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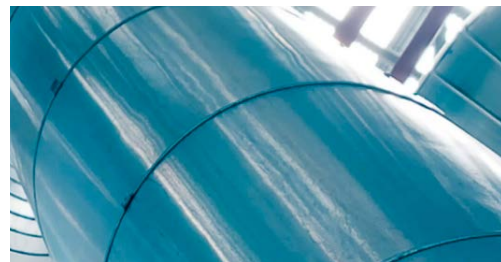
ArmaGel® HT

Flexible aerogel blanket for
high-temperature applications

// ASTM C1728 compliant
// Hot conditions up to 650 ºC (1200 ºF)
// More choice: 5, 10, 15 and 20mm thicknesses
// Up to five times better thermal performance
   than competing insulation materials
// Mitigates the risk of corrosion under insulation (CUI)

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TECHNICAL DATA – ARMAGEL HT

Brief description	ArmaGel HT is a flexible aerogel insulation blanket suitable for elevated temperature applications with maximum operating temperatures up to 650 °C (1200 °F). ArmaGel HT is compliant to ASTM C1728, Type III, Grade 1A.
Material type	Aerogel blanket
Colour	Grey
Special features	ArmaGel HT is resistant to elevated operating temperatures up to 650 °C (1200 °F). The product is suitable for use in multi-layer applications including ArmaSound® Industrial Systems.
Product range	Sheets in rolls, 5, 10, 15 and 20 mm (0.2, 0.4, 0.6, 0.8 in) thickness and width of 1.5 m (59 in). For further details, please refer to the product range tables at the end of this document.
Applications	Thermal insulation/protection of pipes, vessels and ducts (including elbows, fittings, flanges etc.) in offshore, industrial (typically oil and gas) and process equipment facilities. ArmaGel HT is also used as a component of ArmaSound Industrial Systems to provide acoustic insulation on industrial pipework and vessels, ensuring reduction of sound transmission.
Installation	For industrial applications, it is recommended to consult the relevant Armacell application manual(s). Please consult our Technical Services for further information and support.

Property	Value/Assessment									Standard/Test method
Service Temperature*1/2/3										
Max. service temperature	+650 °C		+1200 °F							Tested according to ASTM C411 and ASTM C447
Thermal conductivity										
Thermal conductivity*4 (metric units)	θm	+24	+38	+93	+149	+204	+260	+316	+371	[°C]	Tested according to ASTM C177
	$\lambda d \leq$	0.021	0.022	0.023	0.025	0.029	0.032	0.036	0.043	[W/(m·K)]	
Thermal conductivity*4 (imperial units)	θm	+75	+100	+200	+300	+400	+500	+600	+700	[°F]	
	$\lambda d \leq$	0.14	0.15	0.16	0.18	0.20	0.22	0.25	0.30	[Btu·in/(h·ft²·°F)]	
Temperature resistance										
Hot surface performance*2	Pass									Tested according to ASTM C411
Linear shrinkage under soaking heat	< 2% in width and length									Tested according to ASTM C356
Water absorption	Maximum 8% (before conditioning), maximum 16% (after conditioning for 24h at 316 ºC/600 ºF)									Tested according to ASTM C1763
Fire performance & approvals										
Surface burning characteristics	≤ 5 flame spread index ≤ 10 smoke development									Tested according to ASTM E84
Reaction to fire	B-s1,d0									According to EN 13501-1
Density										
Density	160 to 240 kg/m³		10 to 15 lb/ft³							Tested according to ASTM C303
Mechanical properties										
Compressive strength*5	≥ 3 psi (20.7 kPa)		at 10% compression							Tested according to ASTM C165
Classifying the flexibility of mineral fibre blankets	Flexible									Tested according to ASTM C1101
Corrosion mitigation										
Stress corrosion cracking	Pass, no cracks									Tested according to ASTM C692, ASTM C795
Corrosiveness of steel	Passed, Mass Loss Corrosion Rate (MLCR) not exceeding that of 5 ppm chloride solution on carbon steel coupon									Tested according to ASTM C1617, procedure A

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Other technical features

Dimensional tolerances	Tolerances according to ASTM C1728, for detailed values please refer to product range tables.	
Weather resistance	In all industrial applications the outer layer of the material must be protected with an adequate covering like metal jacketing or preformed UV-cured GRP (Glass-Reinforced Plastic) cladding. Please contact Technical Services for guidance on the temperature limitations and specific construction considerations which need to be made for each jacketing system.	
Health aspects	Neutral	
Hydrophobic	Yes	
Water vapour sorption	≤ 5% by weight	Tested according to ASTM C1104
Fungal resistance	No growth	Tested according to ASTM C1338
Storage	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight.	
Shelf (storage) life*6	Max. 3 years	

1. For temperatures above the published value, please contact Technical Services to request the corresponding technical information.
2. For operating temperatures above 400 °C (752 °F) a metallic foil barrier with 0.05 mm (0.002 inch) thickness must be additionally installed. For details please contact Technical Services.
3. ArmaGel HT is designed for application where the operating temperatures are above ambient. In the event that the operating temperatures are below ambient please consult our technical services for further information and support.
4. Thermal conductivity measured under a load of 1.5 kPa (0.22 psi).
5. Test performed with a preload of 13.8 kPa (2 psi).
6. Shelf life (maximum storage time) is limited in order to make sure that only currently manufactured products are applied on projects. This limitation is restricted solely to storage of the product and does not affect the lifetime of product after it has been installed.

Sheets

		Metric sizes				Imperial sizes			
		Nominal thickness	Width	Length	Content per roll	Nominal thickness	Width	Length	Content per roll
		[mm]	[m]	[m]	[sqm]	[in]	[in]	[ft]	[sq ft]
Standard Rolls	AGH-05-00/150S	5	1.5	16	24	0.2	59	52.5	258.3
	AGH-10-00/150S	10	1.5	8	12	0.4	59	26.2	129.2
	AGH-15-00/150S	15	1.5	6	9	0.6	59	19.7	96.9
	AGH-20-00/150S	20	1.5	4	6	0.8	59	13.1	64.6
Jumbo Rolls	AGH-05-00/150P	5	1.5	65	97.5	0.2	59	213.3	1049.5
	AGH-10-00/150P	10	1.5	40	60	0.4	59	131.2	645.8
	AGH-15-00/150P	15	1.5	26	39	0.6	59	85.3	419.8
	AGH-20-00/150P	20	1.5	20	30	0.8	59	65.6	322.9
Tolerances	Thickness tolerances			5 mm (0.2 in) nominal thickness 10 mm (0.4 in) nominal thickness 15 mm (0.6 in) nominal thickness 20 mm (0.8 in) nominal thickness		± 1 mm ± 2.5 mm ± 3 mm ± 4 mm			
	Width tolerances					± 3%			
	Length tolerances					± 5%			

ABOUT ARMACELL

As the inventors of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal, acoustic and mechanical solutions that create sustainable value for its customers. Armacell's products significantly contribute to global energy efficiency making a difference around the world every day. With 3,200 employees and 24 production plants in 16 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for high-tech and lightweight applications and next generation aerogel blanket technology.

For more information, please visit:
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