INSULATION
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ArmaGel™ DT

Flexible aerogel insulation blanket for cryogenic and dual-temperature applications

// Operating temperatures from -180 °C (-292 °F) to +250 °C (+482 °F)
// More choice: 5, 10, 15 and 20 mm thicknesses
// Integrated zero-perm vapour barrier
// Flexible at cryogenic temperatures

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TECHNICAL DATA – ARMAGEL DT

Brief description	ArmaGel DT is a flexible aerogel insulation blanket suitable for applications with operating temperatures between -180 °C (-292 °F) and +250 °C (+482 °F)
Material type	Aerogel insulation blanket with integrated zero-perm vapour barrier
Colour	Grey
Special features	ArmaGel DT is intended for use in cryogenic and cyclic operating conditions between -180 °C (-292 °F) and +250 °C (+482 °F). 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, 15 and 20 mm (0.20, 0.39, 0.59, 0.79 in) thickness and width of 1.5 m (59.00 in). For further details, please refer to the product range tables at the end of this document. Also available in 0.75 m width (29.53 in) upon request.
Applications	Thermal insulation/protection of pipes, vessels and ducts (including elbows, fittings, flanges etc.) in cryogenic, offshore, industrial (typically oil and gas) and process equipment facilities. ArmaGel DT 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
Temperature range*1								
Service temperature	Max. service temperature		+250 °C			+482 °F		Tested according to ASTM C411
	Min. service temperature		-180 °C			-292 °F		
Thermal conductivity								
Thermal conductivity*1 (metric units)	θm	-129	-73.3	-17.8	+23.9	+37.8	+93.3	[°C]	Tested according to ASTM C177
	λd ≤	0.015	0.018	0.020	0.021	0.022	0.023	[W/(m·K)]
Thermal conductivity*1 (imperial units)	θm	-200	-100	0	+75	+100	+200	[°F]
	λd ≤	0.10	0.12	0.14	0.15	0.15	0.16	[Btu·in/(h·ft²·°F)]
Temperature resistance								
Linear shrinkage under soaking heat	< 2% in width and length							Tested according to ASTM C356
Water absorption	Maximum 8%							Tested according to ASTM C1763
Fire performance & approvals								
Surface burning characteristics	< 25 flame spread index < 50 smoke developed index							Tested according to ASTM E84
International Maritime Organisation (IMO)	Compliant to IMO Part 2 (smoke generation and toxicity) Compliant to IMO Part 5 (surface flammability)							Tested according to IMO 2010 FTP Code
Marine approval	Compliant with Module B of Directive 2014/90/EU. Certified by Bureau Veritas.							Tested according to MED 2014/90/EU Module B
Density								
Density	160 to 240 kg/m³		10 to 15 lb/ft³					Tested according to ASTM C303
Mechanical properties								
Compressive strength*2	>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	Insulation for use over austenitic steel: no cracks, passed							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
Water vapour transmission rate 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*[3]	Max. 3 years	

1. For temperatures below or above those published please contact Technical Services to request the corresponding technical information.
2. Test performed with a preload of 2 psi.
3. 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	**AGD-05-00/150S**	5	1.50	13.00	19.50	0.20	59.00	42.65	209.90
	AGD-10-00/150S	10	1.50	8.00	12.00	0.39	59.00	26.25	129.17
	AGD-15-00/150S	15	1.50	5.20	7.80	0.59	59.00	17.06	83.96
	AGD-20-00/150S	20	1.50	4.00	6.00	0.79	59.00	13.13	64.59
Jumbo Rolls	**AGD-05-00/150P**	5	1.50	65.00	97.50	0.20	59.00	213.26	1049.48
	AGD-10-00/150P	10	1.50	40.00	60.00	0.39	59.00	131.24	645.84
	AGD-15-00/150P	15	1.50	26.00	39.00	0.59	59.00	85.31	419.80
	AGD-20-00/150P	20	1.50	20.00	30.00	0.79	59.00	65.62	322.92

Tolerances According to ASTM C1728	**Thickness tolerances**	5 mm (0.20 in) nominal thickness	5.0 - 7.0 mm
		10 mm (0.39 in) nominal thickness	10.0 -12.5 mm
		15 mm (0.59 in) nominal thickness	15.0 - 17.5 mm
		20 mm (0.79 in) nominal thickness	20.0 - 22.5 mm
	Width tolerances		± 3%
	Length tolerances		± 5%

* Rolls of 0.75 m (29.53 in) width are available upon request.

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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 3,135 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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