



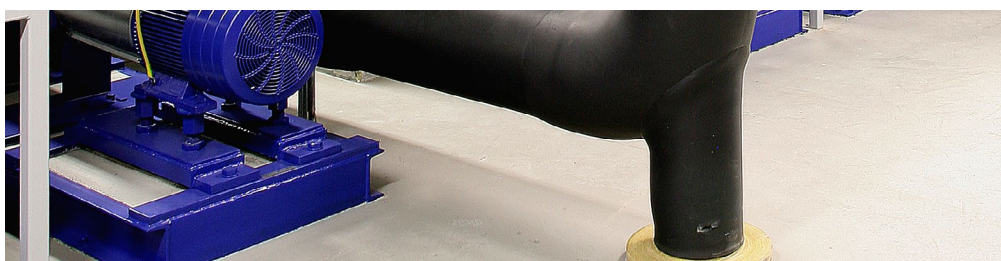
ENGINEERED TO  
PREVENT CONDENSATION

# ArmaFlex<sup>®</sup> 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**<sup>®</sup>  
ArmaFlex<sup>®</sup>

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	
<b>Temperature range</b>						
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.				
<b>Thermal conductivity</b>						
Declared thermal conductivity	$\theta_m$	-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	
<b>Resistance to water vapour</b>						
Water vapour diffusion resistance factor	$\mu \geq 10,000$					DIN EN 13469, DIN EN 12086, GB/T 17146
Water vapour permeability	$\leq 1.96 \times 10^{-11} \text{g}/(\text{m} \cdot \text{s} \cdot \text{Pa})$					
<b>Resistance to water</b>						
Water absorption by vacuum	$\leq 10\%$					GB/T 17794
<b>Fire performance</b>						
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.					
<b>Mechanical resistance</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.					
<b>Health and environment</b>						
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.					
<b>Other technical features</b>						
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						<b>C1-F-006</b>	9.25	324	<b>C1-H-006</b>	14.00	180	<b>C1-M-006</b>	17.75	112
10	3/8		6				<b>C1-F-010</b>	9.25	264	<b>C1-H-010</b>	14.00	144	<b>C1-M-010</b>	17.75	100
12	1/2						<b>C1-F-012</b>	9.25	220	<b>C1-H-012</b>	14.00	128	<b>C1-M-012</b>	17.75	90
15	5/8	14	8	<b>C1-D-015#</b>	6.25	264	<b>C1-F-015</b>	9.25	180	<b>C1-H-015</b>	14.00	128	<b>C1-M-015</b>	17.75	80
20	3/4			<b>C1-D-020</b>	6.25	220	<b>C1-F-020</b>	9.25	144	<b>C1-H-020</b>	14.00	90	<b>C1-M-020</b>	18.75	72
22	7/8	22	15	<b>C1-D-022</b>	6.25	180	<b>C1-F-022</b>	9.25	128	<b>C1-H-022</b>	12.75	90	<b>C1-M-022</b>	18.75	60
25	1	25		<b>C1-D-025</b>	6.25	144	<b>C1-F-025</b>	9.25	108	<b>C1-H-025</b>	12.75	82	<b>C1-M-025</b>	19.25	50
28	1-1/8	28	20				<b>C1-F-028</b>	9.25	98	<b>C1-H-028</b>	13.25	72	<b>C1-M-028</b>	19.75	50
32	1-1/4	32					<b>C1-F-032</b>	9.25	84	<b>C1-H-032</b>	13.25	64	<b>C1-M-032</b>	19.75	40
35	1-3/8		25				<b>C1-F-035</b>	9.25	82	<b>C1-H-035</b>	13.75	58	<b>C1-M-035</b>	20.50	36
38	1-1/2	38					<b>C1-F-038#</b>	9.25	72	<b>C1-H-038</b>	13.75	54	<b>C1-M-038</b>	21.00	34
42	1-5/8		32				<b>C1-F-042</b>	9.25	60	<b>C1-H-042</b>	14.25	48	<b>C1-M-042</b>	21.00	30
45	1-3/4						<b>C1-F-045#</b>	9.25	50	<b>C1-H-045</b>	14.25	40	<b>C1-M-045</b>	21.50	24
48	1-7/8		40				<b>C1-F-048#</b>	9.25	50	<b>C1-H-048#</b>	14.25	40	<b>C1-M-048</b>	22.00	24
50							<b>C1-F-050#</b>	9.25	40	<b>C1-H-050#</b>	14.25	32	<b>C1-M-050</b>	22.00	24
54	2-1/8						<b>C1-F-054</b>	9.25	40	<b>C1-H-054</b>	14.25	36	<b>C1-M-054</b>	22.00	24
57	2-1/4	57					<b>C1-F-057#</b>	9.25	40	<b>C1-H-057#</b>	14.75	32	<b>C1-M-057#</b>	22.00	22
60	2-3/8		50				<b>C1-F-060</b>	9.25	32	<b>C1-H-060</b>	14.75	28	<b>C1-M-060</b>	22.50	20
64													<b>C1-M-064#</b>	22.50	16
67	2-5/8									<b>C1-H-067</b>	14.75	24	<b>C1-M-067#</b>	22.50	16
76	3	76								<b>C1-H-076</b>	14.75	22	<b>C1-M-076</b>	23.00	14
80	3-1/8									<b>C1-H-080</b>	15.00	18	<b>C1-M-080</b>	23.00	14
89	3-1/2	89	80							<b>C1-H-089</b>	15.25	18	<b>C1-M-089</b>	24.50	12
108	4-1/4	108								<b>C1-H-108#</b>	15.50	16	<b>C1-M-108</b>	25.00	10
114	4-1/2	114	100							<b>C1-H-114</b>	15.50	16	<b>C1-M-114</b>	25.50	10
133	5-1/4												<b>C1-M-133#</b>	25.50	6
140			125										<b>C1-M-140#</b>	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	<b>C1-06100CS-9</b>	9	9.00				<b>C1-06150CS-S15</b>	15	22.50
9							<b>C1-09150CS-S10</b>	10	15.00
13							<b>C1-13150CS</b>	8	12.00
16							<b>C1-16150CS</b>	7	10.50
19							<b>C1-19150CS</b>	6	9.00
25							<b>C1-25150CS</b>	4	6.00
25							<b>C1-25150CS-8#</b>	8	12.00
28							<b>C1-28150CS#</b>	4	6.00
30				<b>C1-30122CS-6</b>	6	7.32	<b>C1-30150CS#</b>	3	4.50
30				<b>C1-30122CS-8</b>	8	9.76	<b>C1-30150CS-6#</b>	6	9.00
32							<b>C1-32150CS</b>	3	4.50
32							<b>C1-32150CS-C#</b>	3	4.5
40	<b>C1-40100CS-3</b>	3	3.00						
50	<b>C1-50100CS-3</b>	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														
12	1/2		6	<b>C1-R-010</b>	24.00	60	<b>C1-T-010#</b>	31.00	32						
				<b>C1-R-012</b>	24.00	56	<b>C1-T-012</b>	31.00	32						
15	5/8	14	8	<b>C1-R-015</b>	24.00	48	<b>C1-T-015</b>	32.00	32	<b>C1-U-015</b>	40.00	22			
20	3/4			<b>C1-R-020</b>	24.00	40	<b>C1-T-020</b>	32.00	24	<b>C1-U-020</b>	40.00	22	<b>C1-V-020#</b>	50.00	12
22	7/8	22	15	<b>C1-R-022</b>	24.00	40	<b>C1-T-022</b>	32.00	24	<b>C1-U-022</b>	40.00	18	<b>C1-V-022</b>	50.00	12
25	1	25		<b>C1-R-025</b>	24.00	36	<b>C1-T-025</b>	32.00	24	<b>C1-U-025</b>	40.00	18	<b>C1-V-025#</b>	50.00	12
28	1-1/8	28	20	<b>C1-R-028</b>	24.00	32	<b>C1-T-028</b>	33.50	22	<b>C1-U-028</b>	40.00	16	<b>C1-V-028</b>	50.00	12
32	1-1/4	32		<b>C1-R-032</b>	26.00	24	<b>C1-T-032</b>	33.50	20	<b>C1-U-032</b>	40.00	16	<b>C1-V-032#</b>	50.00	10
35	1-3/8		25	<b>C1-R-035</b>	26.00	24	<b>C1-T-035</b>	35.00	18	<b>C1-U-035</b>	40.00	12	<b>C1-V-035</b>	50.00	10
38	1-1/2	38		<b>C1-R-038</b>	26.00	24	<b>C1-T-038</b>	35.00	16	<b>C1-U-038</b>	40.00	12	<b>C1-V-038#</b>	50.00	8
42	1-5/8		32	<b>C1-R-042</b>	26.00	22	<b>C1-T-042</b>	36.50	16	<b>C1-U-042</b>	40.00	12	<b>C1-V-042</b>	50.00	8
45	1-3/4			<b>C1-R-045</b>	26.50	20	<b>C1-T-045</b>	36.50	12	<b>C1-U-045</b>	40.00	12	<b>C1-V-045#</b>	50.00	8
48	1-7/8		40	<b>C1-R-048</b>	26.50	20	<b>C1-T-048</b>	37.50	12	<b>C1-U-048</b>	40.00	12	<b>C1-V-048</b>	50.00	8
50				<b>C1-R-050</b>	26.50	20	<b>C1-T-050</b>	37.50	12						
54	2-1/8			<b>C1-R-054</b>	27.50	20	<b>C1-T-054</b>	38.00	10	<b>C1-U-054</b>	40.00	10	<b>C1-V-054</b>	50.00	8
57	2-1/4	57		<b>C1-R-057#</b>	27.50	16	<b>C1-T-057#</b>	38.50	10				<b>C1-V-057#</b>	50.00	8
60	2-3/8		50	<b>C1-R-060</b>	28.00	16	<b>C1-T-060</b>	39.00	10	<b>C1-U-060</b>	40.00	10	<b>C1-V-060</b>	50.00	8
64				<b>C1-R-064#</b>	28.00	14	<b>C1-T-064#</b>	39.00	10						
67	2-5/8			<b>C1-R-067#</b>	28.00	14	<b>C1-T-067</b>	39.50	8	<b>C1-U-067</b>	40.00	8	<b>C1-V-067</b>	50.00	6
76	3	76		<b>C1-R-076</b>	29.00	12	<b>C1-T-076</b>	39.50	8	<b>C1-U-076</b>	40.00	8	<b>C1-V-076</b>	50.00	4
80	3-1/8			<b>C1-R-080</b>	29.00	12									
89	3-1/2	89	80	<b>C1-R-089</b>	29.50	12	<b>C1-T-089</b>	41.50	8	<b>C1-U-089</b>	40.00	8	<b>C1-V-089</b>	50.00	4
108	4-1/4	108		<b>C1-R-108#</b>	31.00	8	<b>C1-T-108#</b>	42.50	6						
114	4-1/2	114	100	<b>C1-R-114</b>	31.50	6	<b>C1-T-114#</b>	43.00	4	<b>C1-U-114</b>	40.00	4	<b>C1-V-114#</b>	50.00	4
133	5-1/4			<b>C1-R-133#</b>	31.50	6									
140			125	<b>C1-R-140#</b>	32.00	4	<b>C1-T-140</b>	44.50	4	<b>C1-U-140#</b>	40.00	4	<b>C1-V-140#</b>	50.00	4
168			150	<b>C1-R-168#</b>	32.00	4	<b>C1-T-168#</b>	44.50	4	<b>C1-U-168#</b>	40.00	4	<b>C1-V-168#</b>	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
<b>AS-ATAPEC1T-9M</b>	24 rolls	ArmaFlex Class 1 insulation tape (3mm thickness x 50mm width x 9.14 m)

Accessories

Item	Carton content	Article description
<b>AS-AD5201E</b>	4 x 3.78 litre cans	ArmaFlex 520 adhesive
<b>CLEANER/1,0</b>	4 x 1.0 litre cans	Solvent-free cleaner for use with ArmaFlex adhesive
<b>CUTTING-SET</b>	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 50,000m<sup>2</sup> 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 3,135 employees and 24 production plants in 16 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.

For more information, please visit:  
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