INSULATION JUST GOT EVEN COOLER

ArmaGel XGC

Flexible aerogel insulation blanket for combined cryogenic and dual-temperature applications

// ASTM C1728 compliant
// 5, 10 and 20 mm thicknesses
// Integrated zero-perm vapour barrier
// Flexible at cryogenic temperatures

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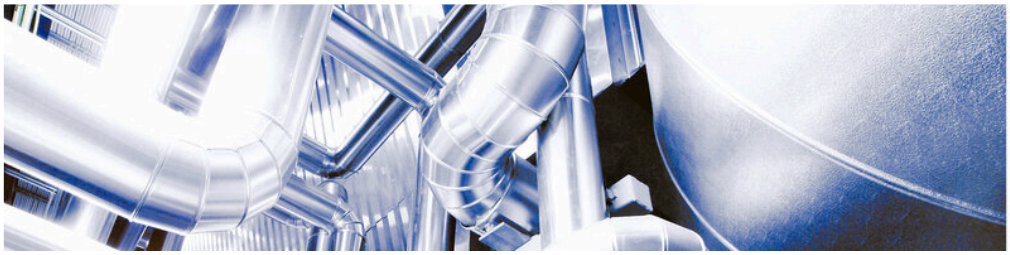


armacell®
ArmaGel®

CRYOGENIC AND DUAL-TEMPERATURE APPLICATIONS FROM -180°C TO +250°C

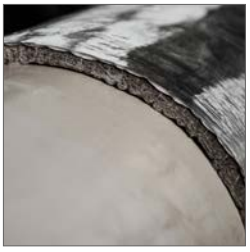
ArmaGel XGC

Our vision has always been to create cutting-edge, technical insulation solutions and components that conserve energy and make a difference around the world. That vision has now become a reality. Welcome to the future of insulation with ArmaGel XGC.

Insulation just got even cooler

ArmaGel XGC. Breakthrough cryogenic and dual-temperature aerogel blanket technology. Flexible, improved work safety. Cryogenic conditions down to -180°C (-292°F)*. ArmaGel XGC is the reliable solution for cryogenic and dual-temperature applications.

Cryogenic and dual-temperature



Flexible

Hydrophobic

Note:
ArmaGel XGC is compliant with ASTM C1728 Type I Grade 1B and Type IV Grade 1A with minimum use temperature of -196°C (-321°F). For operating temperatures below -180°C (-292°F), 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.

YOUR BENEFITS

// **Reduce installation cost**
Cuts easily and conforms to shapes. Safeguard maximum operational efficiency and lower labour costs.

// **Lower operational downtime**
Product removal is made simple, reducing both downtime and the need to purchase replacement insulation during regular maintenance cycles.

// **Superior thermal performance**
Offering up to 2 times superior thermal performance versus like-for-like competing insulation products.

// **Hydrophobic**
Repels liquid water helping to mitigate corrosion under insulation.

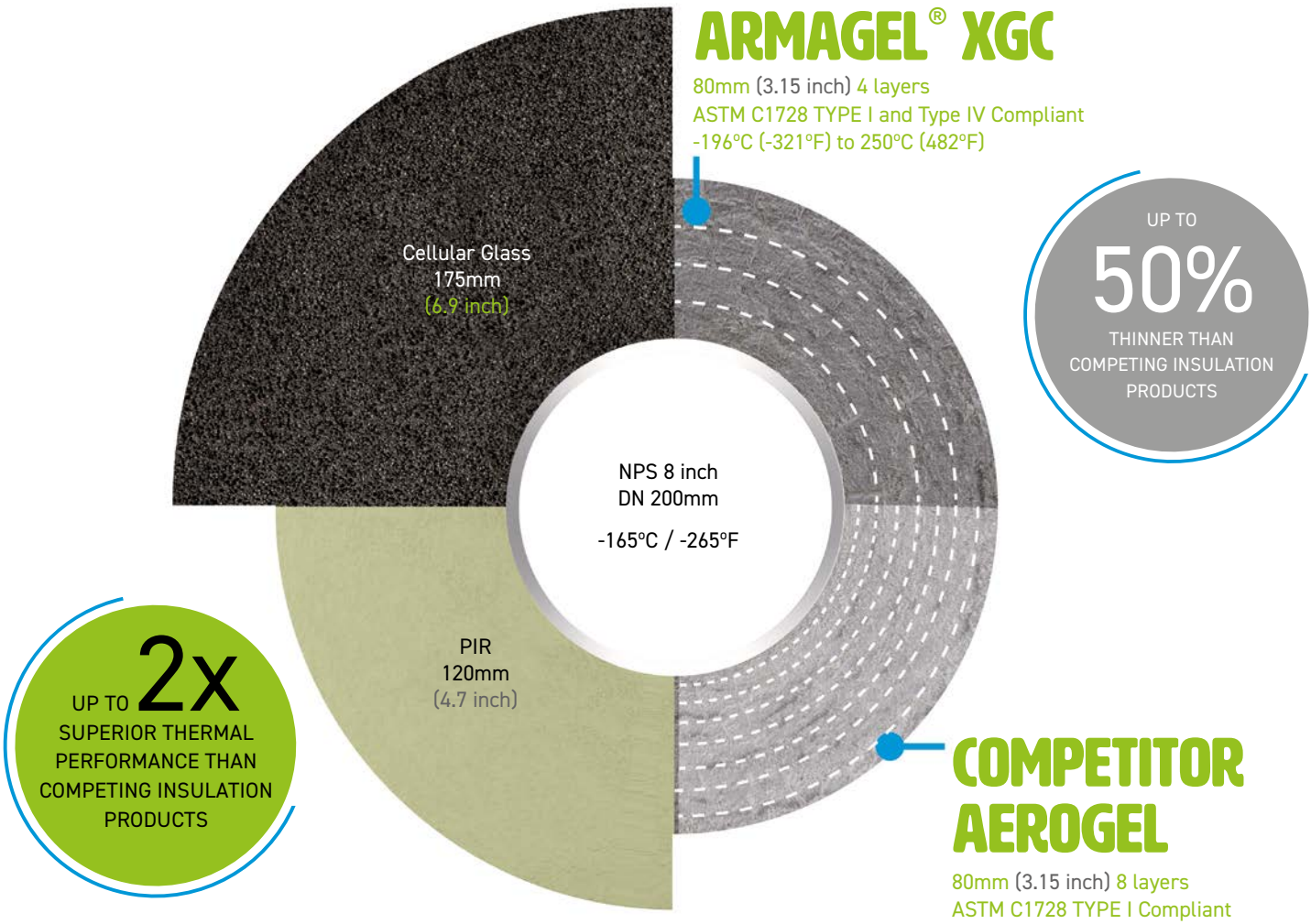
// **Ultra-thin and ultra-light**
Equal thermal performance at a fraction of the thickness. Improved handling and easier transportation.

// **Improved work safety**
Proprietary low-dust technology.

// **CUI defence**
Hydrophobicity enhances protection against corrosion under insulation (CUI).

// **Acoustic performance**
When used in a system configuration, ArmaGel XGC meets and exceeds the insertion loss classifications according to ISO 15665 at reduced thickness and/or weight*.

**compared to traditional systems*



NOTE: Insulation thickness to satisfy same condensation control criteria for all three designs

TECHNICAL DATA - ARMAGEL XGC

Brief description	ArmaGel XGC is a flexible aerogel insulation blanket suitable for cryogenic and dual-temperature insulation applications. ArmaGel XGC is compliant with ASTM C1728 Type I, Grade 1B & Type IV, Grade 1A.
Material type	Aerogel insulation blanket with integrated zero-perm vapour barrier.
Product colour range	Grey
Special features	The product is suitable for use in multi-layer applications including ArmaSound Industrial Systems. ArmaGel XGC is intended for use in cryogenic and cyclic operating conditions.
Product range	Sheets in rolls, 5, 10, 20 mm (0.2, 0.4, 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	Cold, cryogenic and dual-temperature 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). For further information please contact our Technical Services.

Property	Value / Assessment									Standard / Test method
Temperature range										
Service temperature[1,2]	Min. °C		Min. °F		Max. °C		Max. °F			ASTM C411
	-180		-292		250		482			
Thermal conductivity										
Declared thermal conductivity[3]	θm	-129°C (-200°F)	-73.3°C (-100°F)	-17.8°C (0°F)	+23.9°C (+75°F)	+37.8°C (+100°F)	+93.3°C (+200°F)	+149°C (+300°F)	+204°C (+400°F)	ASTM C177
	λd ≤ [W/(m·K)]	0,014	0,015	0,016	0,017	0,017	0,019	0,025	0,029	
	k ≤ [Btu·in/(h·ft²·°F)]	0,096	0,10	0,11	0,12	0,12	0,13	0,17	0,20	
Temperature resistance										
Linear shrinkage under soaking heat	< 2% in width and length									ASTM C356
Fire Performance and Approvals										
Reaction to fire	B-s1,d0									EN 13501-1
Surface burning characteristics	≤ 25 flame spread index ≤ 50 smoke development									ASTM E84
Surface flammability[4]	Compliant to IMO Part 5									IMO 2010 FTP Code, Part 5
Smoke generation and toxicity test[4]	Compliant to IMO Part 2									IMO 2010 FTP Code, Part 2
Resistance to water vapour										
Water vapour sorption	≤ 5% by weight									ASTM C1104
Water vapour permeance of integrated vapour barrier	0.00 perm									ASTM E96
Resistance to water										
Hydrophobic	Yes									
Water absorption	Pass									ASTM C1763
Corrosion mitigation										
Corrosiveness to steel	Pass									ASTM C1617, Procedure A
Stress corrosion cracking	Pass, no cracks									ASTM C692, ASTM C795

Property	Value / Assessment	Standard / Test method
Physical attributes		
Nominal density	170 kg/m³ (10.6 lb/ft³)	ASTM C303
Mechanical properties		
Compressive strength[5]	≥ 5 psi / 34.5 kPa at 10% compression	ASTM C165
Flexibility of insulation blankets	Flexible	ASTM C1101
Weather and UV resistance		
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 and environment		
Fungal growth	No growth	ASTM C1338
Health aspects	Neutral	
Other technical features		
Shelf life[6]	Max. 3 years	
Storage	Material shall be stored indoors, in clean and dry conditions, away from direct sunlight.	

[1] ArmaGel XGC is compliant with ASTM C1728 Type I Grade 1B and Type IV Grade 1A with minimum use temperature of -196°C.

[2] 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.

[3] Measured under a load of 1.5 kPa (0.22 psi).

[4] Only applicable for ArmaGel XGC IMO grade.

[5] Test performed with a preload of 13.8 kPa (2 psi).

[6] Shelf life (maximum storage time) is limited to ensure that only currently manufactured products are installed 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.

Roll - standard. Items beginning with AXCM are IMO grade

Item	Thickness [mm]	Thickness [Inch]	Width (m)	Width [inch]	Length [m]	Length [ft]	Content [metric]	Content [imperial]
AXC-05-00/150S	5	0,2	1,5	59	18	59,1	27 m²	290.6 ft²
AXC-10-00/150S	10	0,4	1,5	59	10	32,8	15 m²	161.5 ft²
AXC-20-00/150S	20	0,8	1,5	59	5	16,4	7.5 m²	80.7 ft²
AXCM-05-00/150S	5	0,2	1,5	59	18	59,1	27 m²	290.6 ft²
AXCM-10-00/150S	10	0,4	1,5	59	10	32,8	15 m²	161.5 ft²
AXCM-20-00/150S	20	0,8	1,5	59	5	16,4	7.5 m²	80.7 ft²

Other information	
Thickness tolerance	5 mm (0.2 in) nominal thickness: ± 1 mm 10 mm (0.4 in) nominal thickness: ± 2.5 mm 20 mm (0.8 in) nominal thickness: ± 5 mm
Length tolerance	± 5%
Width tolerance	± 3%
Remarks	Items beginning with AXCM are IMO grade.

Roll - jumbo. Items beginning with AXCM are IMO grade

Item	Thickness [mm]	Thickness [Inch]	Width (m)	Width [inch]	Length [m]	Length [ft]	Content [metric]	Content [imperial]
AXC-05-00/150P	5	0,2	1,5	59	54	177,2	81 m²	871.9 ft²
AXC-10-00/150P	10	0,4	1,5	59	30	98,4	45 m²	484.4 ft²
AXC-20-00/150P	20	0,8	1,5	59	15	49,2	22.5 m²	242.2 ft²
AXCM-05-00/150P	5	0,2	1,5	59	54	177,2	81 m²	871.9 ft²
AXCM-10-00/150P	10	0,4	1,5	59	30	98,4	45 m²	484.4 ft²

Other information	
Thickness tolerance	5 mm (0.2 in) nominal thickness: ± 1 mm 10 mm (0.4 in) nominal thickness: ± 2.5 mm 20 mm (0.8 in) nominal thickness: ± 5 mm
Length tolerance	± 5%
Width tolerance	± 3%
Remarks	Items beginning with AXCM are IMO grade.

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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 insulation solutions that create sustainable value for its customers. Armacell's products significantly contribute to driving energy efficiency worldwide. With more than 3,100 employees and 26 production plants in 20 countries, Armacell 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.

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For more information, please visit:
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