thermal and physical properties are restored after drying.

Superwool® HT™ Paper an insulating product, is made of Superwool® HT™ fibres bonded with a low percentage of organic binder.

Superwool® Plus™ Paper is made of Superwool® Plus long fibres bonded with a low percentage of organic binder.

Superwool® Flex-Wrap is produced from a blend of Superwool® high purity fibers and organic binders. Due to its low organic binder content, offgassing is at a minimum.

Superwool® 332-E paper is totally organic free and is ideally suited for mid-range temperatures found in the appliance, non-ferrous and automotive applications.

For Superwool® Flex-Wrap and 332-E please refer to imperial information on page 3.

Type

Paper manufactured from high temperature insulation wool.

Classification temperature

From 1100°C (2012°F) to 1300°C (2372°F)

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.

Typical applications

- Industrial and domestic appliance gasketing
- Non-Ferrous ingot mould liners
- Aluminium transfer system back-up insulation
- Parting medium in induction furnaces
- Automotive and Aerospace heat shields

Benefits

- Low biopersistence
- Excellent thermal insulating performance
- Thin, flexible high temperature insulation
- Thermal stability
- Low heat storage
- Easily die-cut to form complex shapes for high temperature gasketing
- Excellent tensile strength
- Immune to thermal shock
- Low thermal conductivity and heat storage
- Non-wetting to molten aluminium
- In Europe, Superwool® fibre meets the requirements specified under NOTE Q of European Regulation 1272/2008. All Superwool® fibre products are therefore exonerated from labelling requirements in Europe
- No requirement for warning labels under GHS (Globally Harmonised System for the classification and labelling of chemicals)



SDS:
EU: 402/412
NA: 357/358/353
GHS: n/a

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Superwool® Paper

Metric information

	Superwool® Plus Paper	Superwool® HT Paper
Classification temperature, °C	1100	1300
Colour	White	White
Density, kg/m ³	190 - 210	210
Tensile strength, EN 1094-1, kPa	>0.65	>0.45
Thermal conductivity, ASTM C-201, W/m K		
@200°C	0.05	0.04
@400°C	0.07	0.07
@600°C	0.11	0.1
@800°C	0.16	0.14
@1000°C	0.23	0.19
@1200°C	-	0.25
Loss of ignition, %	8	8
Linear shrinkage, %		
@1000°C	<2	-
@1300°C	-	<2
Chemical composition, %		
SiO ₂	60 - 70	70 - 80
CaO+MgO	30 -37	18 - 25
Others	<3	<3

Availability and Packaging

Superwool® Plus Paper is available in 1000mm, 610mm and 500mm wide rolls packed in cartons

Superwool® HT Paper is available in 500mm, 610mm, 1000mm and 1220mm wide rolls, packed in cartons.

Non standard roll widths and lengths can also be supplied.

Grade	Thickness mm	Length m
Superwool® Plus Paper only	0.5	80
Superwool® Plus & HT Paper	1	40
	2	20
	3	15
	4	10
	5	10
	6	10
	7	10
	8	10
	9	10
	10	10

Contact

Europe:

Telephone:
+44 (0) 151 334 4030

E-mail:
marketing.tc@morganplc.com

North America:

Telephone:
+1 (706) 796 4200

E-mail:
northamerica.tc@morganplc.com

South America:

Telephone:
+54 (11) 4373 4439

E-mail:
marketing.tc@morganplc.com

Asia:

Telephone:
+65 6595 0000

E-mail:
asia.mc@morganplc.com

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.

Morgan Advanced Materials plc Registered in England & Wales at Quadrant, 55-57 High Street, Windsor, Berkshire SL4 1LP UK Company No. 286773

Data sheet

Imperial information

Superwool® Paper

	Superwool® Plus 332-E Paper	Superwool® Plus Paper	Superwool® Plus Flex-Wrap Paper	Superwool® HT Paper
Continuous use limit, °F (°C)	1300 (704)	1832 (1000)	1832 (1000)	2102 (1150)
Maximum continuous use temperature, °F (°C)	-	2012 (1100)	2012 (1100)	2372 (1300)
Color	white	white	white	white
Melting point, °F (°C)	1800 (980)	2327 (1275)	2327 (1275)	2552 (1400)
Density, pcf (kg/m³)	11 - 14 (176 - 224)	11 - 13 (176 - 208)	10 - 13 (160 - 208)	11 - 14 (176 - 224)
Thermal conductivity, ASTM C 201, BTU • in./hr • ft² (W/m • K)				
@500°F (@260°C)	0.35 (0.05)	0.39 (0.06)	0.39 (0.06)	0.39 (0.06)
@1000°F (@538°C)	0.53 (0.08)	0.65 (0.09)	0.65 (0.09)	0.65 (0.09)
@1500°F (@816°C)	-	1.04 (0.15)	1.04 (0.15)	1.02 (0.15)
@1800°F (@982°C)	-	1.35 (0.19)	1.35 (0.19)	-
@2000°F (@1093°C)	-	-	-	1.52 (0.22)
Loss of ignition, %	0.5 max	5 - 10	2 - 5	5 - 10
Chemical analysis, %				
SiO ₂	65	60 - 70	60 - 70	60 - 70
Al ₂ O ₃	-	trace	trace	trace
CaO	25	29 - 42	25 - 35	16 - 22
MgO	5	5 - 10	4 - 7	12 - 19

Availability and Packaging

Packaging availability for these products can be reviewed within the price book.

Products	Thickness, in (mm)	Width, in (mm)	Sq. FT/Roll (M)	Mill Rolls, L.FT (M)
Superwool Plus 332-E	1/32 (0.79)	12, 24, 48	1000 (93)	-
Superwool Plus Superwool Plus Flex-Wrap Superwool Plus 332-E Superwool HT	1/16 (1.6)	12, 24, 48 (305, 610, 1220)	500 (46.4)	750 (229)
Superwool Plus Superwool Plus Flex-Wrap Superwool Plus 332-E Superwool HT	1/8 (3.2)	12, 24, 48 (305, 610, 1220)	250 (23.2)	375 (114)
Superwool Plus Superwool Plus Flex-Wrap Superwool Plus 332-E Superwool HT	1/4 (6.4)	12, 24, 48 (305, 610, 1220)	125 (11.6)	185 (56)

Contact

Europe:

Telephone:
+44 (0) 151 334 4030

E-mail:
marketing.tc@morganplc.com

North America:

Telephone:
+1 (706) 796 4200

E-mail:
northamerica.tc@morganplc.com

South America:

Telephone:
+54 (11) 4373 4439

E-mail:
marketing.tc@morganplc.com

Asia:

Telephone:
+65 6595 0000

E-mail:
asia.mc@morganplc.com

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