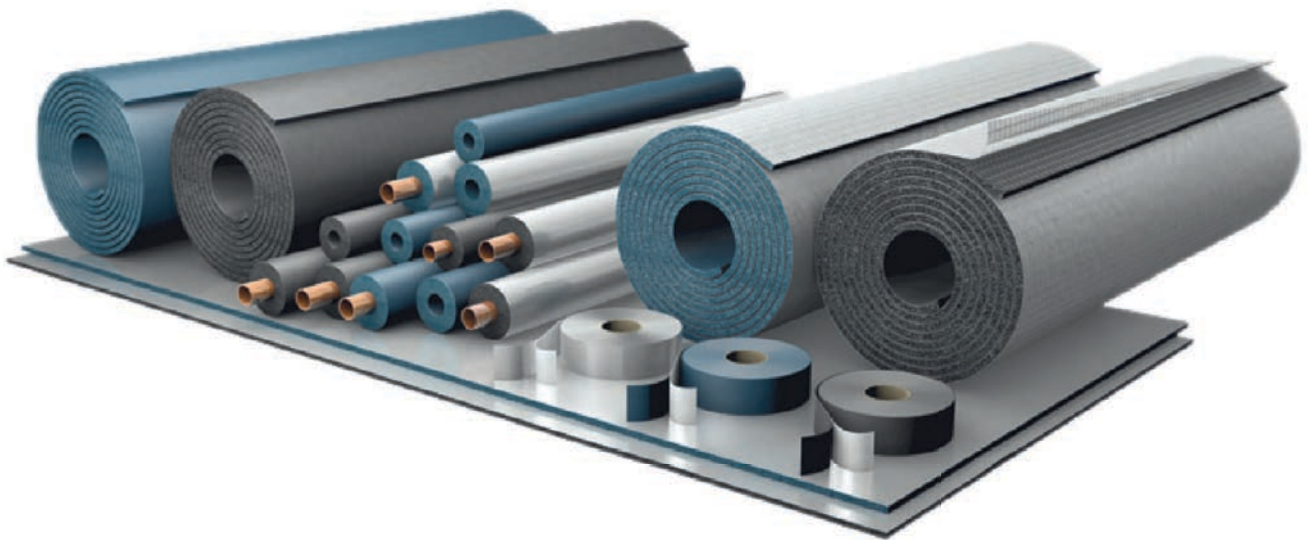


ArmaFlex[®] Rail



THE WORLD'S FIRST CLOSED-CELL INSULATION TO MEET EN 45545-2 FIRE PROTECTION REQUIREMENTS

- The leading and most innovative closed-cell thermal insulation available to the railway industry worldwide
- High-tech insulation with advanced fire protection for railway vehicles
- Closed cell insulation with built-in water vapour barrier reduces risk of corrosion under insulation (CUI)
- Extremely low smoke density, no burning droplets in the event of fire
- Reduced risk of mould and mildew contributes to improved indoor air quality
- First flexible closed-cell insulation to meet hazard level 2 & 3 according to EN 45545



CE



HAZARD LEVEL OF A VEHICLE

Fire safety requirements are part of the European Directive on the interoperability of the trans-European high-speed rail system. The seven-part standard EN 45545 'Railway applications - Fire protection on railway vehicles' has been developed to harmonise classifications and fire testing.

EN 45545 introduces a new concept – the hazard level of a vehicle (HL). This is obtained by combining the operation and design categories of the vehicle:



Operation category	Design category			
	N: Standard vehicles	A: Automatic vehicles	D: Double decked vehicles	S: Sleeping & couchette cars
Surface operation	HL1	HL1	HL1	HL2
Metro - Tunnel operation	HL2	HL2	HL2	HL2
Inter-City Tunnel operation	HL2	HL2	HL2	HL3
Metro - Tunnel operation, restricted	HL3	HL3	HL3	HL3

EN 45545-2:2013 classifies all onboard materials in groups which have to fulfil specific requirement sets which often includes several test methods. The most important fire tests used in EN 45545-2 are the flame propagation, the cone calorimeter and the smoke and toxicity tests. For requirement set R1 they are all based on radiant panels with heat fluxes 50 kW/m².

REQUIREMENTS FOLLOW THE FIRST PRINCIPLES:

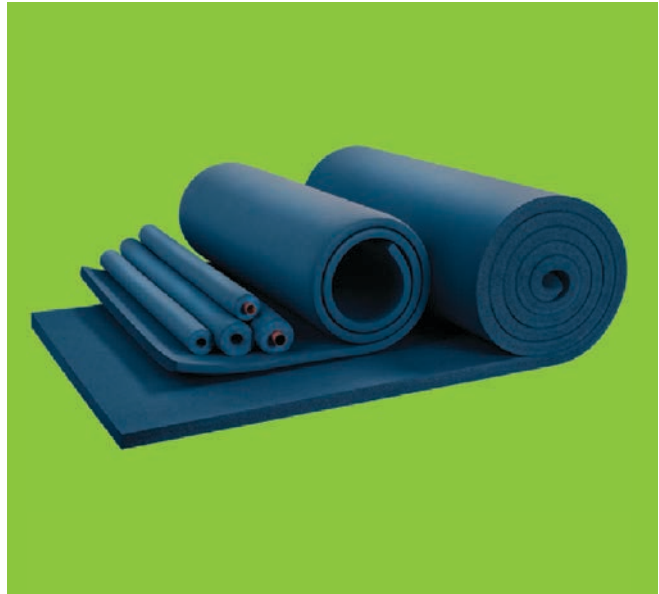
- Flame Spread
- Ignitability
- Heat Release
- Smoke Emissions
- Toxic Gas Emissions

Requirement set	Test method reference	Parameter unit	Requirement definition	HL1	HL2	HL3
R1 (for insulation material)	Spread of flame ISO 5658-2	CFE kWm ⁻²	Minimum	20	20	20
	Heat release, smoke production & mass loss rate ISO 5660-1		Maximum		90	60
		Ds(4) dimensionless	Maximum	600	300	150
		V0F4 Minutes	Maximum	1200	600	300
		CITG dimensionless	Maximum	1.2	0.9	0.75

ARMAFLEX RAIL SD

The first closed cell insulation for increased people & fire safety in railway vehicles.

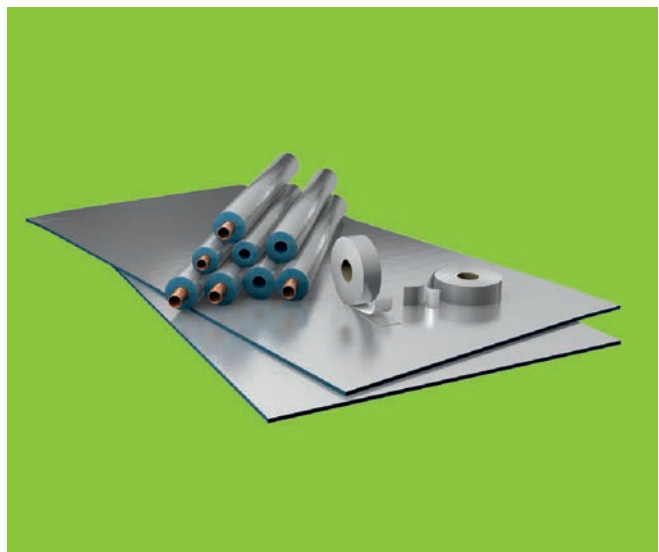
- Extremely low smoke density and superior fire behaviour
- Built-in Microban® antimicrobial protection reduces mould and bacteria growth
- Complies with most international railway standards for insulation materials
 - EN 45545 – HL2, R1
 - NFPA 130
 - DIN 5510-2
 - GOST 12.1.044-89
 - United Nations ECE R-118 p. 6-8



ARMAFLEX RAIL SD- C

The first closed-cell insulation material for use in areas requiring the highest hazard level – HL3

- With Microban® antimicrobial product protection
- Excellent mechanical protection and high degree of stability under exposure to ultraviolet light
- Wash-down waterproof and easy to clean
- Meets highest hazard level requirements
 - EN 45545 – HL3, R1



RANGE

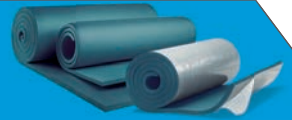
TUBE

Tube, Pre-covered tube

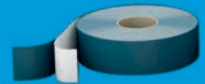


SHEET

Continuous sheet, self-adhesive continuous sheet, self-adhesive pre-covered sheet



TAPE



RECOMMENDED PRODUCTS

For a complete installation



ArmaFix Ultima pipe supports



ArmaFlex Ultima 700 adhesive



ArmaFlex Ultima RS850 adhesive



ArmaFlex SF Cleaner

TECHNICAL DATA

Armaflex Rail SD

A highly flexible, closed cell insulation foam with improved retardant properties, low smoke generation and built in Mircroban® antimicrobial protection for railway vehicles.

Material type	Elastomeric foam based rubber; manufactured with Armaprene® patented technology; US patent no. 8 163 811, EU patent no. 2 261 305.
Colour	Blue
Material special information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicone can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration systems to prevent condensation.
Remarks	ArmaFlex® Rail SD is not designed for outdoor applications exposed to sunlight / not UV stable.

Property	Value/Assessment	Test	Standards & Remarks
Temperature Range			
Max service temperature	+110°C (+85°C if sheet or tape is glued to the object with its whole surface)	EU5654	Tested acc. to EN 14706, EN 14707 & EN 14304
Min service temperature	-50°C		
Thermal Conductivity			
	$\lambda \text{ 0}^\circ\text{C} \leq 0.040 \text{ W/(m}\cdot\text{K)} \quad [40+0.1 \cdot \varrho_m + 0.0009 \cdot \varrho_m^2]/1000$	EU 5654	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 & EN ISO 8497
Water vapour diffusion resistance			
	$\mu \geq 5000$	EU 5654	Tested acc. to EN 12086 & EN 13469
Fire Performance			
Reaction to fire			
Hazard levels	HL2, R1 (3 mm sheets & tape: HL3, R1)	EU 5838 EU 5786 EU 6268 EU 6422	Declared acc. to EN 45545-2
Fire behaviour & fire side effects	S4, ST2, SR2, FED < 1	D 5882	Classified acc to DIN 5510-2 Tested acc to DIN 54837
Russian Federation Certificate of conformity	G1, B2, D2, T2	RUS 6866	Declared acc to: GOST 12.1.044-89
Burning behaviour for use in motor vehicles (ECE Regulations)	Passed Annex 9, Passed Annex 6,7,8	D 5842 D 5612 D5578	ECE R-118 p. 6-8, ECE -R18 annex.9
NFPA 130 American fire test to railway components	$l_s \leq 25 \text{ Ds}(4.0) \leq 100$	D 6905 D 6906 D 6907 D 6908	Classified acc to NFPA 130:2014 Tested acc to ASTM E 162 & ASTM E 662
Other Fire Performance			
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
Other technical features			
Dimensions & tolerances	In accordance with EN 14304, table 1	EU 5654	Tested acc. to EN 822, EN 823, EN 13467
Health aspects			
	Fulfills hygiene requirements of Russian Rail Industry	RUS 6567	
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		Store in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature [0°C - 35°C]

ArmaFlex Rail SD-C

A highly flexible, closed cell insulation foam with improved retardant properties, low smoke generation and built in Microban® antimicrobial protection for railway vehicles.

Material type	Elastomeric foam based rubber with high-tech coating; manufactured with Armaprene® patented technology; US patent no. 8 163 811, EU patent no. 2 261 305.
Colour	Blue with silver metallic look coating.
Material special information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration equipment to prevent condensation.
Special features	The covering offers an excellent durability, even under UV exposure when used for outdoor applications and is easy to clean.
Remarks	When dimensioning the insulation thickness, please calculate with an external surface coefficient of 8 W/(m²·K).

Property	Value/Assessment	Test	Standards & Remarks
Temperature Range			
Max service temperature	+110°C (+ 85°C if sheet or tape is glued to the object with its whole surface)		Tested acc. to EN 14706, EN 14707 & EN 14304
Min service temperature	-50°C		
Thermal Conductivity			
	λ 0°C < 0.040 W/(m·K) $[40+0.1 \cdot \vartheta_m + 0.0009 \cdot \vartheta_m^2]/1000$		Declared acc. to EN ISO 13787 Tested acc. to EN 12667 & EN ISO 8497
Water vapour diffusion resistance			
	$\mu \geq 10000$		Tested acc. to EN 12086 & EN 13469
Fire Performance			
Reaction to fire			
Hazard levels	HL3, R1	EU 6362 EU 6253	Declared acc. to EN 45545-2
Other Fire Performance			
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
Other technical features			
Dimensions & tolerances	In accordance with EN 14304, table 1		
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		Can be stored in dry, clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0°C - 35°C)

ARMAFLEX RAIL SD TUBE

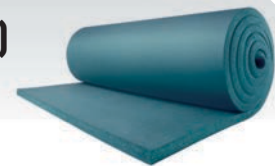
Width - 2m, Colour - Blue



Pipe max. Outside - Ø (mm)	9mm INSULATION THICKNESS		13mm INSULATION THICKNESS	
	Code	m/carton	Code	m/carton
12	RA-09X012	192	RA-13X012	130
15	RA-09X015	164	RA-13X015	112
18	RA-09X018	150	RA-13X018	98
22	RA-09X022	122	RA-13X022	88
28	RA-09X028	90	RA-13X028	64
35	RA-09X035	68	RA-13X035	56
42	RA-09X042	56	RA-13X042	48

ARMAFLEX RAIL SD CONTINUOUS SHEET (ROLLS)

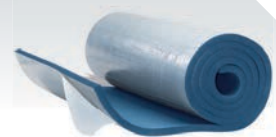
Width - 1m, Colour - Blue



Code	Thickness (mm)	Roll Length (m)	m ² /carton
RA-03-99/E	3	30	30
RA-06-99/E	6	15	15
RA-09-99/E	9	10	10
RA-13-99/E	13	8	8
RA-19-99/E	19	5	5
RA-25-99/E	25	4	4

ARMAFLEX RAIL SD SELF-ADHESIVE CONTINUOUS SHEET (ROLLS)

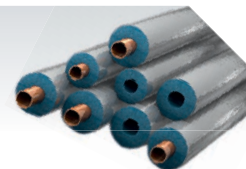
Width - 1m, Colour - Blue



Code	Thickness (mm)	Roll Length (m)	m ² /carton
RA-03-99/EA	3	30	30
RA-06-99/EA	6	15	15
RA-09-99/EA	9	10	10
RA-13-99/EA	13	8	8
RA-19-99/EA	19	5	5
RA-25-99/EA	25	4	4

ARMAFLEX RAIL SD-C PRE-COVERED TUBE

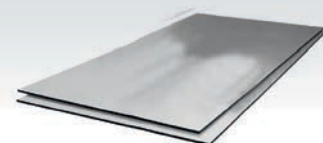
Width - 1m, Colour - Blue, Covering Colour - Silver



Pipe max. Outside - Ø (mm)	Inner Ø min/max (mm)	9mm INSULATION THICKNESS	
		Code	m/carton
12	13 - 14.5	SDC-09X012	96
15	16 - 17.5	SDC-09X015	82
18	19 - 20.5	SDC-09X018	75
22	23 - 24.5	SDC-09X022	61
28	29 - 30.5	SDC-09X028	45
35	36 - 38	SDC-09X035	34
42	43.5 - 45.5	SDC-09X042	28

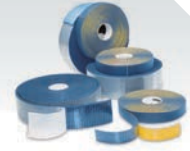
ARMAFLEX RAIL SD-C SELF-ADHESIVE PRE-COVERED SHEET

Width - 1m, Colour - Blue, Covering Colour - Silver



Code	Thickness (mm)	m ² /carton
SDC-06MM/A	6	50
SDC-09MM/A	9	34
SDC-13MM/A	13	24
SDC-19MM/A	19	16
SDC-25MM/A	25	12

TAPE



Code	Colour	Width (mm)	Roll Length (m)	Thickness (mm)	Rolls/carton
RA-TAPE	Blue	50	15	3	12
ACH-PSATAPES-30	Silver	30	25	0.08	10
ACH-PSATAPES-50	Sliver	50	50	0.08	6

ARMAFLEX RAIL ZH

The first halogen-free, closed-cell insulation material to achieve the classification HL2, R1 under EN 45545.

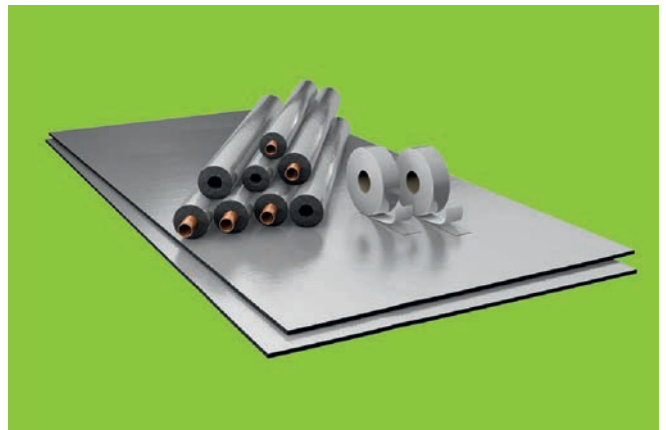
- The protective halogen-free insulation to reduce corrosive effects and smoke toxicity in a fire
- Low smoke density, superior fire behaviour
- Dust and fibre free material with low thermal conductivity
- High-tech insulation with built-in fire protection for railway vehicles
 - EN 45545 – HL2, R1



ARMAFLEX RAIL ZH – C

The first halogen-free, closed-cell insulation material for rail applications with the highest hazard level requirements.

- Halogen-free insulation reduces toxicity and corrosive effects on people and equipment
- Resistant to UV, salt water and chemicals
- Wash-down waterproof and easy to clean
- The revolutionary insulation product has a factory-applied, silver-metallic look, reinforced coating for increased hygienic requirements
 - EN 45545 – HL3, R1



RANGE

TUBE

Tube, Pre-covered tube

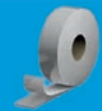


SHEET

Continuous sheet, self-adhesive continuous sheet, self-adhesive pre-covered sheet



TAPE



RECOMMENDED PRODUCTS

For a complete installation



ArmaFlex 520 adhesive
p. 227



ArmaFlex RS850 adhesive
p. 227



ArmaFlex Cleaner
p. 232

TECHNICAL DATA

Armaflex Rail ZH

Halogen free, flexible closed-cell insulation foam with improved fire retardant properties and low smoke generation for railway vehicles.

Material type	Elastomeric foam based on synthetic rubber.
Colour	Dark grey
Material special information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration equipment to prevent condensation.
Special features	Without halogens (chloride, bromide) acc. to DIN/VDE 0472, part 815. Fulfils DIN 1988 Parts 200.
Remarks	Armaflex® Rail ZH is not designed for applications exposed to sun light and is not UV stable.

Property	Value/Assessment	Test	Standards & Remarks
Temperature Range			
Max service temperature	+110°C (+85°C if sheet or tape is glued to the object with its whole surface)		Tested acc. to EN 14706, EN 14707 & EN 14304
Min service temperature	-50°C		
Thermal Conductivity			
	$\lambda \text{ 0}^\circ\text{C} \leq 0.040 \text{ W/(m}\cdot\text{K)}$ $[40+0.1 \cdot \varrho_m + 0.0009 \cdot \varrho_m^2]/1000$		Declared acc. to EN ISO 13787 Tested acc. to EN 12667 & EN ISO 8497
Water Vapour Diffusion Resistance			
	$\mu \geq 1000$		Tested acc. to EN 12086 & EN 13469
Fire Performance			
Reaction to fire			
Hazard levels	HL2, R1	EU 5816 EU 5857 EU 5896 EU 6665	Declared acc. to EN 45545-2
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
Other technical features			
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		Stored in dry clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0°C - 35°C)

Armaflex Rail ZH-C

Halogen free, flexible closed-cell, pre-covered insulation foam with improved fire retardant properties and low smoke generation for railway vehicles.

Material type	Elastomeric foam based on synthetic rubber with patented high-tech multi-layer coating. EU patent no. 2 522 502.
Colour	Dark grey with silver metallic look covering.
Material special information	The pressure-sensitive adhesive coating is based on modified acrylate basis with mesh structure and covered with polyethylene foil. Traces of silicon can be found on the protection paper/foil used to protect self-adhesive closures.
Applications	Insulation / protection for air ducts and pipes (incl. elbows, fittings, flanges etc.) of air-conditioning / refrigeration equipment to prevent condensation.
Special features	Without halogens (chloride, bromide) acc. to DIN/VDE 0472, part 815. Fulfils DIN 1988 Parts 200. The covering offers an excellent durability even under UV exposure when used for outdoors applications. The insulation system is designed for easy cleaning.
Remarks	When dimensioning the insulation thickness, please calculate with an external surface coefficient of 8 W/(m ² K).

Property	Value/Assessment	Test	Standards & Remarks
Temperature Range			
Max service temperature	+110°C (+85°C if sheet or tape is glued to the object with its whole surface)		Tested acc. to EN 14706, EN 14707 & EN 14304
Min service temperature	-50°C		
Thermal Conductivity			
	$\lambda \text{ 0}^\circ\text{C} \leq 0.040 \text{ W}/(\text{m}\cdot\text{K}) \quad [40+0.1 \cdot \vartheta_m + 0.0009 \cdot \vartheta_m^2]/1000$		Declared acc. to EN ISO 13787 Tested acc. to EN 12667 & EN ISO 8497
Water Vapour Diffusion Resistance			
	$\mu \geq 10000$		Tested acc. to EN 12086 & EN 13469
Fire Performance			
Reaction to fire			
Hazard levels	HL3, R1	EU 6364 EU 5818	Declared acc. to EN 45545-2
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
Other technical features			
Storage & Shelf life	Self-adhesive tapes, self-adhesive sheets: 1 year		Stored in dry clean rooms at normal relative humidity (50% to 70%) and ambient temperature (0°C - 35°C)

ARMAFLEX RAIL ZH TUBE

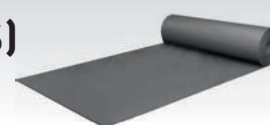
Width - 2m, Colour - Dark grey,



Pipe max. Outside - Ø (mm)	Inner - Ø min/max (mm)	9mm INSULATION THICKNESS	
		Code	m/carton
12	13 - 14.5	ZH-09X012	192
15	16 - 17.5	ZH-09X015	164
18	19 - 20.5	ZH-09X018	150
22	23 - 24.5	ZH-09X022	122
28	29 - 30.5	ZH-09X028	90
35	36 - 38	ZH-09X035	68
42	43.5 - 45.5	ZH-09X042	56

ARMAFLEX RAIL ZH CONTINUOUS SHEET (ROLLS)

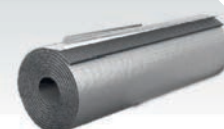
Colour - Dark grey



Code	Thickness (mm)	Roll Length (m)	m ² /carton
ZH-03-99/E	3	30	30
ZH-06-99/E	6	15	15
ZH-10-99/E	10	10	10
ZH-13-99/E	13	8	8
ZH-19-99/E	19	6	6
ZH-25-99/E	25	4	4

ARMAFLEX RAIL ZH SELF-ADHESIVE CONTINUOUS SHEET (ROLLS)

Colour - Dark grey



Code	Thickness (mm)	Roll Length (m)	m ² /carton
ZH-03-99/EA	3	30	30
ZH-06-99/EA	6	15	15
ZH-10-99/EA	10	10	10
ZH-13-99/EA	13	8	8
ZH-19-99/EA	19	6	6
ZH-25-99/EA	25	4	4

ARMAFLEX RAIL ZH-C PRE-COVERED TUBE

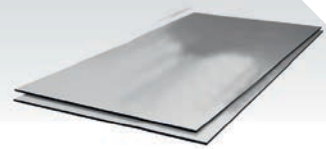
Width - 1m, Colour - Dark grey, Covering Colour - Silver



Pipe max. Outside - Ø (mm)	Inner - Ø min/max (mm)	9mm INSULATION THICKNESS	
		Code	m/carton
12	13 - 14.5	ZHC-09X012	96
15	16 - 17.5	ZHC-09X015	82
18	19 - 20.5	ZHC-09X018	75
22	23 - 24.5	ZHC-09X022	61
28	29 - 30.5	ZHC-09X028	45
35	36 - 38	ZHC-09X035	34
42	43.5 - 45.5	ZHC-09X042	28

ARMAFLEX RAIL ZH-C SELF-ADHESIVE PRE-COVERED SHEET

Width - 2m, Colour - Dark grey, Covering colour - Silver



Code	Thickness (mm)	m ² /carton
ZHC-06MM/A	6	50
ZHC-10MM/A	10	34
ZHC-13MM/A	13	24
ZHC-19MM/A	19	16
ZHC-25MM/A	25	12

TAPE



Code	Colour	Width (mm)	Roll Length (m)	Thickness (mm)	Rolls/carton
ZH-TAPE	Dark grey	50	15	3	12
ACH-PSATAPES-30	Silver	30	25	0.08	10
ACH-PSATAPES-50	Sliver	50	50	0.08	6

ArmaFlex[®] adhesives



A FULL RANGE OF CONTACT ADHESIVES FOR COMPATIBILITY WITH ALL TYPES OF ARMAFLEX

- **ArmaFlex RS850 & Ultima RS850**
Non-drip for faster & cleaner applications. Ideal for hard to access areas with reduced solvent content to meet the requirements for sustainable building projects.
- **Armaflex 520 & Ultima 700**
Tried & tested for superior ArmaFlex reliability
- **ArmaFlex HT 625**
Specially formulated to perform at higher temperatures for HT/ArmaFlex products. Can also be used on all ArmaFlex materials, excluding ArmaFlex Ultima.



PROPERTIES

RS850

High viscosity non-drip thixotropic adhesives, ArmaFlex RS850 and ArmaFlex Ultima RS850 ensure faster and cleaner application. They offer a longer shelf life once stored and emit minimum emission of solvents when they are not being used.



NON-DRIP



HT625

HT625 is a one-component adhesive which has been developed to bond ArmaFlex insulation applied on high temperature lines. Compatible with HT/ArmaFlex, it guarantees a homogeneous and safe bonding at joins and seams



520

ArmaFlex 520 adhesive is a polychloroprene based solvent. The material has low viscosity for ease of application and quick drying characteristics. In its dry state, ArmaFlex 520 adhesive is not flammable. The adhesive is particularly suitable for joining ArmaFlex flexible elastomeric insulation and for bonding the material to clean surfaces. When properly cured the adhesive maintains the resistance to water vapour expected of ArmaFlex.



SOLVENT FREE CLEANER

ArmaFlex SF Cleaner can be used to clean the surfaces of technical insulation materials and the application surface. It comes in a practical spray bottle.

TECHNICAL DATA

Armaflex adhesives based on modified chloroprene rubber in a blend of solvents.

ARMAFLEX 520 Specially formulated adhesive developed for ArmaFlex insulation materials.	
Material type	Contact adhesive on polychloroprene basis, free of aromatic components.
Colour	Beige
Material special info	Liquid
Applications	Gluing of all flexible ArmaFlex insulation materials (except HT/ArmaFlex & ArmaFlex Ultima).
Special features	Specially formulated adhesive for uniform and safe seam bonding of ArmaFlex insulation materials.
Assembly	Please observe our installation instructions/product data sheets. Application temperature: ideally +20 °C, not below 0 °C. At temperatures below +5 °C or high humidity approx above 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on operating plant or areas exposed to strong sunlight. Shake and stir well before use. Apply thinly to the areas to be bonded with a brush or spatula. For contact adhesion press together with force during the contact adhesion time. Detailed application guidance is available.
Remarks	The adhesive achieves its final strength after 36 hours. Only then should plant be put into operation. Never insulate plant which is in operation or work in strong sunlight. Wait 36 hours before applying coatings (exception: ArmaFinish 99), adhesive tape, coverings etc.



ARMAFLEX RS850 Non-drip one component adhesive in gel form. Specifically developed for ArmaFlex insulation materials based on synthetic rubber.	
Material type	Thixotropic contact adhesive on polychloroprene basis.
Colour	Beige
Material special info	Gel form
Applications	Application on pipes, ducts and tanks with service temperature up to +70 °C. Gluing of all flexible ArmaFlex insulation materials (except HT/ArmaFlex & ArmaFlex Ultima).
Special features	Specially formulated adhesive for uniform and safe seam bonding of ArmaFlex insulation materials.
Assembly	Please observe our installation instructions/product data sheets. Application temperature: ideally +20 °C, not below 0 °C. At temperatures below +5 °C or high humidity approx above 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on operating plant or areas exposed to strong sunlight. Shake and stir well before use. Apply thinly to the areas to be bonded with a brush or spatula. For contact adhesion press together with force during the contact adhesion time. Detailed application guidance is available.
Remarks	The adhesive achieves its final strength after 24 hours. The system should never be operated during this time and any self-adhesive tape or protective coating (exception: ArmaFinish 99), should only be applied after the time has elapsed.



	ArmaFlex 520 adhesive	ArmaFlex RS850 adhesive
Temperature Range		
Max service temperature	+105 °C	+70 °C
Min service temperature	-50 °C (for temperatures below -50 °C please contact our technical department)	-40 °C
Performance		
Coverage (guidance only)	Minimum consumption with the adhesive applied to both surfaces: ArmaFlex tubes (thickness > consumption unslit > consumption slit) <ul style="list-style-type: none"> • 10mm > 1,120m per litre > 140m per litre • 20mm > 280m per litre > 70m per litre • 30mm > 175m per litre > 45m per litre • 40mm > 130m per litre > 35m per litre Sheets <ul style="list-style-type: none"> • 3-4 m² per litre 	
Storage & shelf life		
	12 months Store as cool as possible but protected from frost. In the event of frost any gelification is reversible on warming	36 months in an unopened container. Store between 0 °C and 35 °C in a dry place. Do not store with explosive substances or spontaneously combusting substances. Store as cool as possible but protected from frost. Cold or frozen adhesive (under 5 °C) will become fully useable if slowly acclimatised up to working temperature (approx 20 °C)
Preparation of surfaces		
	Clean surfaces and ArmaFlex Ultima surface with Armaflex Cleaner. Compatibility with bases: <ul style="list-style-type: none"> • Very good adhesion to metallic surfaces. • The adhesive's compatibility with colour coated surfaces needs to be tested. • Incompatible with asphalt, bitumen and red lead (linseed oil-based) 	Clean surfaces and ArmaFlex Ultima surface with Armaflex Cleaner. Compatibility with bases: <ul style="list-style-type: none"> • Very good adhesion to metallic surfaces. • The adhesive's compatibility with colour coated surfaces needs to be tested. • Incompatible with asphalt, bitumen, red lead (linseed oil-based), polystyrene and plasticated PVC
Working time at 20 °C		
Wet adhesion time	Up to 2 minutes	
Drying time	3- 5 mins	2 min
Contact adhesion	15 - 20 mins	10 - 15 mins
Setting	36 hours	24 hours
The open time depends on the quantity as well as indoor climate conditions. Before operating plant the setting time needs to be allowed to elapse.		
Other technical features		
Flash point	approx -20 °C	-17 °C
Explosion limits	Lower: approx 1 Vol % Upper: approx 13 Vol %	Lower: approx 1.1 Vol % Upper: approx 11.5 Vol %
Hazard class	Highly flammable, Regulation of inflammable liquids.	
Ageing stability	Very good	
Resistance to weathering	Very good	
Recycling	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Packaging must be emptied of all residues. Packaging with traces of cured product can be recycled. Packaging with uncured product must be recycled into new product.	
Transport classes	Depending on the type of transport	

TECHNICAL DATA

ARMAFLEX HT625

One-component adhesive for high temperature applications, specifically developed for HT/ArmaFlex insulations but also suitable for all ArmaFlex synthetic rubber based insulation materials.



Material type	Contact adhesive on polychloroprene basis, free of aromatic components.
Colour	Beige
Material special info	Liquid
Applications	Application on pipes and tanks with service temperature up to +150 °C. Gluing of HT/ArmaFlex insulation materials and other Armaflex synthetic rubber based insulation materials (except Armaflex Ultima).
Special features	Specially formulated adhesive for uniform and safe seam bonding of ArmaFlex insulation materials applied on high temperature lines.
Assembly	Please observe our installation instructions/product data sheets. Application temperature: ideally +20 °C, not below 0 °C. At temperatures below +5 °C or high humidity approx above 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on operating plant or areas exposed to strong sunlight.
Remarks	The adhesive achieves its final strength after 36 hours. Only then should plant be put into operation. Wait 36 hours before applying coatings (exception: ArmaFinish 99), adhesive tape, coverings etc.

Temperature Range

Max service temperature	+150 °C (For temperatures above +110 °C please contact our technical department)
Min service temperature	-50 °C (For temperatures below -50 °C please contact our technical department)

Performance

Coverage (guidance only)	<p>Minimum consumption with the adhesive applied to both surfaces: ArmaFlex tubes (thickness > consumption unslit > consumption slit)</p> <ul style="list-style-type: none"> • 10mm > 1120m per litre > 140m per litre • 20mm > 280m per litre > 70m per litre • 30mm > 175m per litre > 45m per litre • 40mm > 130m per litre > 35m per litre <p>Sheets</p> <ul style="list-style-type: none"> • 3-4 m² per litre
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Storage & shelf life

12 months in an unopened container. Do not store with explosive substances / spontaneously combusting substances. Store as cool as possible but protected from frost. In the event of frost any gelification is reversible on warming

Preparation of surfaces

Clean surfaces and ArmaFlex surface with ArmaFlex Cleaner. Compatibility with bases:

- Very good adhesion to metallic surfaces.
- The adhesive's compatibility with colour coated surfaces needs to be tested.
- Incompatible with Asphalt, bitumen and red lead (linseed oil-based)

Working time

Drying time	3- 5 mins
Contact adhesion	15 - 20 mins
Setting	36 hours

The open time depends on the quantity as well as indoor climate conditions. Before operating plant the setting time needs to be allowed to lapse.

Other technical features

Flash point	approx -26 °C
Explosion limits	Lower: approx 1.1 Vol %; Upper: approx 12.8 Vol %
Hazard class	Highly flammable
Ageing stability	Very good
Resistance to weathering	Very good
Recycling	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Packaging must be emptied of all residues. Packaging with traces of cured product can be recycled. Packaging with uncured product must be recycled into new product.
Transport classes	Depending on the type of transport

TECHNICAL DATA

ARMAFLEX ULTIMA 700

One-component adhesive specifically developed for ArmaFlex Ultima and insulating materials based on Armaprene® synthetic rubbers.



Material type	Contact adhesive on polychloroprene basis, free of aromatic components.
Colour	Blue
Applications	Application on pipes and tanks with service temperature up to +110°C. Gluing of ArmaFlex Ultima and insulation materials based on Armaprene® synthetic rubbers.
Assembly	Please observe our installation instructions/product data sheets. Application temperature: ideally +15°C to +20°C, not below 0°C. At temperatures below +5°C or high humidity (approx above 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is poor or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on operating plant or areas exposed to strong sunlight.
Remarks	The adhesive achieves its final strength after 36 hours. Only then should plant be put into operation. Wait 36 hours before applying coatings (exception: Armafinish 99), adhesive tape, coverings etc.

ARMAFLEX ULTIMA RS850

Non-drip one component adhesive gel form. Specifically designed for processing ArmaFlex and insulating materials based on Armaprene® synthetic rubbers



Material type	Thixotropic one component contact adhesive based on polychloroprene.
Colour	Blue
Material special information	Gel based
Applications	Application on pipes and tanks with service temperature up to +70°C. Gluing of ArmaFlex Ultima and insulation materials based on Armaprene® synthetic rubbers.
Assembly	Please observe our installation instructions/product data sheets. Application temperature: ideally +15°C to +20°C, not below +10°C. At temperatures below +5°C or high humidity (approx above 80%), increased condensation may form on the surfaces to be glued or adhesive films. In these cases bonding is bad or impossible. This can be tested by using absorbent paper (blotting or crepe paper). Work should not be carried out on operating plant or areas exposed to strong sunlight.
Remarks	The adhesive achieves its final strength after 24 hours. The system should not be operated during this period and any self-adhesive tape or protective coatings should only be applied after this period has elapsed.

	ULTIMA 700	ULTIMA RS850
Temperature Range		
Max service temperature	+110°C (for temperatures above +110°C please contact our technical department)	+70°C
Min service temperature	-50°C (for temperatures below -50°C please contact our technical department)	-40°C (for temperatures below -40°C please contact our technical department)
Performance		
Coverage (guidance only)	Minimum consumption with the adhesive applied to both surfaces: ArmaFlex tubes (thickness > consumption unslit > consumption slit) <ul style="list-style-type: none"> • 10mm > 1,120m per litre > 140m per litre • 20mm > 280m per litre > 70m per litre • 30mm > 175m per litre > 45m per litre • 40mm > 130m per litre > 35m per litre Sheets <ul style="list-style-type: none"> • 3-4 m² per litre 	
Storage & shelf life		
	12 months in an unopened container. Store as cool as possible but protected from frost. In the event of frost any gelification is reversible on warming	18 months in an unopened container. Store between 0°C and 35°C in a dry place. Do not store with explosive substances or spontaneously combusting substances. In the event of frost any gelling is reversible on warming
Preparation of surfaces		
	Clean surfaces and ArmaFlex Ultima surface with ArmaFlex Cleaner. Compatibility with bases: <ul style="list-style-type: none"> • Very good adhesion to metallic surfaces. • The adhesive's compatibility with colour coated surfaces needs to be tested. • Incompatible with asphalt, bitumen and red lead (linseed oil-based) 	Clean surfaces and ArmaFlex Ultima surface with ArmaFlex Cleaner. Compatibility with bases: <ul style="list-style-type: none"> • Very good adhesion to metallic surfaces. • The adhesive's compatibility with colour coated surfaces needs to be tested. • Incompatible with asphalt, bitumen, red lead (linseed oil-based), polystyrene and plasticated PVC
Working time		
Drying time	3- 5 mins	2 min
Contact adhesion	15 - 20 mins	10 - 15 mins
Setting	36 hours	24 hours
The open time depends on the quantity as well as indoor climate conditions. Before operating plant the setting time needs to be allowed to elapse.		
Other technical features		
Flash point	approx -26 °C	
Explosion limits	Lower: approx 1.1 Vol % Upper: approx 12.8 Vol %	
Hazard class	Highly flammable	
Ageing stability	Very good	
Resistance to weathering	Very good	
Recycling	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Packaging must be emptied of all residues. Packaging with traces of cured product can be recycled. Packaging with uncured product must be recycled into new product.	
Transport classes	Depending on the type of transport	

ARMAFLEX RS850



Code	Description	Pieces/carton	£/pc
ADH-RS850/0.5	ArmaFlex RS850 0.5 Litre can	6	25.44

ARMAFLEX 520



Code	Description	Pieces/carton	£/pc
ADH-520/0.25E	ArmaFlex 520 0.25 Litre can with brush	24	8.82
ADH-520/0.5E	ArmaFlex 520 0.5 Litre can	12	15.20
ADH-520/1.0E	ArmaFlex 520 1.0 Litre can	12	25.67
ADH-520/2.5E	ArmaFlex 520 2.5 Litre can	8	64.19

ARMAFLEX ULTIMA 700



Code	Description	Pices/carton	£/pc
AHU-700/1.0	ArmaFlex Ultima 700 Adhesive, 1 Litre cans	12	37.17

ARMAFLEX ULTIMA RS850



Code	Description	Pices/carton	£/pc
AHU-RS850/0.5	ArmaFlex Ultima RS850 Adhesive, 0.75 Litre cans	6	35.61

ARMAFLEX HT625 ADHESIVE



Code	Description	Pices/carton
ADH-HT625/0.25	ArmaFlex HT625 one component adhesive, 0.25 Litre can, with brush	40
ADH-HT625/0.5	ArmaFlex HT625 one component adhesive, 0.5 Litre can, with brush	12
ADH-HT625/1.0	ArmaFlex HT625 one component adhesive, 1 Litre can, with brush	12

ArmaFlex[®] accessories



ARMAFLEX TOOLS FOR THE PROFESSIONALS!

When it comes to preventing condensation and energy losses on equipment, not only high-quality insulation material is crucial, but also the installation.

ArmaFlex insulation materials not only have the required technical properties, they can also be installed quickly and easily. Armacell already offers various tools and aids such as the ArmaFlex Application Manual and installation videos.

Now all the tools and aids are available in a lightweight, robust, lockable aluminium case!

PROPERTIES

ARMAFINISH 99

THE ELASTIC PAINT DESIGNED FOR PROTECTION & COVERING OF ARMAFLEX

- Resistant to weathering and ageing
- Coating remains elastic
- Drip-free paint
- Specially developed for covering Armaflex®
- Protection of Armaflex® insulation materials



ArmaFinish 99 is a water-based coating using an advanced terpolymer resin system. When properly applied the coating is suitable for the protection of ArmaFlex flexible thermal insulation materials against sunlight, UV radiation and chemical attack. The coating, when fully cured, maintains the flexibility, resistance to water vapour and fire performance of ArmaFlex material. Where resistance to damage is a particular requirement, the coating may be further strengthened using a mesh glass fibre scrim.



ARMAFLEX SF CLEANER

Solvent free cleaner

ArmaFlex SF Cleaner can be used to clean the dirty surfaces of technical installations as well as the surfaces of insulating materials. It comes with a very practical spray bottle.

ARMAFLEX CLEANER

SURFACE CLEANER
PREPARATION FOR
ARMAFLEX®
INSTALLATIONS



- Ensures a clean surface before the use of ArmaFlex® Adhesives
- Removal of dirt from surfaces
- Cleaning of brushes and tools contaminated with ArmaFlex® adhesive

ArmaFlex cleaner is a clear, colourless liquid. It is used for the removal of grease oils and dirt from surfaces prior to the use of ArmaFlex adhesives or ArmaFinish 99 paint. The cleaner may also be used to clean ArmaFlex adhesive from tools and brushes.

TECHNICAL DATA

	ARMAFLEX SF Cleaner Water-soluble cleaner	ARMAFLEX Cleaner Special cleaner for use with all ArmaFlex adhesives
Colour	Beige	Clear
Material special info	Liquid	Liquid
Applications	Cleaning of surfaces where ArmaFlex is to be installed.	Cleaning of surfaces where ArmaFlex is to be installed.
Assembly	To ensure a perfect adhesion all contaminated surfaces, including ArmaFlex, must be cleaned.	To ensure a perfect adhesion all contaminated surfaces, including ArmaFlex, must be cleaned. In addition the cleaner can be used to surfaces where ArmaFinish 99 is being applied.
Remarks	ArmaFlex SF cleaner to be sprayed onto areas that require cleaning and allowed to settle (time depending on the amount of dirt) before washing off.	Can also be used to clean tools.
Storage & shelf life	12 months sealed in original container. Keep container tightly closed in a cool, well ventilated place. Protect from frost and do not store below +5 °C.	12 months sealed in original container. Keep container tightly closed in a cool, well ventilated place. Protect from heat & direct sunlight. Do not store together with explosive substances or spontaneously combusting substances.
Preparation of surfaces	Clean surfaces and ArmaFlex surface with ArmaFlex Cleaner. Compatibility with bases: <ul style="list-style-type: none"> • Very good adhesion to metallic surfaces. • The adhesive's compatibility with colour coated surfaces needs to be tested. • Incompatible with asphalt, bitumen and red lead (linseed oil-based) 	
Flash point	>100 °C	approx -20 °C
Explosion limits		Lower: approx 1% Vol, Upper: approx 13 % Vol. Regulation of inflammable liquids.
Recycling	Dispose of waste according to applicable legislation, for more details see the relevant safety data sheets.	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Packaging must be emptied of all residues. Cans must be emptied prior to recycling. Cans containing adhesive must be recycled into new product.
Transport classes	Non hazardous material as defined by the transport regulations.	Dependent on the transport sector

ARMAFINISH 99 UV resistant paint that remains permanently elastic, resistant to weathering and with good ageing resistance.	
Colour	Black, White (RAL 9001) OR GREY (RAL 7037)
Material type	Non-drip
Material special info	Normal consumption: 0.55 Litres per M ² when two coats applied (corresponds to a dry film thickness of 0.26mm)
Applications	Protection of ArmaFlex insulation materials when installed outdoors and for marking purposes when used indoors.
Assembly	ArmaFlex insulation (except HT/ArmaFlex & ArmaFlex Ultima, see product data sheets) installed outdoors, should be covered with two coats. Application temperature: +10°C to +30 °C, Drying time: 2 hours (+20 °C), Max relative humidity: 80%. It's necessary to allow 2 hours between each coat and the second coat must be applied within 7 days. The paint may be applied with a brush or roller and tools cleaned with water or ArmaFlex cleaner.
Remarks	Unprotected ArmaFlex must not be exposed to weathering for more than 3 days and ArmaFinish 99 paint should be applied as soon as possible. The protective coating should be inspected at regular intervals. After 2 years at the latest a further two coats should be applied.
Storage & shelf life	12 months in unopened container. Once open keep container tightly closed in a cool, well ventilated place and protect from frost.
Explosion limits	None
Recycling	Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company. For details see relevant Safety Data Sheet. Cans must be emptied prior to recycling. Cans containing adhesive must be recycled into new product.

ARMAFLEX CLEANER



Code	Description	Pices/carton
CLEANER/1.0	Special cleaner for use with ArmaFlex Adhesive	4
SF-CLEANER/1.0	Solvent free cleaner for use with ArmaFlex Adhesive	6

ARMAFINISH 99 PAINT



Code	Description	Pices/carton
FINISH/BK-2.5	Protective paint for ArmaFlex, black, 2.5 Litres	4
FINISH/WH-2.5	Protective paint for ArmaFlex, White, 2.5 Litres	4
FINISH/GY-2.5	Protective paint for ArmaFlex, grey, 2.5 Litres	4

TAPE

Colour - Black , Microban®



Code	Description	Colour	Width (mm)	Length (m)	Thickness (mm)	Rolls/carton
AF-TAPE-MC	AF/ArmaFlex tape	Black	50	15	3	12
HT-TAPE	HT/ArmaFlex tape	Black	50	15	3	12
NH-TAPE	NH/ArmaFlex tape	Dark Grey	50	15	3	12
UD-TAPE	ArmaFlex Ultima tape	Blue	50	15	3	12
ACH-PSATAPES-30	Arma-Chek Silver tape	Silver	30	25	0.08	10
ACH-PSATAPES-50	Arma-Chek Silver tape	Silver	50	50	0.08	6
ACH-TAPED2025 •	Arma-Chek D tape	Dark Grey	20	25	0.18	12
ACH-TAPED5050 •	Arma-Chek D tape	Dark Grey	50	50	0.18	6
ACH-TAPED10025 •	Arma-Chek D tape	Dark Grey	100	25	0.18	3

MASTICS



Code	Description	Pieces/carton
ACH-MASTICSD	Mastic black. Sealing compound for installing Arma-Chek outdoors, 290 ml	12
ACH-MASTICS	Sealing compound for installing Arma-Chek R, Cartridge 290 ml	12

TOOLS



Code	Description	Pices/carton
BLADES	Spare blades for tube slitter-knife (50x6 pcs)	50x6
BLADES-PCS	Spare blades for tube slitter-knife (6 pcs)	6
CERAMIC KNIFE	Knife with ceramic blade (10 cm) and rubber grip (9 cm)	1
CUTTING-SET	ArmaFlex knife-set (3 knives + 1 sharpening stone)	1
GLUEM-BRUSH11MM	Gluemaster extra brush points with cap (11mm diameter)	5x4
GLUEM-BRUSH17MM	Gluemaster extra brush points with cap (17mm diameter)	5x4
GLUEMASTER B	ArmaFlex Gluemaster (adhesive pump)	12
SLITTER	Special tube slitter-knife	10

TOOLBOX

Length - 570mm, Width - 325mm, Thickness - 160mm, Aluminium toolbox



Code	Description	Pices/carton
TOOLBOX	Case containing tools to install ArmaFlex	1

TOOLS FOR THE PROFESSIONALS

ARMAFLEX TOOLBOX

All the tools and aids required to install ArmaFlex professionally in a lightweight, yet robust, aluminium case. With all the high-quality tools for measuring, cutting and gluing elastomeric insulation materials insulators, are well-equipped for all fields of application.



MEASURING CORRECTLY

- ArmaFlex Application Manual
- Folding rule with circumference scale
- Callipers (300 mm) to determine diameters precisely
- Edding & silver-ink marker & ballpoint pen
- Bow compass with holder

CUT PERFECTLY

- ArmaFlex template
- 4 knives: with blade length of 9, 17, 27 cm & 1 ceramic knife
- Knife holster
- Sharpening stone
- Copper pipe ends (6 different diameters)
- Sharpening tool for copper pipe ends

GLUE NEATLY

- ArmaFlex short-bristle brushes 14, 70mm flat brush
- ArmaFlex gluemaster (adhesive pump)
- Cleaning cloth for tools



Pipe Diameter chart

COPPER PIPES



STEEL PIPES



PLASTIC PIPES



Insulation bore size (mm)	COPPER PIPE		STEEL PIPE			PASTIC PIPE
	OD (mm)	OD (inch)	Nominal Ø (DN)	OD (mm)	OD (inch)	OD (mm)
6	6	1/4				6
10	10	3/8	6	10.2	1/8	10
12	12	1/2				12
15	15	5/8	8	13.5	1/4	
18	18	3/4	10	17.2	3/8	16
20	19	3/4				20
22	22	7/8	15	21.3	1/2	
28	28	1 1/8	20	26.9	3/4	25
35	35	1 3/8	25	33.7	1	
42	42	1 5/8	32	42.4	1 1/4	40
48	48	1 7/8	40	48.3	1 1/2	
54	54	2 1/8				50
60	60	2 5/8	50	60.3	2	
67	67	2 5/8				63
76	76	3	65	76.1	2 1/2	75
80	80	3 1/8				
89	89	3 1/2	80	88.9	3	
93	92	3 5/8				90
108	108	4 1/4				
114	114	4 1/2	100	114.3	4	110
Sheet required						125
	133					
			125	139.7	5	140
	159					160
			150	168.3	6	
						180
	219		200	219.1	8	
						225
						250
	267					
			250	273	10	
						280
						315
			300	329.9	12	
			350	355.6	14	355
			400	406.4	16	400
		450	457	18		
		500	508	20		
		600	610	24		

