

# Armaflex® LTD

FEF INSULATION FOR CRYOGENIC AND  
LOW TEMPERATURE APPLICATIONS  
DOWN TO -180 °C



- Stays flexible at low temperatures
- Reduces the risk of crack development and propagation
- Reduces the risk of corrosion under insulation (CUI)
- Protects against mechanical impact and shock
  
- Low thermal conductivity
- Low glass transition temperature
- Easy installation even to complex shapes
- Less wastage compared to rigid / pre-fabricated pieces

# Technical Data - Armaflex LTD

Brief description	Highly-flexible, closed-cell cryogenic insulation material for use in Armaflex® Cryogenic Systems, providing reliability and performance on industrial process pipework and tanks.
Material type	Elastomeric foam based on synthetic rubber. Factory made flexible elastomeric foam (FEF) according to EN 14304.
Colour	Blue, Grey
Material Special Information	Armaflex® LTD is suitable for a range of operating conditions including natural gas installations. However, it is not recommended for application to process pipelines and equipment carrying liquid oxygen or gaseous oxygen lines and equipment running above 15 bar pressure or above 60 °C. For detailed information or advice please refer to our Customer Service Centre.
Applications	Insulation / protection for pipes, tanks, vessels (incl. elbows, flanges etc.) in production plants for petrochemicals, industrial gases, and agricultural chemicals. Product specially designed for use on the import/export pipelines and process areas of LNG facilities.
Special Features	A high-performance thermal insulation material designed to meet the demands of low-temperature environments. Armaflex® LTD is part of Armaflex® Cryogenic Systems, providing low temperature flexibility to the system.
Assembly	The Armaflex® Installation manual should be consulted before assembly. Please consult our Customer Service Centre.
Remarks	EC Certificate of Conformity no. 0543 of Güteschutzgemeinschaft Hartschaum e.V. , Celle

Property	Value/Assessment			Special Remark
<b>Temperature Range</b>				
Temperature Range	max. service temperature	+110 °C	(+ 85 °C if sheet is glued to the object with its whole surface)	Tested according to EN 14706, EN 14707 and EN 14304
	min. service temperature <sup>1</sup>	-180 °C		
<b>Thermal Conductivity</b>				
Thermal Conductivity	$\vartheta_m$	0	°C	Declared according to EN ISO 13787 Tested according to EN 12667 EN ISO 8497
	Sheets & Tubes (25mm)	$\lambda \leq 0.040$	W/(m · K)	
<b>Water vapour diffusion resistance</b>				
Water vapour diffusion resistance	For details on system performance please contact our Customer Service Centre			
<b>Fire performance</b>				
Other Fire Class	BS 476 Part 7 ASTM E84	Class 1 Class A (< 25 flame spread)		BS 476 Class 1 Approved by Lloyds
<b>Other technical features</b>				
Density	60 - 75 kg/m <sup>3</sup>			Tested according to ISO 845
Dimensions and tolerances	In accordance with EN 14304, table 1			Tested according to EN 822, EN 823, EN 13467
Water absorption <sup>2</sup>	$\leq 0.1 \%$			Tested according to ASTM C534 / C209
Closed cell content	> 90 %			Declared on the basis of water absorption test
Compression deflection @ 25%	> 10 kPa			Tested according to ISO 6916-1
pH Value	7 - 9			ISO 6916-1
Glass Transition Temperature	Below -70 °C			Dynamic Mechanical Analysis (DMA)
Leachable Chlorides	< 80 ppm			Tested according to EN 13468, ASTM C871

1. For some applications below -110 °C the system is installed with an anti-abrasive foil, bonded to the inner surface layer. Please consult our customer service for further information.

2. Based on single test results which are not monitored in regular frequency. Can be used for information only.

All data and technical information are based on results achieved under typical application conditions. Recipients of this information should, in their own interest and responsibility, clarify with us in due time whether or not the data and information apply to the intended application area. Installation instructions are available in our Armaflex installation manual. Please consult our Customer Service Center before insulating stainless steels. Armaflex 520 or Armaflex HT 625 Adhesive must be used to guarantee proper installation. For outside use, Armaflex should be protected with a suitable outer covering within 3 days of installation. For applications related to the processing or storage of oxygen, please consult our technical services department. Armacell takes every precaution to ensure the accuracy of the data provided in this document and all statements, technical information and recommendations contained within are believed to be correct. However, Armacell cannot guarantee that the data are 100 % accurate. Furthermore, minor deviations in colour, quality and dimensions are unavoidable and in most cases do not influence the performance of the product. Armacell expressly disclaims any and all liability in relation to any results obtained or arising from any use of the product or reliance on such information. No warranty of fitness for any particular purpose, warranty of merchantability or any other warranty, expressed or implied, is made concerning the goods described or the information provided herein. All the statements and technical information within this document should be read in conjunction with the customer's own specification. It is the responsibility of the recipient to inform all involved parties about the content of these documents. The described and recommended methods should be strictly followed. If there is a requirement to deviate from our recommendations, please contact us in advance to discuss possible suitable alternatives. Armacell will not be liable for any claim resulting from a failure to observe our specification or any other agreed solutions and from non-observance of the customer's specification. For temperatures above +110 °C please contact our Customer Service Centre to request the corresponding technical information.

## Technical Data - Armaflex LTD Anti-abrasive foil

Brief description	Insulation laminate used as a vapour barrier and reflection layer for insulation facings.		
Material type	Foil construction: - 12 mic Alufoil - Glass scrim 2/2 - 22 gsm LDPE Coating		
Product Range	Rolls, with the following make up: Width: 1,000 mm Core: 76 mm, cardboard Length: 25 & 50 m		
<b>Property</b>	<b>Value/Assessment</b>		<b>Special Remark</b>
<b>Water vapour diffusion resistance</b>			
Water vapour diffusion resistance	Water Vapour Permeability	< 0.03 gsm/24h	DIN 52 122
<b>Other technical features</b>			
Weight	Approx. 70 gsm		EN 22 286
Tensile strength	MD 250 N/50mm CD 250 N/50 mm		ISO 527-3 ISO 527-3
Elongation	MD 4% CD 4%		DIN 53 354 DIN 53 354
Infrared reflection	Approx. 85%		

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