



INSULATION  
JUST GOT COOLER

# ArmaGel<sup>®</sup> DT

Flexible aerogel insulation  
blanket for cryogenic and  
dual-temperature applications

- // ASTM C1728 Compliant
- // More choice: 5, 10, 15 and 20 mm thicknesses
- // Integrated zero-perm vapour barrier
- // Flexible at cryogenic temperatures

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ArmaGel<sup>®</sup>

## TECHNICAL DATA – ARMAGEL DT

|                   |   |
|-------------------|---|
| Brief description | ArmaGel DT is a flexible aerogel insulation blanket suitable for cryogenic and dual-temperature insulation applications. ArmaGel DT is compliant with ASTM C1728 Type IV, Grade 1A.   |
| 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. 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 [0.2, 0.4, 0.6, 0.8] 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 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   |
|--|--|--|
| <b>Temperature range<sup>1</sup></b>                   |  |  |
| Service temperature                                    | Max. service temperature   | +250 °C<br>+482 °F   |
|  | Min. service temperature <sup>1</sup>  | -180/-196 °C<br>-292/-321 °F   |
| <b>Thermal conductivity</b>                            |  |  |
| Thermal conductivity <sup>2</sup> (metric units)       | θm   | -129 -73.3 -17.8 +23.9 +37.8 +93.3 +149 +204 [°C]                        |
|  | λd ≤   | 0.015 0.017 0.020 0.021 0.022 0.023 0.025 0.029 [W/(m·K)]                |
| Thermal conductivity <sup>2</sup> (imperial units)     | θm   | -200 -100 0 +75 +100 +200 +300 +400 [°F]                                 |
|  | λd ≤   | 0.10 0.12 0.14 0.14 0.15 0.16 0.17 0.20 [Btu·in/(h·ft <sup>2</sup> ·°F)] |
| <b>Temperature resistance</b>                          |  |  |
| Linear shrinkage under soaking heat                    | < 2% in width and length   | Tested according to ASTM C356  |
| Water absorption                                       | Maximum 8%   | Tested according to ASTM C1763   |
| <b>Fire performance &amp; approvals</b>                |  |  |
| Surface burning characteristics                        | ≤ 25 flame spread index<br>≤ 50 smoke development  | Tested according to ASTM E84   |
| International Maritime Organisation (IMO)              | Compliant to IMO Part 2 (smoke generation and toxicity)<br>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.<br>Certified by Bureau Veritas.                             | Tested according to MED 2014/90/EU Module B                              |
| <b>Density</b>   |  |  |
| Nominal density  | 185 kg/m <sup>3</sup><br>11.5 lb/ft <sup>3</sup>   | Tested according to ASTM C303  |
| <b>Mechanical properties</b>                           |  |  |
| Compressive strength <sup>3</sup>                      | ≥ 5 psi/ 34.5 kPa<br>at 10% compression  | Tested according to ASTM C165  |
| Classifying the flexibility of mineral fibre blankets  | Flexible   | Tested according to ASTM C1101   |
| <b>Corrosion mitigation</b>                            |  |  |
| 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 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 <sup>4</sup> | Max. 3 years   |                                |

- ArmaGel DT is compliant with ASTM C1728 Type IV, Grade 1A with minimum use temperature of -196 °C. 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]          |
| <b>Standard Rolls</b> | <b>AGD-05-00/150S</b>       | 5   | 1.5   | 13     | 19.5             | 0.2                                    | 59    | 42.7   | 209.9            |
|                       | <b>AGD-10-00/150S</b>       | 10  | 1.5   | 8      | 12               | 0.4                                    | 59    | 26.2   | 129.2            |
|                       | <b>AGD-15-00/150S</b>       | 15  | 1.5   | 5.2    | 7.8              | 0.6                                    | 59    | 17.1   | 84.0             |
|                       | <b>AGD-20-00/150S</b>       | 20  | 1.5   | 4      | 6                | 0.8                                    | 59    | 13.1   | 64.6             |
| <b>Jumbo Rolls</b>    | <b>AGD-05-00/150P</b>       | 5   | 1.5   | 65     | 97.5             | 0.2                                    | 59    | 213.3  | 1049.5           |
|                       | <b>AGD-10-00/150P</b>       | 10  | 1.5   | 40     | 60               | 0.4                                    | 59    | 131.2  | 645.8            |
|                       | <b>AGD-15-00/150P</b>       | 15  | 1.5   | 26     | 39               | 0.6                                    | 59    | 85.3   | 419.8            |
|                       | <b>AGD-20-00/150P</b>       | 20  | 1.5   | 20     | 30               | 0.8                                    | 59    | 65.6   | 322.9            |
| <b>Tolerances</b>     | <b>Thickness tolerances</b> | 5 mm (0.2 in) nominal thickness<br>10 mm (0.4 in) nominal thickness<br>15 mm (0.6 in) nominal thickness<br>20 mm (0.8 in) nominal thickness |       |        |                  | ± 1 mm<br>± 2.5 mm<br>± 3 mm<br>± 4 mm |       |        |                  |
|                       | <b>Width tolerances</b>     |   |       |        |                  | ± 3%                                   |       |        |                  |
|                       | <b>Length tolerances</b>    |   |       |        |                  | ± 5%                                   |       |        |                  |

All data and technical information are based on results achieved under the specific conditions defined according to the testing standards referenced. Despite taking every precaution to ensure that said data and technical information are up to date, Armacell does not make any representation or warranty, express or implied, as to the accuracy, content or completeness of said data and technical information. Armacell also does not assume any liability towards any person resulting from the use of said data or technical information. Armacell reserves the right to revoke, modify or amend this document at any moment. It is the customer's responsibility to verify if the product is suitable for the intended application. The responsibility for professional and correct installation and compliance with relevant building regulations lies with the customer. This document does not constitute nor is part of a legal offer to sell or to contract.

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## ABOUT ARMACELL

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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:  
[www.armacell.com/armagel](http://www.armacell.com/armagel)

