



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



 **armacell**<sup>®</sup>  
MAKING A DIFFERENCE AROUND THE WORLD

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	Flexible elastomeric foam based on synthetic rubber (NBR).
Product colour range	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 application manual for advice. ArmaFlex can be used together with ArmaFlex 520 adhesive and ArmaFix pipe hangers for a complete insulation system.

Property	Value / Assessment				Standard / Test method
<b>Temperature range</b>					
Service temperature	Min. °C	Max. °C			
	-50	105			
	Remarks	+85 °C if sheet is glued to the object with its whole surface.			
<b>Thermal conductivity</b>					
Declared thermal conductivity	Øm	-20 °C	0 °C	25°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	
<b>Fire Performance and Approvals</b>					
Surface spread of flame	Class 1				BS 476 Part 7
FM approved	Yes				FM 4924
<b>Flammability</b>					
Flammability of plastic materials	V-0 rating				UL 94
<b>Fire performance</b>					
Practical fire behaviour	Does not generate flaming droplets.				
Others	Product conforms to requirements for building products under the Fire Safety and Shelter Department of Singapore.				
<b>Resistance to water vapour</b>					
Water vapour diffusion resistance factor	$\mu \geq 10,000$				GB/T 17146, EN 12086, EN 13469
Water vapour permeability	$\leq 1.96 \times 10^{-11} \text{ g}/(\text{m} \cdot \text{s} \cdot \text{Pa})$				GB/T 17146, EN 12086, EN 13469
<b>Resistance to water</b>					
Water absorption by vacuum	$\leq 0.5\%$ by volume				GB/T 17794
<b>Mechanical properties</b>					
Resilience after compression relief	$\geq 70\%$				GB/T 6669
<b>Weather and UV resistance</b>					
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.				

Property	Value / Assessment	Standard / Test method
<b>Health and environment</b>		
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.	UL 2818
Environmental aspects	Zero ODP and GWP.	
Environmental Product Declaration (EPD)	Type III EPD: Declaration number 4789125188.101.1, UL Environment.	
Green building assessment	Singapore Green Building Product Certified: "Excellent" rating.	
<b>Other technical features</b>		
Chemical resistance	Please consult product test list.	
Shelf life	Self-adhesive sheets, tubes and tapes: 1 year	
Storage	Material shall be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0°C to 35 °C).	

Tube – standard. Black. Tube - standard (2.0m length)

D-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
15	0.625	8	C1-D-015	15	6.25	2	264 m
20	0.75		C1-D-020	20	6.25	2	220 m
22	0.875	15	C1-D-022	22	6.25	2	180 m
25	1.0		C1-D-025	25	6.25	2	144 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

F-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
6	0.25		C1-F-006	6	9.25	2	324 m
10	0.375	6	C1-F-010	10	9.25	2	264 m
12	0.5		C1-F-012	12	9.25	2	220 m
15	0.625	8	C1-F-015	15	9.25	2	180 m
20	0.75		C1-F-020	20	9.25	2	144 m
25	1.0		C1-F-025	25	9.25	2	108 m
42	1.625	32	C1-F-042	42	9.25	2	60 m
45	1.75		C1-F-045	45	9.25	2	50 m
48	1.875	40	C1-F-048	48	9.25	2	50 m
50	2.0		C1-F-050	50	9.25	2	40 m
57	2.25		C1-F-057	57	9.25	2	40 m
60	2.375	50	C1-F-060	60	9.25	2	32 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

H-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
6	0.25		C1-H-006	6	14.00	2	180 m
10	0.375	6	C1-H-010	10	14.00	2	144 m
12	0.5		C1-H-012	12	14.00	2	128 m
15	0.625	8	C1-H-015	15	14.00	2	128 m
20	0.75		C1-H-020	20	14.00	2	90 m
22	0.875	15	C1-H-022	22	12.75	2	90 m
32	1.25		C1-H-032	32	13.25	2	64 m
38	1.5		C1-H-038	38	13.75	2	54 m
42	1.625	32	C1-H-042	42	14.25	2	48 m
45	1.75		C1-H-045	45	14.25	2	40 m
48	1.875	40	C1-H-048	48	14.25	2	40 m
57	2.25		C1-H-057	57	14.75	2	32 m

Tube – standard. Black. Tube - standard (2.0m length)

H-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
60	2.375	50	C1-H-060	60	14.75	2	28 m
76	3.0		C1-H-076	76	14.75	2	22 m
108	4.25		C1-H-108	108	15.50	2	16 m
114	4.5	100	C1-H-114	114	15.50	2	16 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

M-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
6	0.25		C1-M-006	6	17.75	2	112 m
10	0.375	6	C1-M-010	10	17.75	2	100 m
12	0.5		C1-M-012	12	17.75	2	90 m
15	0.625	8	C1-M-015	15	17.75	2	80 m
20	0.75		C1-M-020	20	18.75	2	72 m
22	0.875	15	C1-M-022	22	18.75	2	60 m
25	1.0		C1-M-025	25	19.25	2	50 m
28	1.125	20	C1-M-028	28	19.75	2	50 m
42	1.625	32	C1-M-042	42	21.00	2	30 m
48	1.875	40	C1-M-048	48	22.00	2	24 m
54	2.125		C1-M-054	54	22.00	2	24 m
57	2.25		C1-M-057	57	22.00	2	22 m
60	2.375	50	C1-M-060	60	22.50	2	20 m
67	2.625		C1-M-067	67	22.50	2	16 m
76	3.0		C1-M-076	76	23.00	2	14 m
89	3.5	80	C1-M-089	89	24.50	2	12 m
108	4.25		C1-M-108	108	25.00	2	10 m
114	4.5	100	C1-M-114	114	25.50	2	10 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

R-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
10	0.375	6	C1-R-010	10	24.00	2	60 m
12	0.5		C1-R-012	12	24.00	2	56 m
15	0.625	8	C1-R-015	15	24.00	2	48 m
20	0.75		C1-R-020	20	24.00	2	40 m
22	0.875	15	C1-R-022	22	24.00	2	40 m
25	1.0		C1-R-025	25	24.00	2	36 m

Tube – standard. Black. Tube - standard (2.0m length)

R-series							
Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
42	1.625	32	C1-R-042	42	26.00	2	22 m
48	1.875	40	C1-R-048	48	26.50	2	20 m
57	2.25		C1-R-057	57	27.50	2	16 m
60	2.375	50	C1-R-060	60	28.00	2	16 m
76	3.0		C1-R-076	76	29.00	2	12 m
89	3.5	80	C1-R-089	89	29.50	2	12 m
108	4.25		C1-R-108	108	31.00	2	8 m
114	4.5	100	C1-R-114	114	31.50	2	6 m
133	5.25		C1-R-133	133	31.50	2	6 m
140	5.5	125	C1-R-140	140	32.00	2	4 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

T-series							
Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
15	0.625	8	C1-T-015	15	32.00	2	32 m
25	1.0		C1-T-025	25	32.00	2	24 m
32	1.25		C1-T-032	32	33.50	2	20 m
38	1.5		C1-T-038	38	35.00	2	16 m
42	1.625	32	C1-T-042	42	36.50	2	16 m
45	1.75		C1-T-045	45	36.50	2	12 m
48	1.875	40	C1-T-048	48	37.50	2	12 m
54	2.125		C1-T-054	54	38.00	2	10 m
57	2.25		C1-T-057	57	38.50	2	10 m
60	2.375	50	C1-T-060	60	39.00	2	10 m
67	2.625		C1-T-067	67	39.50	2	8 m
76	3.0		C1-T-076	76	39.50	2	8 m
89	3.5	80	C1-T-089	89	41.50	2	8 m
114	4.5	100	C1-T-114	114	43.00	2	4 m
140	5.5	125	C1-T-140	140	44.50	2	4 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

U-series							
Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
15	0.625	8	C1-U-015	15	40.00	2	22 m
25	1.0		C1-U-025	25	40.00	2	18 m
32	1.25		C1-U-032	32	40.00	2	16 m

Tube – standard. Black. Tube - standard (2.0m length)

U-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
38	1.5		C1-U-038	38	40.00	2	12 m
42	1.625	32	C1-U-042	42	40.00	2	12 m
45	1.75		C1-U-045	45	40.00	2	12 m
48	1.875	40	C1-U-048	48	40.00	2	12 m
60	2.375	50	C1-U-060	60	40.00	2	10 m
89	3.5	80	C1-U-089	89	40.00	2	8 m

Other information

Remarks Average thickness refers to average insulation thickness.

Tube – standard. Black. Tube - standard (2.0m length)

V-series

Pipe Ø [mm]	Copper pipe outer diameter [inch]	Steel pipe DN	Item	Inner diameter (minimum) [mm]	Average thickness [mm]	Length [m]	Content [metric]
20	0.75		C1-V-020	20	50.00	2	12 m
22	0.875	15	C1-V-022	22	50.00	2	12 m
25	1.0		C1-V-025	25	50.00	2	12 m
28	1.125	20	C1-V-028	28	50.00	2	12 m
32	1.25		C1-V-032	32	50.00	2	10 m
35	1.375	25	C1-V-035	35	50.00	2	10 m
38	1.5		C1-V-038	38	50.00	2	8 m
42	1.625	32	C1-V-042	42	50.00	2	8 m
48	1.875	40	C1-V-048	48	50.00	2	8 m
60	2.375	50	C1-V-060	60	50.00	2	8 m

Other information

Remarks Average thickness refers to average insulation thickness.

Roll - standard

Item	Average thickness [mm]	Width (m)	Length [m]	Content [metric]
C1-13150CS	13	1.5	8	12 m <sup>2</sup>
C1-16150CS	16	1.5	7	10.5 m <sup>2</sup>
C1-19150CS	19	1.5	6	9 m <sup>2</sup>
C1-25150CS-8	25	1.5	8	12 m <sup>2</sup>
C1-30150CS	30	1.5	3	4.5 m <sup>2</sup>
C1-32150CS	32	1.5	3	4.5 m <sup>2</sup>

Adhesives and Cleaners

Item	Description	Content [quantity]
AS-AD5201E	4 cans of 1 Gallon (3.78litres) ArmaFlex 520 adhesive in a carton	4 tin
AS-AD520HL	12 cans of 500ml ArmaFlex 520 adhesive in a carton	12 tin



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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 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.

For more information, please visit:  
[www.armacell.com](http://www.armacell.com)

  
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