Data sheet

Superwool® Papers

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 alkalies (i.e. NaOH, KOH). Superwool is unaffected by incidental spills of oil or water. Thermal and physical properties are restored after drying.

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.

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 Advanced Materials representative.

Typical applications

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

Benefits

- Low biopersistence
- Excellent thermal insulating performance
- Thin, flexible high temperature insulation
- Immune to thermal shock
- Low heat storage
- Easily die-cut to form complex shapes for high temperature gasketing
- Excellent tensile strength
- Low thermal conductivity
- Non-wetting to molten aluminium
- Superwool 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 Superwool fibre products are therefore exempt from the classification and labelling regulation in Europe.

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Superwool® Papers

Metric information
Manufactured in Europe

	Superwool Plus Paper	Superwool Plus Flex-Wrap	Superwool Plus 332-E	Superwool Plus LCF Paper	Superwool HT Paper	Superwool Plus MD Black Paper
Colour	white	white	white	white	white	white, black
Continuous Use Temperature, °C	1000	1000	704	-	-	-
Classification Temperature, °C	1200	1100	-	1200	1300	1200
Melting Temperature, °C	-	1275	980	-	-	-
Denisty, kg/m³	190 - 210	160 -208	176 - 224	190-215	220	230
Tensile strength, Mpa	>0.65	0.17	-	>0.65	>0.45	>0.65
Permanent Linear Shrinkage, % ENV (1094-1)						
4 hours @ 500°C	-	-	-	-	-	<2
after 24hrs @ 1000°C	<2	-	-	-	-	<2
after 24hrs @ 1200°C	-	-	-	<2	-	-
after 24hrs @ 1260°C	-	-	-	-	<2	-
Chemical Analysis, % weight basis after firing						
Al_2O_3	-	trace	-	-	trace	-
SiO^2	-	60-70	65	60-70	70-80	-
CaO + MgO	-	29-42	30	30-37	18-25	-
C	-	-	-	-	-	-
Organic binder	-	-	-	-	-	-
Other	-	1	5	<3	<3	-
Loss of Ignition, LOI	8	2-5	0.5 max	-	5-10	12
Thermal Conductivity, W/m•K, per ASTM C201						
200°C	0.05	-	-	0.04	0.04	-
260°C	-	0.06	0.05	-	-	-
400°C	0.07	-	-	0.06	0.07	-
538°C	-	0.06	0.08	-	-	-
600°C	0.11	-	-	0.09	0.10	-
800°C	0.16	-	-	0.13	0.14	-
816°C	-	0.15	-	-	-	-
982°C	-	0.19	-	-	-	-
1000°C	0.23	-	-	-	0.19	-
1100°C	-	-	-	-	-	-
1200°C	-	-	-	0.17	0.25	-

Availability and Packaging (Europe)

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.

	Thickness, mm	Length, mm	Width, mm Superwool Plus	Width, mm Superwool HT
Superwool Plus Paper	**0.5**	**80**		
Superwool Plus and Superwool HT Paper	**1**	**40**	**1000 610 500**	**500 1000 1220**
	2	**20**		
	3	**15**		
	4	**10**		
	5	**10**		
	6	**10**		
	7	**10**		
	8	**10**		
	9	**10**		
	10	**10**		

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Data sheet

Superwool® Papers

Imperial information
Manufactured in North America

	Superwool Plus Paper	Superwool Plus Flex-Wrap	Superwool Plus 332-E	Superwool HT Paper
Colour	white	white	white	white
Continuous Use Temperature, °F	1832	1832	1300	2102
Classification Temperature, °F	2012	2012	-	2372
Melting Temperature, °F	2327	2327	1800	2552
Denisty, pcf	11 - 13	10 - 13	11 - 14	14
Tensile strength, psi	>65	>25	-	<50
Permanent Linear Shrinkage, % ENV (1094-1)				
after 24hrs @ 1000°C	<2	-	-	-
after 24hrs @ 1260°C	-	-	-	<2
Chemical Analysis, % weight basis after firing				
Al_2O_3	-	trace	-	trace
SiO_2	-	60-70	65	70-80
CaO + MgO	-	29-42	30	18-25
Other	-	1	5	<3
Loss of Ignition, LOI	8	2-5	0.5 max	5-10
Thermal Conductivity, BTU•in/hr•ft², per ASTM C201				
400°F	0.35	-	-	0.28
500°F	-	0.39	0.35	-
750°F	0.49	-	-	0.49
1000°F	-	0.39	0.53	-
1100°F	0.76	-	-	0.69
1472°F	1.11	-	-	0.97
1500°F	-	1.04	-	-
1800°F	-	1.35	-	-
1832°F	1.59	-	-	1.32
2200°F	-	-	-	1.73

Availability and Packaging (North America)

Non standard roll widths and lengths can also be supplied.

	Thickness, in (mm)	Length, in (mm)	SqFt/Roll (SqM/Roll)	Mill Rolls Ft/Roll (Linear M/Roll)
Superwool Plus 332-E	1/32 (0.79)	12 (305)	1000 (93)	-
	1/32 (0.79)	24 (610)	1000 (93)	-
	1/32 (0.79)	48 (1220)	1000 (93)	-
Superwool Plus, Superwool Plus Flex-Wrap, Superwool HT, Superwool Plus 332-E	1/16 (1.6)	12 (305)	500 (46.6)	750 (229)
Superwool Plus, Superwool Plus Flex-Wrap, Superwool HT, Superwool 406-E, Superwool 351-E	1/16 (1.6)	24 (610)	500 (46.6)	750 (229)
	1/16 (1.6)	48 (1220)	500 (46.6)	750 (229)
Superwool Plus, Superwool Plus Flex-Wrap, Superwool HT	1/8 (3.2)	12 (305)	250 (23.2)	375 (114)
Superwool Plus, Superwool Plus Flex-Wrap, Superwool HT, Superwool 406-E, Superwool 351-E	1/8 (3.2)	24 (610)	250 (23.2)	375 (114)
	1/8 (3.2)	48 (1220)	250 (23.2)	375 (114)
Superwool Plus, Superwool Plus Flex-Wrap, Superwool HT	1/4 (6.4)	12 (305)	125 (11.6)	185 (56)
Superwool Plus, Superwool Plus Flex-Wrap, Superwool HT, Superwool 406-E, Superwool 351-E	1/4 (6.4)	24 (610)	125 (11.6)	185 (56)
	1/4 (6.4)	48 (1220)	125 (11.6)	185 (56)

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