



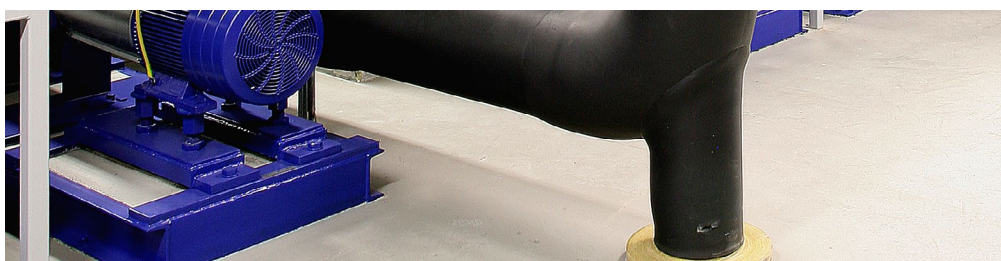
ENGINEERED TO
PREVENT CONDENSATION

ArmaFlex[®] Class 1

Built-in water vapour barrier to
reduce risk of corrosion under insulation

- // Class 1 fire classification according to BS476 Part 7
- // Minimise long-term heat gain and reduce energy cost
- // Closed-cell structure increases resistance to water vapour

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 **armacell**[®]
ArmaFlex[®]

ENGINEERED TO PREVENT CONDENSATION

ArmaFlex Class 1

Built-in water vapour barrier to reduce risk of corrosion under insulation (CUI). Conserves energy and reduces heat loss. Class 1 fire classification according to BS476 Part 7. Certified by leading international fire safety agencies. Fibre-free.

Easy to install



Prevent condensation



Reliable performance



// Closed-cell structure

Minimises moisture permeation to ensure long-term protection against corrosion under insulation. Removes the need for an additional water vapour barrier.

// Good fire performance

FM Approved for entire range of insulation thickness. Certified to conform to safety, reliability and performance standards of various local fire safety bodies.

// Energy efficient

Low thermal conductivity minimises energy losses to give long term energy savings.

// Environmentally safe

Zero Ozone Depletion Potential and Global Warming Potential; rated "Excellent" by Singapore Green Building Council.

// Safer indoor air quality

Free of fibre and formaldehyde, and GREENGUARD® Gold certified for low emissions of volatile organic compounds.

// Easy-to-install

Highly flexible elastomeric foam that can be installed quickly on irregular shapes and installations in tight spaces.



TECHNICAL DATA - ARMAFLEX CLASS 1

Brief description	ArmaFlex Class 1 is a flexible insulation material that reliably protects against water vapour ingress due to its closed-cell structure. No additional water vapour barrier is required.
Material type	Elastomeric foam based on synthetic rubber.
Colour	Black.
Special features	Engineered wall: Increasing insulation wall thickness for tubes ensures that the surface temperature is maintained as the pipe diameter is increased.
Applications	Thermal insulation/protection of pipes, air ducts and vessels (incl. elbows, fittings, flanges etc.) in air conditioning, refrigeration and process equipment to prevent condensation and to save energy. Structure-borne noise reduction in service-water and waste-water installations.
Installation	Please refer to the ArmaFlex installation manual for advice. ArmaFlex can be used together with ArmaFlex 520 adhesive and ArmaFix® pipehangers for a complete insulation system.

Property	Value/Assessment				Standard/Test method	
Temperature range						
Service temperature	Range	Minimum [°C]		Maximum [°C]		
	Full range	-50		+105		
	Remarks	+85 °C if sheet or tape is glued to the object with its whole surface.				
Thermal conductivity						
Declared thermal conductivity	θ_m	-20 °C	+/-0 °C	+20 °C	+40 °C	GB/T 10295, GB/T 10296, ASTM C518, EN ISO 8497
	$\lambda_d \leq [W/(m \cdot K)]$	0.032	0.034	0.036	0.039	
Resistance to water vapour						
Water vapour diffusion resistance factor	$\mu \geq 10,000$				DIN EN 13469, DIN EN 12086, GB/T 17146	
Water vapour permeability	$\leq 1.96 \times 10^{-11} \text{g}/(\text{m} \cdot \text{s} \cdot \text{Pa})$					
Resistance to water						
Water absorption by vacuum	$\leq 10\%$				GB/T 17794	
Fire performance						
Surface spread of flame	Class 1				BS 476 Part 7	
Flammability of plastic materials	V-0 rating				UL 94	
FM Approved	Yes				FM 4924	
Practical fire behaviour	Does not generate flaming droplets.					
Other fire class	Product conforms to requirements for building products under the Fire Safety and Shelter Department of Singapore.					
Mechanical properties						
Resilience after compression relief	$\geq 70\%$				GB/T 6669	
Weather and UV resistance						
UV resistance	For UV protection, ArmaFinish Paint or Arma-Chek® covering system is required. For outside use, ArmaFlex should be protected within three days of installation.					
Health and environment						
Environmental aspect	Zero ODP and GWP.					
Environmental Product Declaration (EPD)	Type III EPD: Declaration number 4789125188.101.1, UL Environment.					
Health aspects	Free of fibre and formaldehyde. Low Volatile Organic Compounds (VOC), low total aldehyde. GREENGUARD Gold for even lower VOC and total chemical emissions.				UL2818	
Green building assessment	Singapore Green Building Product Certified: "Excellent" rating.					
Other technical features						
Chemical resistance	Please consult product test list.					
Storage	Material shall be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0°C to 35 °C).					
Shelf (storage life)	Self-adhesive sheets, tubes and tapes: 1 year.					

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 our Technical department in due time whether or not the data and information apply to the intended application area..

Tube - standard (2.0m length)

Insulation inner diameter [mm]	Cu pipe outer diameter [inch]	Fe pipe outer diameter [mm]	Nominal diameter [DN]	D-series (non-engineered wall)			F-series (non-engineered wall)			H-series (engineered wall)			M-series (engineered wall)		
				Item	Average insulation thickness [mm]	Carton content [m]	Item	Average insulation thickness [mm]	Carton content [m]	Item	Average insulation thickness [mm]	Carton content [m]	Item	Average insulation thickness [mm]	Carton content [m]
6	1/4						C1-F-006	9.25	324	C1-H-006	14.00	180	C1-M-006	17.75	112
10	3/8		6				C1-F-010	9.25	264	C1-H-010	14.00	144	C1-M-010	17.75	100
12	1/2						C1-F-012	9.25	220	C1-H-012	14.00	128	C1-M-012	17.75	90
15	5/8	14	8	C1-D-015#	6.25	264	C1-F-015	9.25	180	C1-H-015	14.00	128	C1-M-015	17.75	80
20	3/4			C1-D-020	6.25	220	C1-F-020	9.25	144	C1-H-020	14.00	90	C1-M-020	18.75	72
22	7/8	22	15	C1-D-022	6.25	180	C1-F-022	9.25	128	C1-H-022	12.75	90	C1-M-022	18.75	60
25	1	25		C1-D-025	6.25	144	C1-F-025	9.25	108	C1-H-025	12.75	82	C1-M-025	19.25	50
28	1-1/8	28	20				C1-F-028	9.25	98	C1-H-028	13.25	72	C1-M-028	19.75	50
32	1-1/4	32					C1-F-032	9.25	84	C1-H-032	13.25	64	C1-M-032	19.75	40
35	1-3/8		25				C1-F-035	9.25	82	C1-H-035	13.75	58	C1-M-035	20.50	36
38	1-1/2	38					C1-F-038#	9.25	72	C1-H-038	13.75	54	C1-M-038	21.00	34
42	1-5/8		32				C1-F-042	9.25	60	C1-H-042	14.25	48	C1-M-042	21.00	30
45	1-3/4						C1-F-045#	9.25	50	C1-H-045	14.25	40	C1-M-045	21.50	24
48	1-7/8		40				C1-F-048#	9.25	50	C1-H-048#	14.25	40	C1-M-048	22.00	24
50							C1-F-050#	9.25	40	C1-H-050#	14.25	32	C1-M-050	22.00	24
54	2-1/8						C1-F-054	9.25	40	C1-H-054	14.25	36	C1-M-054	22.00	24
57	2-1/4	57					C1-F-057#	9.25	40	C1-H-057#	14.75	32	C1-M-057#	22.00	22
60	2-3/8		50				C1-F-060	9.25	32	C1-H-060	14.75	28	C1-M-060	22.50	20
64													C1-M-064#	22.50	16
67	2-5/8									C1-H-067	14.75	24	C1-M-067#	22.50	16
76	3	76								C1-H-076	14.75	22	C1-M-076	23.00	14
80	3-1/8									C1-H-080	15.00	18	C1-M-080	23.00	14
89	3-1/2	89	80							C1-H-089	15.25	18	C1-M-089	24.50	12
108	4-1/4	108								C1-H-108#	15.50	16	C1-M-108	25.00	10
114	4-1/2	114	100							C1-H-114	15.50	16	C1-M-114	25.50	10
133	5-1/4												C1-M-133#	25.50	6
140			125										C1-M-140#	26.00	6
168			150												

*Made to order. Minimum order quantities and different lead times may apply.
Self-adhesive option available upon request. Minimum order quantities and different lead times may apply.

Sheet - continuous roll

Insulation thickness [mm]	1.00m width			1.22m width			1.50m width		
	Item	Length [m]	Carton content [sqm]	Item	Length [m]	Carton content [sqm]	Item	Length [m]	Carton content [sqm]
6	C1-06100CS-9	9	9.00				C1-06150CS-S15	15	22.50
9							C1-09150CS-S10	10	15.00
13							C1-13150CS	8	12.00
16							C1-16150CS	7	10.50
19							C1-19150CS	6	9.00
25							C1-25150CS	4	6.00
25							C1-25150CS-8#	8	12.00
28							C1-28150CS#	4	6.00
30				C1-30122CS-6	6	7.32	C1-30150CS#	3	4.50
30				C1-30122CS-8	8	9.76	C1-30150CS-6#	6	9.00
32							C1-32150CS	3	4.50
32							C1-32150CS-C#	3	4.50
40	C1-40100CS-3	3	3.00						
50	C1-50100CS-3	3	3.00						

*Made to order. Minimum order quantities and different lead times may apply.
Self-adhesive option available upon request. Minimum order quantities and different lead times may apply.

Tube - standard (2.0m length)

Insulation inner diameter [mm]	Cu pipe outer diameter [inch]	Fe pipe outer diameter [mm]	Nominal diameter [DN]	R-series (engineered wall)			T-series (engineered wall)			U-series (non-engineered wall)			V-series (non-engineered wall)		
				Item	Average insulation thickness [mm]	Carton content [m]	Item	Average insulation thickness [mm]	Carton content [m]	Item	Average insulation thickness [mm]	Carton content [m]	Item	Average insulation thickness [mm]	Carton content [m]
6	1/4														
10	3/8		6	C1-R-010	24.00	60	C1-T-010#	31.00	32						
12	1/2			C1-R-012	24.00	56	C1-T-012	31.00	32						
15	5/8	14	8	C1-R-015	24.00	48	C1-T-015	32.00	32	C1-U-015	40.00	22			
20	3/4			C1-R-020	24.00	40	C1-T-020	32.00	24	C1-U-020	40.00	22	C1-V-020#	50.00	12
22	7/8	22	15	C1-R-022	24.00	40	C1-T-022	32.00	24	C1-U-022	40.00	18	C1-V-022	50.00	12
25	1	25		C1-R-025	24.00	36	C1-T-025	32.00	24	C1-U-025	40.00	18	C1-V-025#	50.00	12
28	1-1/8	28	20	C1-R-028	24.00	32	C1-T-028	33.50	22	C1-U-028	40.00	16	C1-V-028	50.00	12
32	1-1/4	32		C1-R-032	26.00	24	C1-T-032	33.50	20	C1-U-032	40.00	16	C1-V-032#	50.00	10
35	1-3/8		25	C1-R-035	26.00	24	C1-T-035	35.00	18	C1-U-035	40.00	12	C1-V-035	50.00	10
38	1-1/2	38		C1-R-038	26.00	24	C1-T-038	35.00	16	C1-U-038	40.00	12	C1-V-038#	50.00	8
42	1-5/8		32	C1-R-042	26.00	22	C1-T-042	36.50	16	C1-U-042	40.00	12	C1-V-042	50.00	8
45	1-3/4			C1-R-045	26.50	20	C1-T-045	36.50	12	C1-U-045	40.00	12	C1-V-045#	50.00	8
48	1-7/8		40	C1-R-048	26.50	20	C1-T-048	37.50	12	C1-U-048	40.00	12	C1-V-048	50.00	8
50				C1-R-050	26.50	20	C1-T-050	37.50	12						
54	2-1/8			C1-R-054	27.50	20	C1-T-054	38.00	10	C1-U-054	40.00	10	C1-V-054	50.00	8
57	2-1/4	57		C1-R-057#	27.50	16	C1-T-057#	38.50	10				C1-V-057#	50.00	8
60	2-3/8		50	C1-R-060	28.00	16	C1-T-060	39.00	10	C1-U-060	40.00	10	C1-V-060	50.00	8
64				C1-R-064#	28.00	14	C1-T-064#	39.00	10						
67	2-5/8			C1-R-067#	28.00	14	C1-T-067	39.50	8	C1-U-067	40.00	8	C1-V-067	50.00	6
76	3	76		C1-R-076	29.00	12	C1-T-076	39.50	8	C1-U-076	40.00	8	C1-V-076	50.00	4
80	3-1/8			C1-R-080	29.00	12									
89	3-1/2	89	80	C1-R-089	29.50	12	C1-T-089	41.50	8	C1-U-089	40.00	8	C1-V-089	50.00	4
108	4-1/4	108		C1-R-108#	31.00	8	C1-T-108#	42.50	6						
114	4-1/2	114	100	C1-R-114	31.50	6	C1-T-114#	43.00	4	C1-U-114	40.00	4	C1-V-114#	50.00	4
133	5-1/4			C1-R-133#	31.50	6									
140			125	C1-R-140#	32.00	4	C1-T-140	44.50	4	C1-U-140#	40.00	4	C1-V-140#	50.00	4
168			150	C1-R-168#	32.00	4	C1-T-168#	44.50	4	C1-U-168#	40.00	4	C1-V-168#	50.00	4

*Made to order. Minimum order quantities and different lead times may apply.
Self-adhesive option available upon request. Minimum order quantities and different lead times may apply.

ArmaFlex Class 1 Accessories

Item	Carton content	Article description
AS-ATAPEC1T-9M	24 rolls	ArmaFlex Class 1 insulation tape (3mm thickness x 50mm width x 9.14 m)

Accessories

Item	Carton content	Article description
AS-AD5201E	4 x 3.78 litre cans	ArmaFlex 520 adhesive
CLEANER/1,0	4 x 1.0 litre cans	Solvent-free cleaner for use with ArmaFlex adhesive
CUTTING-SET	1	ArmaFlex cutting set (3 knives and 1 sharpening stone)



//Cover Photo (Top)

Pudong International Airport, Shanghai, China

Effective against water vapour ingress without any additional water vapour barrier

Located directly on the coast, the Shanghai Pudong International Airport is exposed to very high humidity levels. Hence, the cooling-water lines of the air-conditioners and the hot-water lines in the arrival and departure building, in the 50,000m² freight area and in the airport hotel, as well as the air conduits in the terminal building were insulated with ArmaFlex.

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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 3,000 employees and 23 production plants in 15 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.

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