

# Rail Interior Solutions

Rogers' BISCO® product family offers a wide range of silicone based cellular foams and solids for use in various rail interior applications including seals, gaskets, floor isolation pads, sound barrier, anti-vibration/rattle and seating cushions.

The materials are offered in continuous rolled sheet form, enabling ease of fabrication whether slitting or die-cutting.

## EN45545 Standard

- EN 45545-1 : Fire Protection of railway Vehicles : General Guidelines
- EN 45545-2 : Fire Protection of railway Vehicles : Requirements for Fire Behavior of materials and components
- The application material requirement is dependent on the train car classification: Hazard Level Classification > Product Classification > Material Requirement Set

## BISCO Silicone Advantages

### Long-Term Durability:

- Excellent dimensional stability
- Low stress relaxation
- Low compression set
- High/low temperature resistance

### Design Reliability:

BISCO Silicones excellent durability and resistance to environment induced degradation (UV/Ozone/Chemical resistance) ensure components and systems perform as expected for the life of the car.

### Passenger Safety:

BISCO Silicones are manufactured to comply with EN 45545 requirements without the use of restricted toxic substances. The fire-resistant properties are inherent to the homogenous cell structure, eliminating the need for fire-block layers.

### Reducing Maintenance Costs:

By utilizing the BISCO MF1® silicone seat foam, transit authorities can have significant savings in maintenance costs and revenue lost to downtime as MF1 foams enable a longer lasting cushion life compared to commonly used urethane cushions.

## Applications:

### Interior/Exterior Gasket and Seals [R22 / R23]

- HVAC: Access panel seals, enclosure seals, roof mount seals, fan gaskets, anti-rattle seals and gap fillers.
- Lighting & Electronics: Light panel seals, LCD & display gasket, dust & moisture seal, electrical panel gasket, camera housing / lens seal
- BF-2000
- BF-1000
- HT-800

### Sound Barrier [R1]

- Flexible acoustic barrier for ceiling and sidewall panels
- HT-200

### Vibration Isolation Pad/Strips - Floor [R10]

- Vibration isolation pads/strips for floating floor systems
- HT-870
- HT-800
- L3-XX40
- HT-840

### Seat Cushion [R18 / R19 / R21]

- Open-cell cushion
- MF1-35
- MF1-55
- MF1-75
- Offering longer cushion life and lasting passenger comfort

EN 45545 Requirement Set	Seals / Gaskets / Insulation / Gap-Filling						Acoustic Barrier	Seat Cushion Foam	Test Standard
	Vibration Isolation Pads (Floors)								
	BF-2000	BF-1000	HT-870	HT-800	L3-XX40	HT-840			
ULTRA SOFT	EXTRA SOFT	SOFT	MEDIUM	MEDIUM FIRM	FIRM	SOLID ON FIBERGLASS	MEDIUM		
R1- Interiors Primary	---	---	---	0.79mm [HL1]	4mm [HL2]	---	0.7mm - 4mm [HL-2]	---	
R2- Interiors Limited Use	---	25.4mm [HL3]	---	0.79mm [HL2] 12.7mm [HL3]	4mm - 25mm [HL3]	1.6mm - 6.35mm [HL3]	0.7mm - 4mm [HL-3]	---	
R3- External Features	---	25.4mm [HL3]	---	0.79mm [HL2] 12.7mm [HL3]	4mm - 25mm [HL3]	1.6mm - 6.35mm [HL3]	0.7mm - 4mm [HL-3]	---	
R7- External Features	---	---	---	0.79mm [HL1]	4mm [HL2]	---	0.7mm - 4mm [HL-3]	---	
R8- External Roof Features	---	---	---	12.7mm [HL3]	---	---	---	---	
R9- Bogies Rubber Elements	---	---	2mm - 19mm [HL3]	2mm - 12.7mm [HL3]	---	---	---	---	
R10- Flooring Components	---	---	2mm - 19mm [HL3]	2mm - 12.7mm [HL3]	4mm - 25mm [HL3]	1.6mm - 6.35mm [HL3]	---	---	
R18- Full Seat	---	---	---	---	---	---	---	HL3 (Foam Only)	
R19- Staff Seats	---	---	---	---	---	---	---	HL3	
R21- Seal Components	---	---	---	---	---	---	---	HL3	
R22- Interior Seals	3.18mm - 12.7mm[HL3]	1.6mm - 25.4mm [HL2]	---	0.79mm - 12.7mm [HL3]	4mm - 25mm [HL3]	1.6mm - 6.35mm [HL3]	---	---	
R23- Exterior Seals	3.18mm - 12.7mm[HL3]	1.6mm - 25.4mm [HL2]	---	0.79mm - 12.7mm [HL3]	4mm - 25mm [HL3]	1.6mm - 6.35mm [HL3]	---	---	
Physical Properties (Typical Values)									
Density, kg/m <sup>3</sup> (lb/ft <sup>3</sup> )	160 (10)	192 (12)	240 (15)	352 (22)	352 (22)	449 (27)	See Data Sheet	112 (7)	---
Compression Force Deflection, kPa (psi)	10.3 (1.5)	20.7 (3)	27.6 (4)	62.0 (9)	89.6 (13)	151.7 (22)		6.2 (0.9)	ASTM D1056 (25% compression)
Tensile Strength, kPa (psi)	172 (25)	241 (35)	207 (30)	310 (45)	172 (25)	414 (60)		86 (12.5)	ASTM D412
Elongation, %	85	90	90	80	40	60		45	ASTM D412
Thermal Conductivity, Wm/k	---	---	---	---	---	---	---	0.05	ASTM C518
Compression Set, %	5								ASTM D1056 (100°C @ 50% compression)
Water Absorption	5								Rogers (24 hrs @ 23°C)
Temperature Range, °C	-55 to 200								Rogers Internal / ASTM D1056

