



INSULATION
JUST GOT EVEN BETTER

ArmaGel[®] XGH

Next-generation, flexible, aerogel blanket
for high-temperature applications

- // ASTM C1728 compliant
- // Hot conditions up to 650 °C (1200 °F)
- // Up to five times better thermal performance
than competing insulation materials
- // Mitigates the risk of corrosion under insulation (CUI)

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 **armacell[®]**
ArmaGel[®]

TECHNICAL DATA – ARMAGEL XGH

Brief description	ArmaGel XGH is a flexible aerogel insulation blanket suitable for elevated temperature applications with maximum operating temperatures up to 650 °C (1200 °F). ArmaGel XGH is compliant to ASTM C1728, Type III, Grade 1A.
Material type	Aerogel blanket
Colour	Grey
Special features	ArmaGel XGH 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 mm (0.2 in) and 10 mm (0.4 in) thickness, 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.
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 ^{*1/2/3/4/5}												
Max. service temperature	+650 °C		+1200 °F									Tested according to ASTM C411 and ASTM C447
Thermal conductivity												
Thermal conductivity ⁶ (metric units)	0m	+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 ⁶ (imperial units)	0m	+75	+100	+200	+300	+400	+500	+600	+700	[°F]	Tested according to ASTM C1763	
	$\lambda d \leq$	0.14	0.15	0.16	0.18	0.20	0.22	0.25	0.30	[Btu·in/(h·ft ² ·°F)]		
Temperature resistance												
Hot surface performance ^{*2/3/4}	Pass										Tested according to ASTM C411	
Linear shrinkage under soaking heat	< 2% in width and length										Tested according to ASTM C356	
Water absorption	Pass										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	A2- s1, d0. Non-combustible										According to EN 13501-1	
Density												
Nominal density	180 kg/m ³			11 lb/ft ³							Tested according to ASTM C303	
Mechanical properties												
Compressive strength ⁷	≥ 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	Pass										Tested according to ASTM C1617, procedure A	



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 ¹⁸	Max. 3 years	

- For temperatures above the published value, please contact Technical Services to request the corresponding technical information.
- 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.
- For live line installations, refer to the ArmaGel high-temperature application manual.
- For design/installation above 80mm thickness, contact Armacell technical services.
- ArmaGel XGH 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.
- Thermal conductivity measured under a load of 1.5 kPa (0.22 psi).
- Test performed with a preload of 13.8 kPa (2 psi).
- 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]
Jumbo Rolls	AXH-05-00/150P	5	1.5	54	81	0.2	59	180.5	888.0
	AXH-10-00/150P	10	1.5	30	45	0.4	59	98.4	484.4
Tolerances	Thickness tolerances	5 mm (0.2 in) nominal thickness				± 1 mm			
		10 mm (0.4 in) nominal thickness				± 2.5 mm			
	Width tolerances					± 3%			
	Length tolerances					± 5%			

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ABOUT ARMACELL

As the inventor of flexible foam for equipment insulation and a leading provider of engineered foams, Armacell develops innovative and safe thermal 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 more than 3,300 employees and 27 production plants in 19 countries, the company operates two main businesses, Advanced Insulation and Engineered Foams. Armacell focuses on insulation materials for technical equipment, high-performance foams for acoustic and lightweight applications, recycled PET products, next-generation aerogel technology and passive fire protection systems.

For more information, please visit:
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INSULATION
JUST GOT EVEN COOLER

ArmaGel[®] XGC

Flexible aerogel insulation blanket for
cold and cryogenic applications

- // ASTM C1728 Compliant
- // 5 and 10 mm thicknesses
- // Integrated zero-perm vapour barrier
- // Flexible at cryogenic temperatures

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TECHNICAL DATA – ARMAGEL XGC

Brief description	ArmaGel XGC is a flexible aerogel insulation blanket suitable for cold and cryogenic insulation applications. ArmaGel XGC is compliant with ASTM C1728 Type I, Grade 1B.
Material type	Aerogel insulation blanket with integrated zero-perm vapour barrier
Colour	Grey
Special features	ArmaGel XGC is intended for use in cold and cryogenic operating conditions. The product is suitable for use in multi-layer applications with other insulation products including ArmaSound® Industrial Systems.
Product range	Sheets in rolls, 5, 10 mm (0.2, 0.4 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	Cold and cryogenic insulation/protection of pipes, vessels, equipment and fittings in offshore, industrial (typically oil and gas) and process facilities.
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	
Temperature range¹									
Service temperature	Max. service temperature	+125 °C			+257 °F			Tested according to ASTM C411	
Thermal conductivity									
Thermal conductivity ² (metric units)	m	-129	-73.3	-17.8	+23.9	+37.8	+93.3	[°C]	Tested according to ASTM C177
	d ≤	0.014	0.015	0.016	0.017	0.017	0.019	[W/(m·K)]	
Thermal conductivity ² (imperial units)	m	-200	-100	0	+75	+100	+200	[°F]	
	d ≤	0.096	0.10	0.11	0.12	0.12	0.13	[Btu·in/(h·ft ² ·°F)]	
Temperature resistance									
Linear shrinkage under soaking heat	< 2% in width and length							Tested according to ASTM C356	
Water absorption	Pass							Tested according to ASTM C1763	
Fire performance & approvals									
Surface burning characteristics	≤ 25 flame spread index ≤ 50 smoke development							Tested according to ASTM E84	
Density									
Nominal density	165 kg/m ³		11.5 lb/ft ³					Tested according to ASTM C303	
Mechanical properties									
Compressive strength ³	≥ 5 psi/ 34.5 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	Pass							Tested according to ASTM C1617, procedure A	
Water vapour transmission of integrated vapour barrier	0.00 perm							Tested according to ASTM E96	

Other technical features

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 ⁴	Max. 3 years	

- For operating temperatures below -180 °C, special attention must be given to the system design and craftsmanship during installation to ensure that the material does not come in contact with liquid oxygen. For further information and support, please contact Technical Services.
- Thermal conductivity measured under a load of 1.5 kPa (0.22 psi).
- Test performed with a preload of 13.8 kPa (2 psi).
- 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]
Jumbo Rolls	AXC-05-00/150P	5	1.5	54	81	0.2	59	177.2	871.9
	AXC-10-00/150P	10	1.5	30	45	0.4	59	98.4	484.4
Tolerances	Thickness tolerances	5 mm (0.2 in) nominal thickness 10 mm (0.4 in) nominal thickness				± 1 mm ± 2.5 mm			
	Width tolerances					± 3%			
	Length tolerances					± 5%			

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