

RAIL INTERIOR SOLUTIONS



EN 45545 MATERIAL SELECTION GUIDE



BISCO® Silicones

Helping **power, protect, connect** our world™

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 ³ (lb/ft ³)	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





BISCO® Silicones

World Class Performance

Rogers Corporation (NYSE:ROG) is a global leader in engineered materials to power, protect, and connect our world. With more than 180 years of materials science experience, Rogers delivers high-performance solutions that enable clean energy, internet connectivity, and safety and protection applications, as well as other technologies where reliability is critical. Rogers delivers Power Electronics Solutions for energy-efficient motor drives, vehicle electrification and alternative energy; Elastomeric Material Solutions for sealing, vibration management and impact protection in mobile devices, transportation interiors, industrial equipment and performance apparel; and Advanced Connectivity Solutions for wireless infrastructure, automotive safety and radar systems. Headquartered in Arizona (USA), Rogers operates manufacturing facilities in the United States, China, Germany, Belgium, Hungary, and South Korea, with joint ventures and sales offices worldwide.

For more information, visit www.rogerscorp.com

Carol Stream, IL, USA

171 West St. Charles Road

Tel: (800) 237.2068 Cust. Orders Toll Free

Tel: (800) 935.2940 Samples, Literature, Tech Support Toll Free

Tel: +1.630.784.6200

Fax: +1.630.784.6201

www.rogerscorp.com

The Quality Management System at the Carol Stream facility is registered to ISO 9001:2008 and AS9100, Rev. B by the Underwriters Laboratories (File # A-5857).

The information contained in this Material Selection Guide is intended to assist you in designing with Rogers' BISCO silicone foam materials. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose or that the results shown in this Material Selection Guide will be achieved by a user for a particular purpose. The user should determine the suitability of Rogers' BISCO silicone foam materials for each application. The Rogers logo, Helping power, protect, connect our world, BISCO and MF1 are trademarks of Rogers Corporation or one of its subsidiaries. © 2015, 2017 Rogers Corporation. Printed in USA. 1017-0.25 AG. Publication #180-304

Helping **power, protect, connect** our world™

