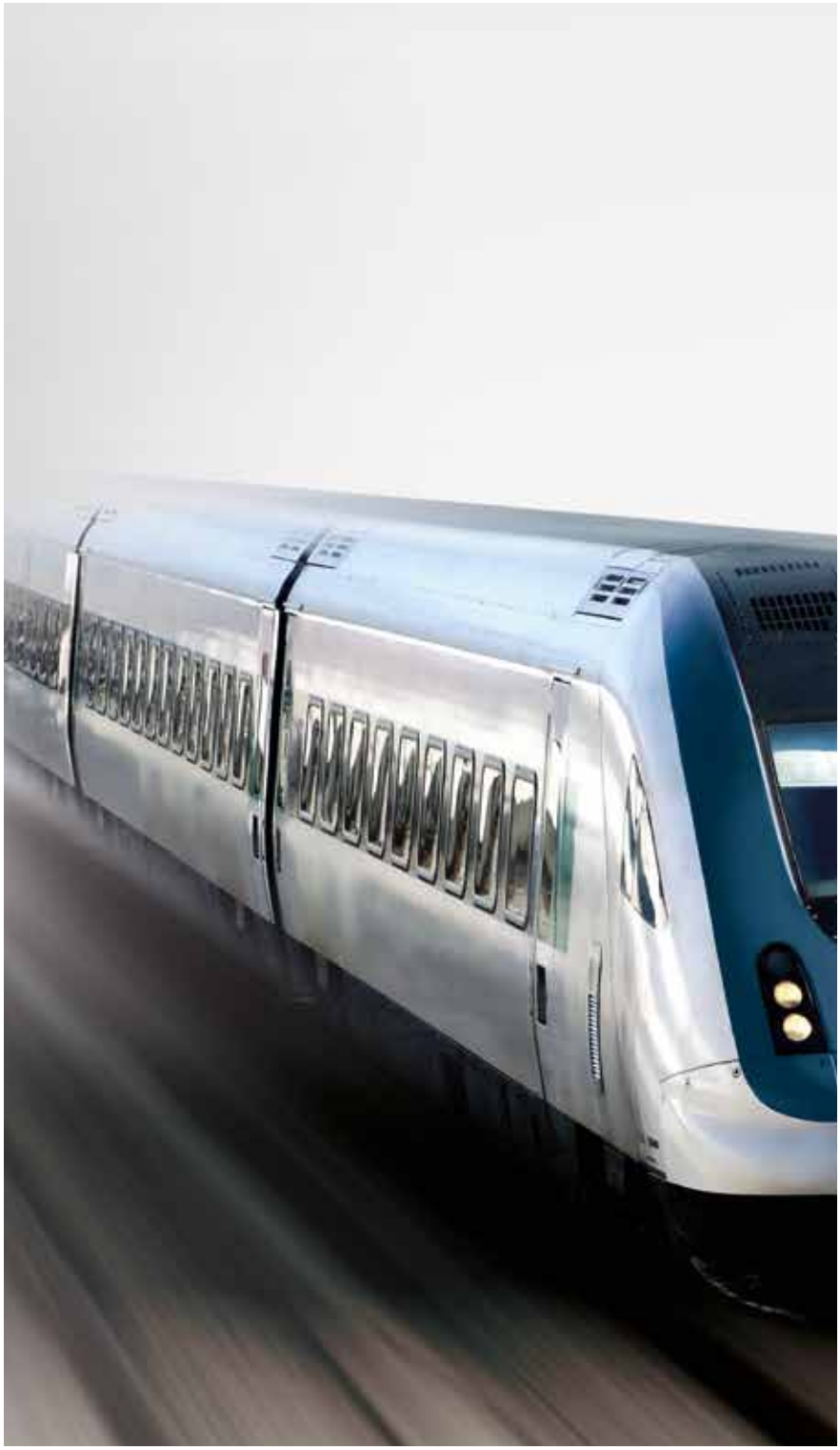
ArmaFlex® Rail

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

Armaflex® Rail

EN 45545

★★★

CERTIFIED

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:

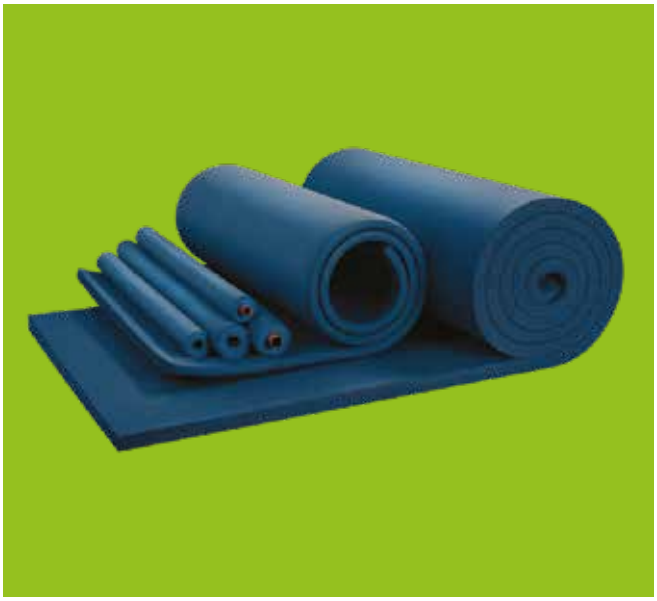
- Flame Spread
- Ignitability
- Heat Release
- Smoke Emissions
- Toxic Gas Emissions

Requirment 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	MAHRE kWm^{-2}	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.

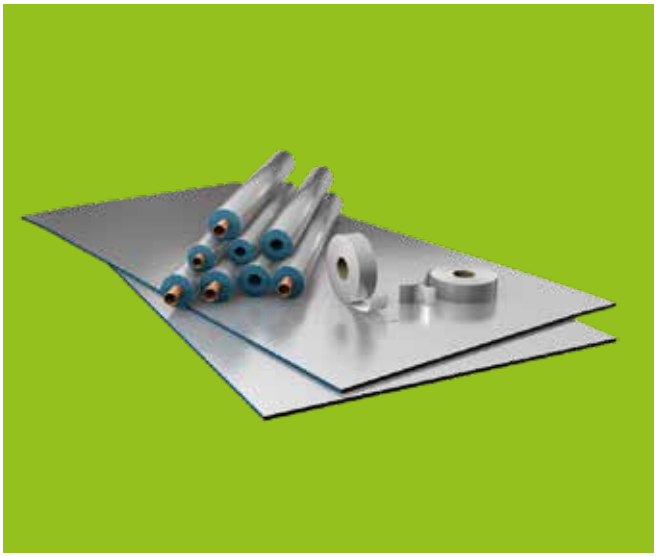
- Extremely low smoke density and superior fire behaviour
- Built-in Microban® antimicrobial protection reduces mould and bacteria growth
- Complies with most international railway standards for insulation materials
  - EN 45545 – HL2, R1
  - NFPA 130
  - DIN 5510-2
  - GOST 12.1.044-89
  - United Nations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



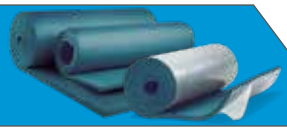
RANGE

TUBE

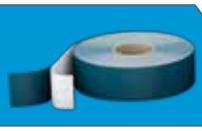
Tube, Pre-covered tube

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 vechicles.	
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.

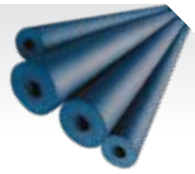
Property	**Value/Assessment**	**Test**	**Standards & Remarks**
Temperature Range			
Max service temperature	+110°C (+85°C if sheet or tape is glued to the object with its whole surface)	EU5654	Tested acc. to EN 14706, EN 14707 & EN 14304
Min service temperature	-50°C		
Thermal Conductivity			
	λ 0°C ≤ 0.040 W/(m·K) [40+0.1· ϑ_m + 0.0009· ϑ_m^2]/1000	EU 5654	Declared acc. to EN ISO 13787 Tested acc. to EN 12667 & EN ISO 8497
Water vapour diffusion resistance			
	μ ≥ 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 vecicles (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	Is≤ 25 Ds(4.0) ≤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 Mircroban® antimicrobial protection for railway vechicles.	
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 suface coefficient of 8 W/(m^2·K).

Property	**Value/Assessment**	**Test**	**Standards & Remarks**
Temerature 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 Coductivity			
	λ 0°C < 0.040 W/(m·K) [40+0.1 · ϑ_m + 0.0009 · ϑ_m^2]/1000		Declared acc. to EN ISO 13787 Tested acc. to EN 12667 & EN ISO 8497
Water vapour diffusion resistance			
	μ ⩾ 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

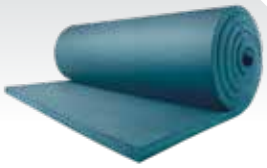
Width - 2m, **Colour** - Blue



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)	m²/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	

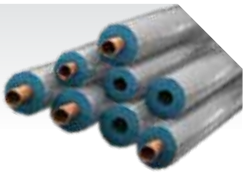
ARMAFLEX RAIL SD SELF-ADHESIVE CONTINUOUS SHEET (ROLLS)

Width - 1m, **Colour** - Blue

Code	Thickness (mm)	Roll Length (m)	m²/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

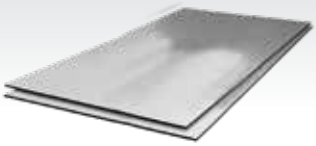
Width - 1m, **Colour** - Blue, **Covering Colour** - Silver



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	

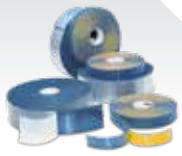
ARMAFLEX RAIL SD-C SELF-ADHESIVE PRE-COVERED SHEET

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

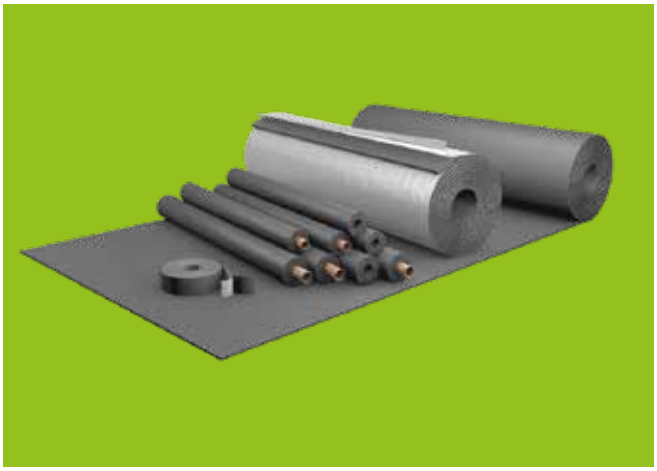


Code	Colour	Width (mm)	Roll Length (m)	Thickness (mm)	Rolls/carton	
RA-TAPE	Blue	50	15	3	12	
ACH-PSATAPES-30	Silver	30	25	0.08	10	
ACH-PSATAPES-50	Sliver	50	50	0.08	6	

ARMAFLEX RAIL ZH

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

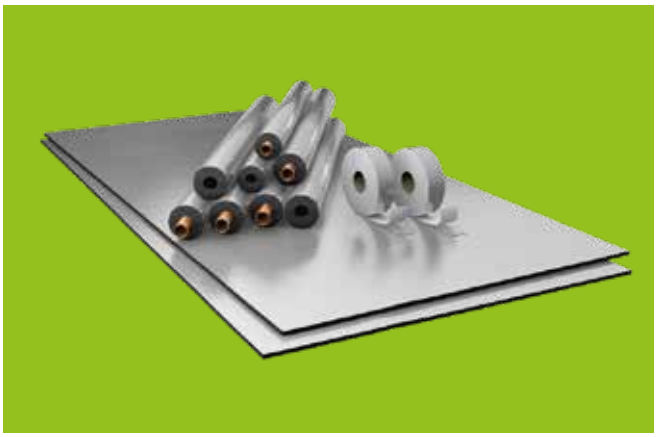
- The protective halogen-free insulation to reduce corrosive effects and smoke toxicity in a fire
- Low smoke density, superior fire behaviour
- Dust and fibre free material with low thermal conductivity
- High-tech insulation with built-in fire protection for railway vehicles
  - EN 45545 – HL2, R1



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

ArmaFlex RS850 adhesive

ArmaFlex Cleaner

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			
	λ 0°C ≤ 0.040 W/(m·K) [40+0.1· ϑ_m + 0.0009· ϑ_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			
	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 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	

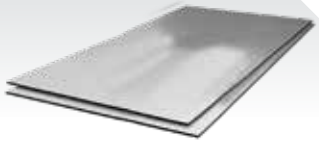
ARMAFLEX RAIL ZH-C PRE-COVERED TUBE

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

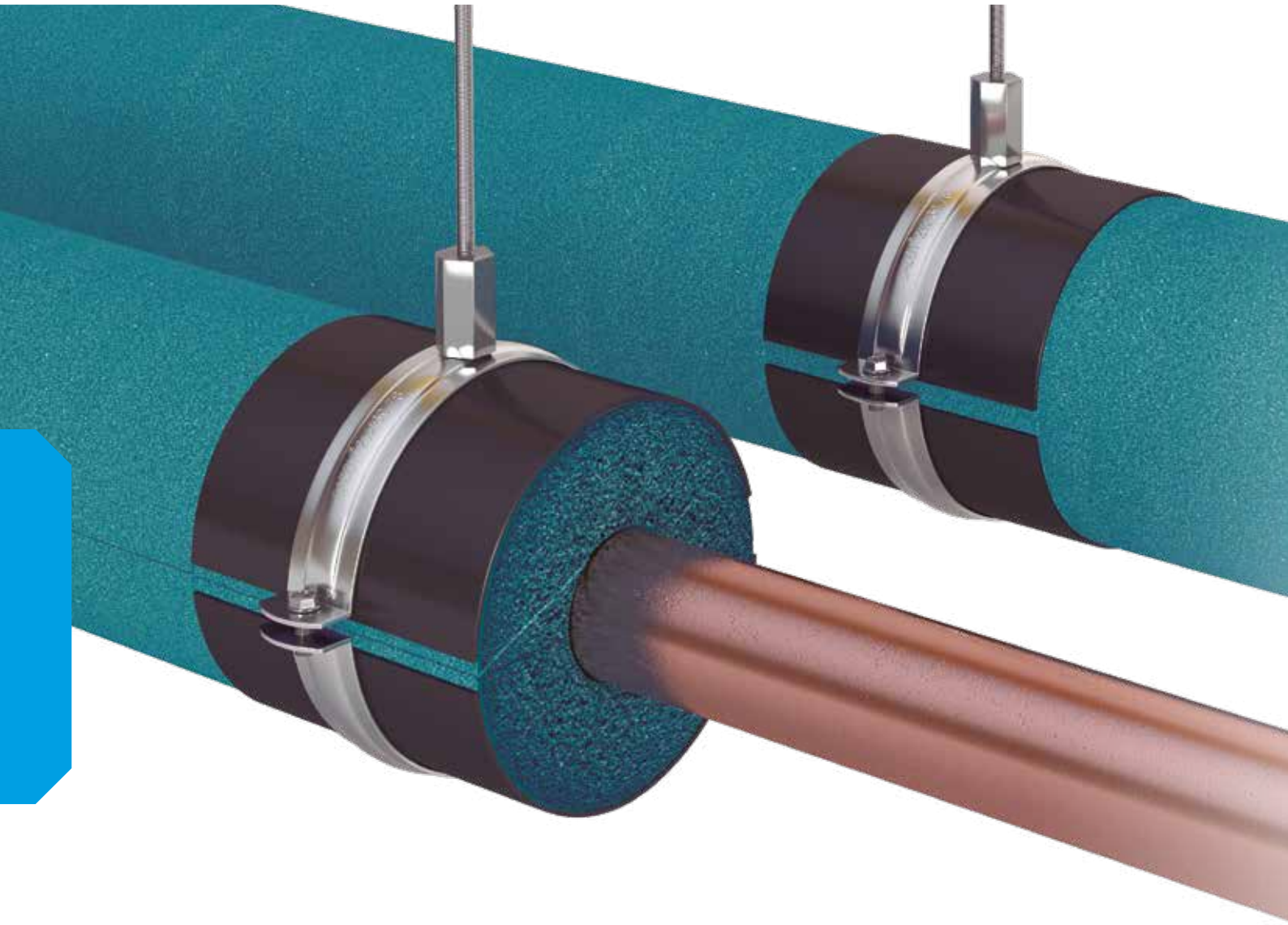


Code	Thickness (mm)	m^2/carton	
ZHC-06MM/A	6	50	
ZHC-10MM/A	10	34	
ZHC-13MM/A	13	24	
ZHC-19MM/A	19	16	
ZHC-25MM/A	25	12	

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	

ArmaFix Ultima®



COMPATIBLE PIPE SUPPORTS FOR USE WITH ARMAFLEX ULTIMA LOW SMOKE INSULATION

- Environmentally friendly PET core, with greater load capacity.
- Increased fire safety thanks to low smoke emission
- Prevents thermal bridges and reduction of energy losses
- Very good mechanical resistance
- Compatible with ArmaFlex Ultima tubes

PIPE SUPPORTS & CLAMPS

RECOMMENDED PRODUCTS

For a complete installation

ArmaFlex Ultima tube

ArmaFlex Ultima 700 adhesive

ArmaFlex Ultima RS850 adhesive

TECHNICAL DATA

Pipe and duct supports for refrigeration and air conditioning installations to prevent condensation at fixing points. Theremally non-interacting single piece, with 2 ArmaFORM PET-foam sections with self-adhesive closure. All dimensions correspond to the ArmaFlex Ultima tube and sheet range.

Material type	PET foam bearing segments, embedded in and glued to ArmaFlex Ultima elastomeric foam material. Outside bearing shell made of painted 0.8mm thick aluminium sheeting , which simultaneously serves as a vapour barrier for the PET bearing segments.
Colour	Blue
Material information	Traces of silicone can be found on the protective film used on the self-adhesive closures. Please contact customer services for details.
Applications	Thermally non-interating mounting aid for tubes and sheet in referigeration and air-conditioning applications, which are to be insulated with ArmaFlex Ultima.
Remarks	When used in applications with intermittent temperatures, thermal length extensions may cause inherent pressure in the installation; this needs to be considered in the overall insulation construction.

Property	**Value/Assessment**	**Standards & Remarks**
Temperature Range		
Max service temperature	+110˚C	
Min service temperature	-50˚C (for temeratures below -50 ˚C please contact our technical department)	
Thermal Conductivity		
	Same as ArmaFlex Ultima elastomeric foam	Declared acc. to EN ISO 13787 Tested acc. to EN12667 & EN ISO 8497
Water Vapour Diffusion Resistance		
	Same as ArmaFlex Ultima elastomeric foam	Tested acc.to EN 12086 & EN 13469
Fire Performance		
Reaction to fire	**COMPLETE SYSTEM INSALLATION:** Installed with ArmaFlex Ultima tubes **B_Ls1,d0** Installed with ArmaFlex Ultima sheet **Bs2,d0**	Classified acc. to EN 13501-1 Tested acc. to EN 13823 & EN ISO 11925-2
Practical fire behaviour	Self-extinguishing, does not drip & does not spread flames.	
Acoustic Performance		
Reduction of structure-borne sound transmission	According to insulation material used	According to DIN 4109
Other technical features		
Density	95 - 105 kg/m³ (pipe bearing segments)	
Storage & shelf life	Products with self-adhesive closures to be installed within 1 year	

ArmaFix clamps	
Description	Pipe clamp with quick release closing and combination mounting nut
Material type	Steel with an electrolytic zinc coating to protect from corrosion.
Colour	Silver
Material information	Clamp supplied with combination nut for fixing to threaded rod.
Applications	For use alongside ArmaFlex insulation at pipe hanging points to eliminate thermal bridging on refrigeration and air-conditioning installations.
Fire Performance	The insulation layer does not affect the fire performance of the steel clamp
Screw connections	M8 / M10 combination nut
Tension screws	M6 / M8
Clamp	Width 20mm - 30mm, Thickness 1.5mm - 3mm

PIPE SUPPORTS AND CLAMPS

Pipe max. Ou89tside - Ø (mm)	Max permissible distance (m)	13mm INSULATION THICKNESS			CLAMPS13mm		
		Code	Pieces/carton		Code	Pieces/carton	
10	2	ULP13(9)-10/12 •	32		PCX 025/030	25	
12	2	ULP13(9)-10/12 •	32		PCX 025/030	25	
15	2	ULP13(9)-15/18 •	32		PCX 033/037	25	
18	2	ULP13(9)-15/18 •	32		PCX 033/037	25	
22	2.75	ULP13(9)-22/25 •	32		PCX 042/046	25	
25	2.75	ULP13(9)-22/25 •	32		PCX 042/046	25	
28	3	ULP13(9)-28/30 •	32		PCX 047/052	25	
30	3	ULP13(9)-28/30 •	32		PCX 047/052	25	
35	3.5	ULP13(9)-35/28 •	28		PCX 054/058	25	
38	3.5	ULP13(9)-35/38 •	28		PCX 054/058	25	
42	3.75	ULP13(9)-42/45 •	28		PCX 063/068	25	
45	3.75	ULP13(9)-42/45 •	28		PCX 063/068	25	
48	4.25	ULP13(9)-48 •	28		PCX 068/073	10	
54	4.25	ULP13(9)-54/57 •	28		PCX 068/073	10	
57	4.25	ULP13(9)-54/57 •	28		PCX 068/073	10	
60	4.75	ULP13(9)-60/64 •	24		PCX 082/085	10	
64	4.75	ULP13(9)-60/64 •	24		PCX 082/085	10	
76	5.50	ULP13(9)-76/80 •	20		PCX 092/099	10	
80	5.50	ULP13(9)-76/80 •	20		PCX 092/099	10	
89	6	ULP13(9)-89 •	16		PCX 108/112	10	

Other information
• Not a stock item

Pipe max. Outside - Ø (mm)	Max permissible distance (m)	19mm INSULATION THICKNESS			CLAMPS 19mm		
		Code	Pieces/carton		Code	Pieces/carton	
10	2	ULP19-10/12 •	28		PCX 038/041	25	
12	2	ULP19-10/12 •	28		PCX 038/041	25	
15	2	ULP19-15/18 •	28		PCX 047/052	25	
18	2	ULP19-15/18 •	28		PCX 047/052	25	
22	2.75	ULP19-22/25 •	28		PCX 054/058	25	
25	2.75	ULP19-25/25 •	28		PCX 054/058	25	
28	3	ULP19-28/30 •	28		PCX 059/063	25	
30	3	ULP19-28/30 •	28		PCX 059/063	25	
35	3.5	ULP19-35/28 •	24		PCX 063/068	25	
38	3.5	ULP19-35/38 •	24		PCX 063/068	25	
42	3.75	ULP19-42/45 •	24		PCX 068/073	10	
45	3.75	ULP19-42/45 •	24		PCX 068/073	10	
48	4.25	ULP19-48 •	24		PCX 072/080	10	
54	4.25	ULP19-54/57 •	24		PCX 082/085	10	
57	4.25	ULP19-54/57 •	24		PCX 082/085	10	
60	4.75	ULP19-60/64 •	20		PCX 088/092	10	
64	4.75	ULP19-60/64 •	20		PCX 088/092	10	
76	5.50	ULP19-76/80 •	16		PCX 099/103	10	
80	5.50	ULP19-76/80 •	16		PCX 099/103	10	
89	6	ULP19-89 •	12		PCX 112/118	10	

Pipe max. Outside - Ø (mm)	Max permissible distance (m)	25mm INSULATION THICKNESS			CLAMPS 25mm		
		Code	Pieces/carton		Code	Pieces/carton	
15	2	ULP25-15/18 •	28		PCX 059/063	25	
18	2	ULP25-15/18 •	28		PCX 059/063	25	
22	2.75	ULP25-22/25 •	28		PCX 063/068	25	
25	2.75	ULP25-25/25 •	28		PCX 063/068	25	
28	3	ULP25-28/30 •	28		PCX 068/073	10	
30	3	ULP25-28/30 •	28		PCX 068/073	10	
35	3.5	ULP25-35/28 •	24		PCX 072/080	10	
38	3.5	ULP25-35/38 •	24		PCX 072/080	10	
42	3.75	ULP25-42/45 •	24		PCX 082/085	10	
45	3.75	ULP25-42/45 •	24		PCX 082/085	10	
48	4.25	ULP25-48 •	24		PCX 088/092	10	
54	4.25	ULP25-54/57 •	24		PCX 092/099	10	
57	4.25	ULP25-54/57 •	24		PCX 092/099	10	
60	4.75	ULP25-60/64 •	20		PCX 099/103	10	
64	4.75	ULP25-60/64 •	20		PCX 099/103	10	
76	5.50	ULP25-76/80 •	16		PCX112/118	10	
80	5.50	ULP25-76/80 •	16		PCX112/118	10	
89	6	ULP25-89 •	12		PCX137/142	10	

Other information
• Not a stock item

ArmaFlex Ultima® 700

COMPATIBLE PIPE SUPPORTS FOR USE WITH ARMAFLEX ULTIMA LOW SMOKE INSULATION

- New generation of blue coloured adhesives developed especially for bonding ArmaFlex Ultima
- Recommended for insulation materials based on Armaprene® synthetic foams
- Sustainable buildings - ArmaFlex Ultima RS850 helps meet the requirements for sustainable building and the certification of "green buildings"

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 expossed 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.

TECHNICAL DATA

Temperature Range	
Max service temperature	+110˚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)	Minimum consumption with the adhesive applied to both surfaces: ArmaFlex tubes (thickness > consumption unslit > consumption slit) • 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 • 3-4 m^2 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	
Preparation of surfaces	
Clean surfaces and ArmaFlex Ultima surface with ArmaFlex Cleaner. Compatibility with bases: • Very good adhesion to metallic sufaces. • The adhesive's compatibility with colour coated sufaces 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 elapse.	
Other technical features	
Flash point	approx -26 ˚C
Expolsion 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 Catalouge, 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 ULTIMA 700

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

ArmaFlex Ultima® RS850

COMPATIBLE PIPE SUPPORTS FOR USE WITH ARMAFLEX ULTIMA LOW SMOKE INSULATION

- New generation of blue coloured adhesives developed especially for bonding ArmaFlex Ultima
- Recommended for insulation materials based on Armaprene® synthetic foams
- Sustainable buildings - ArmaFlex Ultima RS850 helps meet the requirements for sustainable building and the certification of "green buildings"

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 expossed 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.

TECHNICAL DATA

Temperature Range	
Max service temperature	+70˚C
Min service temperature	-40˚C (for temperatures below -40 ˚C please contact our technical department)
Performance	
Coverage (guidance only)	
Storage & shelf life	
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: • Very good adhesion to metallic surfaces. • The adhesive's compatibility with colour coated sufaces needs to be tested. • Incompatible with asphalt, bitumen, red lead (linseed oil-based), polystyrene and plasticated PVC	
Working time	
Drying time	2 min
Contact adhesion	10 - 15 mins
Setting	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
Expolsion 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 Catalouge, 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 ULTIMA RS850

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

ArmaFlex SF Cleaner

SOLVENT FREE CLEANER FOR SURFACE PREPARATION OF ARMAFLEX INSTALLATIONS

- Meets the higher requirements of green building schemes
- Prepares surfaces for good adhesion of Armaflex products
- Can be applied sparingly and precisely thanks to the practical spray bottle

ARMAFLEX SF Cleaner Water-soluble cleaner	
Colour	Beige
Material special info	Liquid
Applications	Cleaning of surfaces where ArmaFlex is to be installed.
Assembly	To ensure a perfect adhesion all contaminated sufaces, including ArmaFlex, must be cleaned.
Remarks	ArmaFlex SF cleaner to be spayed onto areas that require cleaning and allowed to settle (time depending on the amount of dirt) before washing off.

Technical features	
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.
Preparation of surfaces	Clean surfaces and ArmaFlex surface with ArmaFlex Cleaner. Compatibility with bases: • Very good adhesion to metallic sufaces. • The adhesive's compatibility with colour coated sufaces needs to be tested. • Incompatible with asphalt, bitumen and red lead (linseed oil-based)
Flash point	>100 °C
Explosion limits	
Recycling	Dispose of waste according to applicable legislation, for more details see the relevant safety data sheets.
Transport classes	Non hazardous material as defined by the transport regulations.

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