

### INSTALL IT. TRUST IT.

### HT/ArmaFlex

Flexible elastomeric insulation material specially purposed for high temperature applications

applications up to +150 °C

// System approach with fit-for-purpose ArmaFlex HT625



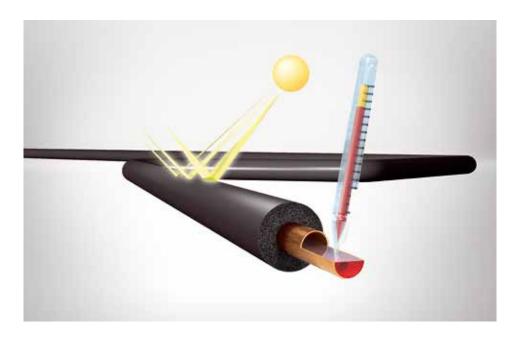


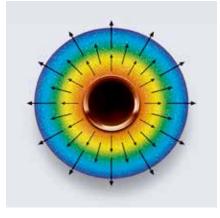




# HT/ArmaFlex

## THE EXPERT FOR HIGH TEMPERATURE





HT/ArmaFlex® is a flexible elastomer insulation material with exceptional resistance to UV radiation and high temperatures. Its closed cell structure and low thermal conductivity keep water vapour from diffusing in and reduce energy losses, protecting and optimising the efficiency and life time expectancy of the installation. While remaining flexible at application temperatures of up to 150°C, HT/ArmaFlex® is dust and fibre free and easy to install without special tools. The product does not need additional jacketing, does not degrade in sunlight and withstands incidental oil contact.

Thanks to the thermal properties of the insulation, the heat flow from pipelines insulated with HT/ArmaFlex® is kept at its utmost minimum. The evenly spread, homogenous and longterm stable closed cell structure prevents heat flow on the way of convection, ensuring very low thermal conductivity of the insulation material. This to keep the outer surface temperature at a low level and prevents unnecessary heat losses. Because of the flexibility of HT/ArmaFlex®, the huge temperature gradient of the thickness of insulation does not result in any internal stress.

#### TECHNICAL DATA - HT/ARMAFLEX

Brief description	HT/ArmaFlex is a highly flexible, closed-cell insulation material with resistance to UV radiation.								
Material type	Factory-made flexible elastomeric foam based on ethylene propylene diene methylene (EPDM), according to EN 14304.								
Product colour range	Black								
Special features	very good durability even thinkable installations, advance. Therefore, ins	UV resistance testing regarding of these materials showed excellent results. When used on outdoor applications, the materials showed very good durability even under UV exposure. However, due to the unpredictable nature of outdoor conditions in the whole variety of thinkable installations, there might be occasional weathering influences on the consistence of the material, which cannot be tested in advance. Therefore, installations in extreme environments (regions of extreme weather conditions like high mountains etc.) cannot be recommended. In case of doubt, please contact our Customer Service.							
Applications	Thermal insulation of p temperature lines.	nermal insulation of pipes, vessels and ducts in solar collectors (including outdoors), motor vehicles, hot gas lines, steam lines and dual imperature lines.							
Installation		naFlex application manual a eliable and seamless instal	nd more information is available in Armacell' ation.	s Technical Bulletin No. 71. Use ArmaFlex					
Property	Value / Assessment			Standard / Test method					
Temperature range									
Service temperature <sup>1,2</sup>	Range	Min. °C	Max. °C³	EN 14706, EN 14707, EN					
	Full range	-50	150	14304					
Thermal conductivity									
Declared thermal conductivity	θm		40°C	EN ISO 13787, EN 12667,					
	λd ≼ [W/(m⋅K)]		0.042	EN ISO 8497					
	Range		Tubes						
	Formula		$\lambda = [36.92 + 0.125 \cdot \theta m + 0.0008 \cdot (\theta m-30)]$	[ <sup>2</sup> ] / 1000					
Declared thermal conductivity	θт		40°C	EN ISO 8497, EN ISO					
	λd ≤ [W/(m·K)]		0.045	13787, EN 12667					
	Range		Sheets / Tapes						
	Formula		$\lambda = [39.92 + 0.125 \cdot \theta m + 0.0008 \cdot (\theta m - 30)]$	2] / 1000					
Fire Performance and Approvals	5								
Reaction to fire	D(L)-s3,d0 (tubes) D-s3,d0 (sheets, tape)			EN 13501-1, EN ISO 11925-2, EN 13823					
UL standards									
UL 94 V-0 <sup>4</sup>	Pass			IEC 60695-11-10					
Fire performance									
Practical fire behaviour	Self-extinguishing, does	not drip, does not spread f	ames.						
Others	Class 1	BS 476 Part 7							
Resistance to water vapour									
Water vapour diffusion resistance factor	<ul><li>≥ 4000 (tubes)</li><li>≥ 3000 (sheets, tapes)</li></ul>	EN 12086, EN 13469							
Physical attributes									
Dimensions and tolerances	In accordance with EN 14	EN 822, EN 823, EN 13467							
Weather and UV resistance									
UV resistance <sup>5</sup>	Very good			EN ISO 4892-2					

Property	Value / Assessment	Standard / Test method
Health and environment		
Volatile organic compounds (VOC) content	Fulfills all VOC requirements (French, Italian, Belgian, German AgBB, Blauer Engel and Eurofins Indoor Air Comfort GOLD).	ISO 16000 Parts 3, 6 & 9
Environmental Product Declaration (EPD)	Type III Environmental Product Declaration (EPD): Declaration number "EPD-ARM-20200222-IBA1-EN", Institut Bauen und Umwelt e.V. (IBU)	
Green building assessment	Meets the sustainable construction requirements for LEED v4.1, BREEAM international, WELL v2 and DGNB.	
Additional features	SCCP, MCCP-free	
Other technical features		
AGI designation code	Tubes: 36.12.05.09.02 Sheets: 36.07.05.09.02	
Shelf life <sup>6</sup>	Tape, self-adhesive: 1 year	
Storage	Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0°C to 35°C).	

For temperatures above +125 °C or below -50 °C, please contact our Customer Service Centre to request for the corresponding technical information.

<sup>2</sup>At high service temperatures, a certain hardening process may start on the inner surface of the material. Investigations have shown that these changes have no impact on the good physical and fire protection properties of the material, provided the material is installed in a correct way with all its joints properly sealed. For specific applications please consult our technical service.  $^{3}\text{+}85~^{\circ}\text{C}\text{,}$  for products with a self-adhesive layer.

 $<sup>^4</sup>$  Only for products without self-adhesive-layer.

<sup>5</sup> Extended exposure to certain conditions could result in aesthetic changes to insulation material. This includes examples such as minor discolouration, surface cracks or hardening of inner surface material due to extended exposure to high service line temperatures. These physical changes do not affect the technical performance of the insulation material, such as thermal conductivity and behaviour in case of a fire. For further information, please contact our Technical Service department.

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.

#### Tube - standard. 2m Length.

10 mm				13 mm					
Item	Inner diameter (minimum) [mm]	Inner diameter (maximum) [mm]	Content [metric]	Pipe Ø [mm]	Item	Inner diameter (minimum) [mm]	Inner diameter (maximum) [mm]	Content [metric]	
HT-10X010	11	14	192 m	10	HT-13X010		14	140 m	
HT-10X012	13	16	172 m	12	HT-13X012	13	16	130 m	
HT-10X015	16	19	144 m	15	HT-13X015	16	19	112 m	
HT-10X018	19	22	130 m	18	HT-13X018	19	22	98 m	
HT-10X022	23	26	108 m	22	HT-13X022	23	26	84 m	
HT-10X028	29	32	82 m	28	HT-13X028	29	32	64 m	
HT-10X035	36	39	60 m	35	HT-13X035	36	39	50 m	
HT-10X042	43	46	50 m	42	HT-13X042	43	46	40 m	
-	-	-	-	48	HT-13X048	49	52	32 m	
-	-	-	-	54	HT-13X054	55	58	32 m	
-	-	-	-	60	HT-13X060	61	64	28 m	
-	-	-	-	76	HT-13X076	77	80	24 m	
-	-	-	-	89	HT-13X089	90	93	18 m	
ion									
rance									
Length tolerance ± 1			± 1,5 %						
	HT-10X010 HT-10X012 HT-10X015 HT-10X018 HT-10X022 HT-10X028 HT-10X035 HT-10X042	(minimum)	[minimum]         [maximum]           HT-10X010         11         14           HT-10X012         13         16           HT-10X018         19         22           HT-10X022         23         26           HT-10X028         29         32           HT-10X035         36         39           HT-10X042         43         46           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -           -         -         -	(minimum) [mm]         (maximum) [metric]           HT-10X010         11         14         192 m           HT-10X012         13         16         172 m           HT-10X015         16         19         144 m           HT-10X018         19         22         130 m           HT-10X022         23         26         108 m           HT-10X028         29         32         82 m           HT-10X035         36         39         60 m           HT-10X042         43         46         50 m           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         -         -         -           -         - </td <td>  Item</td> <td>  Item</td> <td>  Item</td> <td>  Item                                      </td>	Item	Item	Item	Item	

#### Tube - standard. 2m Length.

19 mm					25 mm					
Item	Inner diameter (minimum) [mm]	Inner diameter (maximum) [mm]	Content [metric]	Pipe Ø [mm]	Item	Inner diameter (minimum) [mm]	Inner diameter (maximum) [mm]	Content [metric]		
HT-19X012	13	16	80 m	15	HT-25X015	16	19	40 m		
HT-19X015	16	19	64 m	18	HT-25X018	19	22	36 m		
HT-19X018	19	22	58 m	22	HT-25X022	23	26	36 m		
HT-19X022	23	26	50 m	28	HT-25X028	29	32	32 m		
HT-19X028	29	32	48 m	35	HT-25X035	36	39	24 m		
HT-19X035	36	39	32 m	42	HT-25X042	43	46	20 m		
HT-19X042	43	46	24 m	48	HT-25X048	49	52	16 m		
HT-19X048	49	52	22 m	54	HT-25X054	 55	58	16 m		
HT-19X054	55	58	18 m	60	HT-25X060	61	64	16 m		
HT-19X060	61	64	16 m	76	HT-25X076	77	80	12 m		
HT-19X064	65	68	16 m	89	HT-25X089	90	93	12 m		
HT-19X076		80	18 m	-	-	-	-	-		
HT-19X089	90	93	16 m	-	-	-	-	-		
on										
ance										
ce		± 1,5 %								
	HT-19X012 HT-19X015 HT-19X018 HT-19X022 HT-19X028 HT-19X042 HT-19X044 HT-19X044 HT-19X060 HT-19X064 HT-19X076	minimum   mm   mm   mm   mm   mm   mm   mm	[minimum]         [maximum]           HT-19X012         13         16           HT-19X015         16         19           HT-19X018         19         22           HT-19X022         23         26           HT-19X035         36         39           HT-19X042         43         46           HT-19X048         49         52           HT-19X054         55         58           HT-19X060         61         64           HT-19X076         77         80           HT-19X089         90         93           ion         10 - 13 mm ± 1, 19 - 25 mm ± 2, 19 - 25	(minimum) [mm]         (maximum) [metric]           HT-19X012         13         16         80 m           HT-19X015         16         19         64 m           HT-19X018         19         22         58 m           HT-19X022         23         26         50 m           HT-19X028         29         32         48 m           HT-19X035         36         39         32 m           HT-19X042         43         46         24 m           HT-19X048         49         52         22 m           HT-19X054         55         58         18 m           HT-19X060         61         64         16 m           HT-19X076         77         80         18 m           HT-19X089         90         93         16 m           ion         10 - 13 mm ± 1,5 mm m ± 2,5 mm	Item	Item	Item         Inner diameter [minimum] [mm]         Inner diameter [maximum]         Content [metric]         Pipe Ø [mm]         Item         Inner diameter [minimum]           HT-19X012         13         16         80 m         15         HT-25X015         16           HT-19X015         16         19         64 m         18         HT-25X018         19           HT-19X018         19         22         58 m         22         HT-25X022         23           HT-19X022         23         26         50 m         28         HT-25X028         29           HT-19X035         36         39         32 m         42         HT-25X042         43           HT-19X042         43         46         24 m         48         HT-25X048         49           HT-19X048         49         52         22 m         54         HT-25X054         55           HT-19X054         55         58         18 m         60         HT-25X060         61           HT-19X060         61         64         16 m         76         HT-25X076         77           HT-19X076         77         80         18 m         -         -         -           HT-19X089 <td< td=""><td>  Item                                      </td></td<>	Item		

#### Roll - standard

Thickness [mm]	Width (m)	Length [m]	Content [metric]
10	1	10	10 m²
13	1	8	8 m²
19	1	6	6 m <sup>2</sup>
25	1	4	4 m <sup>2</sup>
32	1	3	3 m²
10 - 19 mm ± 1,5 mm 25 - 32 mm ± 2,0 mm			
	10 13 19 25 32 10 - 19 mm ± 1,5 mm	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	10 1 10 10 10 11 10 11 10 13 1 1 1 10 11 11 11 11 11 11 11 11 11 11

Length tolerance

+ 5 % - 1,5 %

#### Coil

13 mm				19 mm				
Pipe Ø [mm]	Item	Length [m]	Content [metric]	Pipe Ø [mm]	Item	Length [m]	Content [metric]	
15	HT-13X015/E	26	26 m	15	HT-19X015/E	16	16 m	
18	HT-13X018/E	22	22 m	18	HT-19X018/E	14	14 m	
22	HT-13X022/E	18	18 m	22	HT-19X022/E	12	12 m	
Other informatio	on							
Thickness tolera	nce	10 - 13 mm ± 1,5 19 - 25 mm ± 2,5						
Length tolerance ± 1,5 %								

#### Tape - insulation

Item	Thickness [mm]	Width [mm]	Length [m]	Content [quantity]
HT-TAPE	3	50	15	12 roll

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.

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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 25 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.

