

**THE FIRST CLOSED CELL INSULATION
FOR INCREASED FIRE SAFETY IN RAILWAY VEHICLES**



Armaflex[®]
RailSD



Microban is a registered trademark of Microban Products Company.

Working in partnership with



INCREASED FIRE SAFETY IN RAILWAY VEHICLES

- Fire flexible closed cell insulation that meets hazard level 2 according to EN 45545
- High-tech insulation with built-in fire protection for railway vehicles
- With Microban® antimicrobial product protection
- Low smoke density, superior fire behaviour
- Reduced risk of mold and mildew contributes to an improved indoor air quality
- Minimum energy loss through low thermal conductivity

TECHNICAL DATA - ARMAFLEX RAIL SD

Brief description	Highly-flexible, closed-cell insulation foam for railway vehicles, with improved fire retardant properties, low smoke generation and in-built Microban® antimicrobial protection
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
Applications	Insulation / protection for air-conditioning and refrigeration air ducts and pipes (incl. elbows, fitting, flanges etc.) to prevent condensation
Remarks	Armaflex Rail SD is not UV stable material and should not be exposed to direct sunlight

Property	Value/Assessment	Test *1	Special Remarks
Temperature range			
Temperature range	Max. service temperature	+ 110 °C (+ 85 °C If sheet or tape is glued to the object with its whole surface)	EU 5654 Tested acc. to EN 14706, EN 14707 and EN 14304
	Min. service temperature	- 50 °C	
Thermal conductivity			
Thermal conductivity	ϑm +/-0	°C	λ= [40 + 0,1·ϑm + 0,0009·ϑm²] / 1000
	λ ≤ 0,040	W/(m · K)	
Water vapour diffusion resistance			
Water vapour diffusion resistance	μ ≥ 5,000	EU 5654	Tested acc. to EN 12086 and EN 13469
Fire performance			
Reaction to fire	Hazard Level	HL2, R1 (3 mm sheets & tape: HL3, R1)	EU 5838 EU 5786 EU 5860 EU 6268 EU 6422
	Russian Federation Certificate of conformity	G1, V2, D2 ,T2, I1, 8	D 6219 D 5842 D 5612 D 5578
	Burning behaviour for use in motor vehicles	Passed	D 5750
	American fire test to railway components ≤ 13 mm	ASTM E 162 I ₃ ≤ 25; ASTM E 662 D _{s (4,0)} ≤ 100	
			Declared acc. to EN 45545-2 Declared acc. to: GOST 12.1.044-89 ECE R-118 p. 6-8 ECE R18 ANNEX. 9 NFPA 130:2014
Other fire class			
Practical fire behaviour	Self-extinguishing, does not drip, does not spread flames		
Dimensions and tolerances	In accordance with EN 14304, table 1		EU 5654 Tested acc. to EN 822, EN 823, EN 13467
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)

*1 Further documents such as test certificates and approvals can be requested using the registration number given.

ARMAFLEX RAIL SD TUBES

Length 2.0 m, Colour Blue

Pipe max. Outside - Ø (mm)	Inner Ø min/ max mm (tube)	9,0 mm		13,0 mm	
		Code	m/carton	Code	m/carton
12	13.0 - 14.5	RA-09X012	192	RA-13X012	130
15	16.0 - 17.5	RA-09X015	164	RA-13X015	112
18	19.0 - 20.5	RA-09X018	150	RA-13X018	98
22	23.0 - 24.5	RA-09X022	122	RA-13X022	88
28	29.0 - 30.5	RA-09X028	90	RA-13X028	64
35	36.0 - 37.5	RA-09X035	68	RA-13X035	56
42	43.0 - 44.5	RA-09X042	56	RA-13X042	48

Length tolerance for tubes ± 1,5 %
 Thickness tolerance ± 1,5 mm
 Reaction to fire Hazard level 2, R1 according to EN 45545-2

ARMAFLEX RAIL SD CONTINUOUS SHEETS (ROLLS)

Code	Thickness [mm]	Roll length [m]	m ² /carton
RA-03-99/E	3.0	30	30
RA-06-99/E	6.0	15	15
RA-09-99/E	9.0	10	10
RA-13-99/E	13.0	8	8
RA-19-99/E	19.0	5	5

Length tolerance for sheets ± 1,5 %
 Thickness tolerance 3 - 6 mm ± 1,0 mm
 9 - 19 mm ± 1,5 mm
 Reaction to fire Hazard level 2, R1 according to EN 45545-2
 3 mm sheets: HL3, R1

ARMAFLEX RAIL SD CONTINUOUS SHEETS SELF-ADHESIVE (ROLLS)

Code	Thickness [mm]	Roll length [m]	m ² /carton
RA-03-99/EA	3.0	30	30
RA-06-99/EA	6.0	15	15
RA-09-99/EA	9.0	10	10
RA-13-99/EA	13.0	8	8
RA-19-99/EA	19.0	5	5

Length tolerance for sheets ± 1,5 %
 Thickness tolerance for sheets 3 - 6 mm ± 1,0 mm
 9 - 19 mm ± 1,5 mm
 Reaction to fire Hazard level 2, R1 according to EN 45545-2
 3mm sheets: HL3, R1

ARMAFLEX RAIL SD SELF-ADHESIVE TAPES

Colour Blue

Code	Width [mm]	Length [m]	Thickness [mm]	Rolls/carton
RA-TAPE	50.0	15	3	12

Thickness tolerance -0,1/± 1,5 mm
 Length tolerance -1,5/± 5 %
 Reaction to fire Hazard level 3, R1 according to EN 45545-2

ARMAFLEX RAIL SD ADHESIVE

Code	Description	Pieces/carton
AHU-700/1,0 •	Armaflex Ultima Adhesive 700, blue one component adhesive, 1 litre cans	12
AHU-RS850/0,7 •	Armaflex Ultima Adhesive RS850, reduced solvent, non-drip blue gel form adhesive, 0.75 litre cans	6

• Not a stock item. Delivery on request

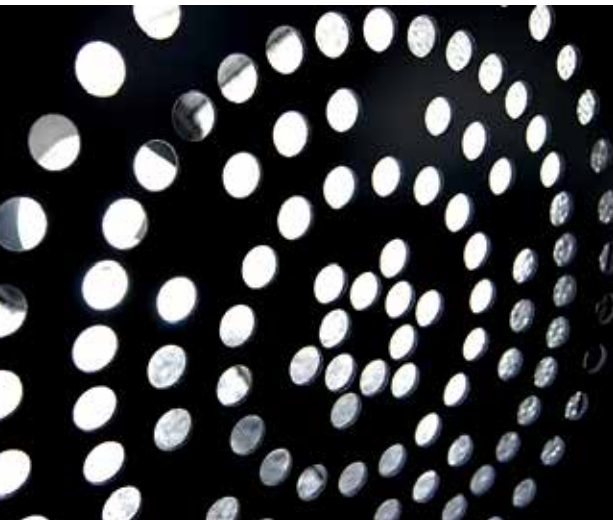
OUR CAPABILITIES, SERVICE & MATERIALS

CB Frost draws from a wide range of materials and converting techniques allowing us to offer an exact custom made solution for your application. Careful selection of the ideal material is helped with our ability to offer samples for test.

We can produce production batch quantities from small/medium to volume scheduled work.



"Our range of sheet and roll stock materials include; Neoprene, EPDM, Natural (including synthetic blends of sponges), Polyethylene, Polyurethanes and Silicones"



Capabilities and Product Offerings

- Tape/Strip – Plain and Adhesive backed
- Gaskets – Plain and Adhesive backed
- Rubber mouldings
- Sponge and solid rubber profiles
- Fabrication
- Specialist insulation products
- Approved stockist of the Bostik range of adhesives and sealants

Why use CB Frost

- Fast and reliable turnaround
- Quality of product
- Competitive pricing
- Excellent customer and technical support
- A wide range of quality product

Key Personnel

Phil Beadle
Commercial Director
phil.beadle@cbfrost-rubber.com

Paul Kennedy
Technical Director
paul.kennedy@cbfrost-rubber.com

Mark Jones
Sales Director
mark.jones@cbfrost-rubber.com

Daniel Brock
Sales Engineer
daniel.brock@cbfrost-rubber.com

Edward Booth
Sales Estimator
edward.booth@cbfrost-rubber.com

Pauline Fearon
Accounts Manager
pauline.fearon@cbfrost-rubber.com

Richard Hunt
Materials Controller
richard.hunt@cbfrost-rubber.com



NEED SAMPLES AND INFORMATION?
Samples, technical information and data sheets about our products are available upon request.

