

# BISCO® MF1® Silicone Rail Seat Cushion Specification

BISCO® MF1® seat cushion foam provides reliable comfort, longevity, and safety. The firmness ranges of MF1 foams allow engineers to optimize seat designs, providing exceptional passenger comfort while reducing weight and size. It is a durable seat cushion material that utilizes proprietary silicone technology to deliver a product which maintains firmness and thickness longer than traditional polyurethane foams.

PROPERTY	TEST STANDARD	MF1 GRADE	SPECIFICATIONS
<b>FOAM</b>			
Firmness (IFD, ILD) @ 50mm (2 in), lbf (N)	ASTM D3574-B1	MF1-35	35 (155)
		MF1-55	55 (245) ± 10 (45)
		MF1-75	75 (334)
Density, pcf	ASTM D1056	MF1-35	3.0 Min / 7.0 Max
		MF1-55	4.0 Min / 8.0 Max
		MF1-75	5.0 Min / 9.0 Max
Compression Set, %	ASTM D1056 22 hrs @ 50% / 100°C (212°F)	35/55/75	5% Max
Tensile Strength, psi	ASTM D412	35/55/75	10 Min
Elongation, %	ASTM D412	35/55/75	30% Min
Antimicrobial	ASTM G21	35/55/75	Pass (No growth)
Tear Strength, lbf/in	ASTM D3574 Test F	35/55/75	2.0 Min
<b>DURABILITY</b>			
Comfort Factor, 65% / 25% IFD	ASTM D3574 Method B	35/55/75	2.5 Min
Jounce & Squirm, Height Loss %	Squirm: 180 lb / 40°C (104°F) (± 20°) 5 min cycles/min / 250K cycles	35/55/75	5% Max
Jounce & Squirm, Firmness Loss % (25% IFD)	Jounce: 20% deflection 100 cycles/min / 250K cycles	35/55/75	20% Max
Constant Force Pounding, Height Loss %	ASTM D3574 Test I3 Proc B	35/55/75	15% Max
Constant Force Pounding, IFD Loss %	750N 80K Cycles 250 mm Plate w/25 mm Radius	35/55/75	15% Max
Resistance to Deterioration, Steam Autoclave CFD Loss % Change	ASTM D3574 Test J1	35/55/75	20% Max
Resistance to Deterioration, Dry Heat Age CFD Loss % Change	ASTM D3574 Test K	35/55/75	20% Max

**MF1 FOAM LONG-LIFE WARRANTY:** When designed appropriately in a rail seating application, MF1 foam is warranted for up to 10 years for firmness and thickness retention. This ensures long-term comfort for passengers.



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**BISCO® MF1® SILICONE RAIL SEAT CUSHION SPECIFICATION, cont'd**

**GLOBAL FIRE SAFETY CERTIFICATIONS**

REGION	FIRE STANDARD	TEST METHOD	MF1 35/55/75
<b>FOAM</b>			
Britain (UK)	BS 6853	BS 6853 (Table 9)	cat 1A (composite/fireblock)*
Europe	EN 45545 - R21	ISO 5660 ISO 5659 (Ds, CIT)	HL3
France	STM -C-708	NFF 16-101 (M -F Rating) ISO 3582 ISO 2440 (ISO 3582)	M2 F1 Pass (No Ignition) Pass (No Ignition)
Germany	DIN 5510	DIN 5510-2 Annex C / ISO 5659-2	S4, SR2, ST2 Fed < 1
North America	NFPA 130 / 49 CFR 238	ASTM D3675 ASTM E 162 ASTM E662 ASTM C1166 SMP 800C ASTM E1354	Pass  Reference Only
Poland	PN-K-02508	PN-K-02511 PN-K-02508 PN-K-02501 PN-93/K-02505	Class P2 Class A Class D1 Class T1
International Union of Railways	UIC 564-2	UIC 564-2 App 7 UIC 564-2 App 8 UIC 564-2 App 15	Class B Class A Class A
Various Others		FAR 25.853a (12 sec) FAR 25.853a (60 sec) BSS 7239 FMVSS302	Pass

\*When tested within an appropriate construction including a fireblock

Notes:

- All metric conversions are approximate.
- Additional technical information is available.