Morgan Advanced Materials

Mastic products - Moldables

Product Name	Kaowool® Moldable	Kaowool® Moldable AR	Superwool® Moldable
Continuous temperature use limit, °F (°C)	1900 (1038)	1800 (982)	2000 (1093)
Classification temperature rating, °F (°C)	2000 (1093)		2100 (1149)
Density, pcf (kg/m³) **dried**	28 - 30 (448 - 480)	55 - 60 (881 - 962)	56 (895)
wet	70 - 75 (1122 - 1202)	100 - 105 (1602 - 1683)	97 (1550)
Compressive Strength, psi (MPa), fired			
5% @ 1800°F (982°C)		300 (2.07)	-
5% @ 1800°F (982°C)			250 (1.7)
Permanent Linear Change, %, ASTM C113			
@ 1000°F (538°C)	-0.1	-2.3	-
@ 1500°F (816°C)	-0.2	-2.3	
@ 2000°F (1093°C)	-2.7	-3.1	-1.3
Thermal Conductivity, BTU•in/hr•ft²•°F (W/m•K), ASTM C417			
mean temperature @ 500°F (260°C)	0.5 (0.07)	0.7 (0.10)	-
@ 1000°F (538°C)	0.7 (0.10)	1.0 (0.14)	
@ 1500°F (816°C)	1.0 (0.14)	1.3 (0.19)	
Chemical Analysis, %, Weight basis after firing			
Alumina, Al_2O_3	26 - 30	29 - 32	20
Silica, SiO_2	67 - 72	64 - 67	65
Calcium oxide + Magnesium oxide, CaO + MgO	-		13
Other	1 - 2	3 - 5	<3
Shelf Life, months, minimum	12	6	12
Quantity per Container, gallon (liter) ounces (grams)	1, 5 (4, 19), pail 11, 32 (312, 907) tube		

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Mastic products - Pumpables

Product Name	Kaowool® Pumpable	Kaowool® Pumpable XTP	Kaowool® Pumpable HT	Kaowool Pumpable HS	Therm-O-Hot Patch™	Superwool® Pumpable
Continuous temperature use limit, °F (°C)	1900 (1038)		2400 (1316)	2800 (1538)	1800 (982)	1900 (1038)
Classification temperature rating, °F (°C)	2000 (1093)		2500 (1371)		1900 (1038)	2000 (1093)
Density, pcf (kg/m³) dried @230°F (110°C)	22 - 26 (352 - 416	34 - 40 (545 - 641)	23 - 28 (368 - 449)	70 (1121)	22.4 (359)	26 (897)
wet	70 - 75 (1121 - 1201)	70 - 75 (1121 - 1201)	73 - 78 (1169 - 1249)	100 (1602)	60 (961)	75 (1554)
Compressive Strength, psi (MPa), dried @ 230°F (110°C)						
5% @ 1800°F (982°C)	45 (0.31)	75 (0.52)	-	-	-	68 (0.47)
5% @ 2000°F (1093°C)	-	-		280 (1.93)		-
10% @ 1800°F (982°C)	68 (0.49)			-		142 (0.98)
Permanent Linear Change, %, ASTM C113						
@ 1200°F (649°C)						-0.3
@ 1500°F (816°C)	-	-1.0	-0.2	-	-1.5	-1.7
@ 1800°F (982°C)	-1.0	-	-		-	
@ 2000°F (1093°C)	-3.0	-2.5		-2.2		-2.0
@ 2500°F (1371°C)	-		-2.4	+0.4		-
@ 2800°F (1538°C)			-	-1.1		
Thermal Conductivity, BTU•in/hr•ft²•°F (W/m•K), ASTM C417						
mean temperature @ 300°F (148°C)	-	0.5 (0.07)	-			
@ 400°F (204°C)		-			0.76 (0.11)	-
@ 500°F (260°C)	0.5 (0.07)		0.5 (0.07)	-	-	
@ 700°F (371°C)	-	0.7 (0.10)	-			
@ 800°F (427°C)		-			0.97 (0.97)	
@ 1000°F (538°C)	0.7 (0.10)		0.7 (0.10)		-	
@ 1100°F (593°C)	-	1.1 (0.16)	-			
@ 1200°F (649°C)		-			1.25 (0.18)	
@ 1500°F (816°C)	1.0 (0.14)		1.0 (0.14)		-	
@ 1600°F (871°C)	-		-		1.56 (0.22)	
Chemical Analysis, %, Weight basis after firing						
Alumina, Al_2O_3	39 - 43	34	43 - 47	47 - 50	19	5
Silica, SiO_2	52 - 58	66	50 - 54	47 - 50	46	64
Calcium oxide + Magnesium oxide, CaO + MgO	-				19	29
Ferric oxide, Fe_2O_3	-			0.4 - 0.7	8.9	-
Other	3 - 5	-	2 - 4		4.4	
Shelf Life, months, minimum	12	6	12	6	12	
Quantity per Container, gallon (liter)	5 (19), pail					

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Morgan Advanced Materials

Mastic products - Cements

Product Name	Kaowool® Cement B	Cera-Kote™	Cera-Kote 322-D	Cera-Kote 624-A	Super Stic-Tite™	Therm-O-Stix® Adhesive
Continuous temperature use limit, °F (°C)	2200 (1204)	2150 (1177)	2200 (1204)		-	1200 (649)
Classification temperature rating, °F (°C)	2400 (1316)	2300 (1260)	2400 (1316)		1900 (1038)	1200 (649)
Melting point, °F (°C)	3250 (1788)	3200 (1760)	3250 (1788)		-	
Color	white	off-white	white			
Density, pcf (kg/m^3), dried	-				27 (432)	15 (240)
Bonding Stregnth, psi (kg/m^3)	205 (3284)	180 (2883)	255 (4085)	234 (3748)	-	
Chemical Analysis, %, Weight basis after firing						
Alumina, Al_2O_3	44	39	44	80	-	
Silica, SiO_2	55	59	55	19	-	74
Other	2			1		26
Shelf Life, months, minimum	6					12
Quantity per Container, gallon (liter)	1, 5 (4, 19), pail	1, 5 (4, 19), pail		1, 5 (4, 19), pail 16 (454) oz (g), bottle	50 (23) lb (kg)bag	1, 5 (4, 19), pail

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Mastic products - Coatings

Product Name	Kaowool® Sealcoat™ HT	Kaowool Rigidizer	Therm-O-Flake™ Coating	Kao-Seal™	Kao-Seal AHR Blue	Unikote® M Coating	Unikote S Coating	Superwool® Sealcoat™ HT
Continuous temperature use limit, °F (°C)	2500 (1371)	-	1600 (871)	200 (93)	-	2500 (1371)	2800 (1538)	2800 (1538)
Classification temperature rating, °F (°C)	2600 (1427)	2300 (1260)	1800 (980)	-		2600 (1427)	3000 (1649)	2900 (1593)
Density, pcf (kg/m³)								
dried	32 - 36 (513 - 577)	-				69 (1106)	69 (1106)	32 - 36 (513 - 577)
wet	78 - 82 (1250 - 1314)	75 (1202)	-					75 (1200)
Compressive Strength, psi (MPa), fired								
10% @ 2000°F (1093°C)	-							225 (1.55)
Permanent Linear Change, %, ASTM C113								
@ 2000°F (1093°C)	-1.8	-				-0.3 (2375°F)	-0.3 (2375°F)	-1.4
@ 2400°F (1316°C)	-					-0.5 (2550°F)	-	
@ 2600°F (1427°C)	-2.9					-	-0.5 (2650°F)	-1.5
@ 2800°F (1538°C)	-						-	-1.6
Thermal Conductivity, BTU•in/hr•ft²•°F (W/m•K), ASTM C417								
mean temperature @ 500°F (260°C)	0.6 (0.09)	-	0.88 (0.13) (400°F)	-				0.8 (0.12)
@ 1000°F (538°C)	0.8 (0.12)		1.09 (0.16) (800°F)					1.0 (0.14)
@ 1500°F (816C)	1.1 (0.16)		1.31 (0.19) (1200°F)					1.4 (0.20)
@ 2000°F (1093°C)	1.5 (0.22)		1.56 (0.23)(1600°F)					2.0 (0.29)
Chemical Analysis, %, Weight basis after firing								
Alumina, Al_2O_3	45 - 48	-	19	-		71	76	-
Silica, SiO_2	51 - 54		50			24		86
Calcium oxide + Magnesium oxide, CaO + MgO	-		18			-		12
Other	1 - 2		13			5	-	2
Shelf Life, months, minimum	12					12		
Quantity per Container, gallon (liter); ounce (gram)	1, 5 (4, 19), pail 11, 32 (312, 907) tube	1, 5 (4, 19), pail	40 (18) lb (kg) bag	5 (19), pail 55 (208)drum	5 (19), pail			1, 5 (4, 19), pail 11, 32 (312, 907) tube

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Mastic installation equipment

Product description
HS-100 Extrusion Pump is a modified piston extrusion pump designed to pump Kaowool® or Superwool® Pumpable and Sealcoat products in a fast efficient manner.

The air-operated HS-100 Extrusion Pump is mounted on a platform with wheels for easy movement. Five gallon pails of the Kaowool or Superwool Pumpable materials are positioned in the pump and the extrusion action delivers the product through the supply hose to the application area.

The Sealcoat® Nozzle assembly is designed to work in conjunction with the HS-100 Extrusion Pump to effectively apply the Sealcoat products. The special nozzle atomizes the Sealcoat material, providing an efficient wet gunning process for delivering the material onto a variety of insulation, refractory, or metal surfaces.

The AO-25 Caulking Gun is an air-operated bulk loaded caulking gun for use with Kaowool or Superwool Pumpable, Moldable and Sealcoat products.

It is capable of delivering products at a rate of ½ to 1½ gallons per minute depending on air pressure and nozzle size.

The gun operates on air pressure of 30 - 90 psi (0.21 - 0.62 MPa)

The CW-1 Caulking Wand attaches to the end of the HS-100 Pump delivery hose for large volume repairs. This is an ideal set-up to apply Pumpable and Sealcoat products to fill gaps in refractory linings and eliminate Hot Spots.

Openings in fibre module linings due to shrinkage are readily and effectively filled.

Features

HS-100 Extrusion Pump/Sealcoat Nozzle

- Easy to operate
- Quick set-up/clean-up
- Operates on compressed air systems (100 psi, 80 cfm ideal)

AO-25 Caulking Gun

- Easy to operate
- Manually loaded from 5 gallon pails

CW-1 Caulking Wand

- Easily attaches to the delivery hose
- ½ - inch nozzle diameter

HS-100 Extrusion Pump *(top)*
CW-1 Caulking Wand *(above left)* and Sealcoat Nozzle *(above right)*
AO-25 Caulking Gun *(below)*