

BISCO® MF1® SILICONE

HIGH PERFORMANCE SILICONE FOAM FOR RAIL SEAT CUSHIONING

BISCO® MF1® seat cushion foam provides reliable comfort, longevity, and safety. Available in three firmness ranges, MF1 foam allows engineers to optimize seat designs, providing exceptional passenger comfort all the while reducing weight and size. MF1 foam is a durable seat cushion material that utilizes proprietary silicone technology to deliver a product which maintains firmness and thickness longer than traditional urethane foams. Additionally, all grades of MF1 foam are formulated to meet various global fire safety standards including BS 6853, EN 45545, DIN 5510, NFF 16-101, and NFPA 130.

PROPERTY	TEST METHOD	MF1-35 [Soft]	MF1-55 [Medium]	MF1-75 [Firm]
FOAM PROPERTIES				
FIRMNESS (IFD, ILD) @ 2 INCH (50 MM), lbf (N)	ASTM D3574-B1, ISO 2439 (25%)	35 (155)	55 (245)	75 (334)
lbf (N)	ISO 2439 (40%)	50 (222)	75 (334)	105 (467)
COMFORT FACTOR	65% / 25% IFD	2.5:1		
COMPRESSION FORCE DEFLECTION, psi (kPa)	ASTM D1056	0.8 (5.5)	0.9 (6.2)	1 (6.9)
DENSITY, pcf (Kg/m3)	ISO 845	6.5 (104)	7.0 (112)	8.0 (128)
RESILIENCY, %	Vertical Rebound	40	45	50
TENSILE STRENGTH, psi (kPa)	ASTM D412	12.5 (86)		13.5 (93)
ELONGATION, %	ASTM D412	45		35
ANTI-MICROBIAL	ASTM G21	Pass (No growth)		
WATER ABSORPTION, %	ASTM D570	< 5		
THERMAL CONDUCTIVITY, W / mK	ASTM C518	0.045		
MAXIMUM CONSTANT USE TEMPERATURE, °C	Rogers Internal	200°		
LOW TEMPERATURE FLEX, °C	ASTM D1056	-40°		
DURABILITY				
JOUNCE / SQUIRM, Height Loss %	Jounce/Squirm (1,000,000 cycles)	< 5		
Firmness Loss (IFD) %		< 20		
CONSTANT LOAD POUNDING, Height Loss %	ISO 3385 (ISO 2439)	< 3		
Firmness Loss (IFD) %		< 10		
FLEX FATIGUE, Height Loss %	ASTM D1055 (250,000 cycles)	< 5		
COMPRESSION SET (22 HRS @ 50% COMPRESSION), %	ASTM D1056 (23 C)	< 1		
	ASTM D1056 (70 C)	< 3		
	ASTM D1056 (100 C)	< 5		
HUMIDITY AGEING, Firmness Loss (IFD) %	ISO 2440 (ASTM D3574 B1)	2.5		

- All metric conversions are approximate.
- Additional technical information may be available.
- Typical values are a representation of an average value for the population of the property. For specification values contact Rogers Corporation.

MF1 FOAM LONG-LIFE WARRANTY

When designed appropriately in a rail seating application, MF1 foam is warranted for firmness and thickness retention for up to 10 years to ensure long-term comfort.

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GLOBAL FIRE SAFETY CERTIFICATIONS					
REGION	FIRE STANDARD	TEST METHOD	MF1-35 [Soft]	MF1-55 [Medium]	MF1-75 [Firm]
BRITAIN (UK)	BS 6853	BS 6853 (Table 9)	cat 1A (composite/fireblock)*		
EUROPE	EN 45545 - R21	ISO 5660	HL3		
		ISO 5659 (Ds, CIT)			
FRANCE	STM-C-708	NFF 16-101 (M - F Rating)	M2 F1		
		ISO 3582	Pass (No Ignition)		
		ISO 2440 (ISO 3582)			
GERMANY	DIN 5510	DIN 5510-2	S4, SR2, ST2		
		Annex C / ISO 5659-2	Fed < 1		
NORTH AMERICA	NFPA 130 / 49 CFR 238	ASTM D3675	Pass		
		ASTM E162			
		ASTM E662			
		ASTM C1166			
		SMP 800C			
		ASTM E1354	Reference Only		
POLAND	PN-K-02508	PN-K-02511	Class P2		
		PN-K-02508	Class A		
		PN-K-02501	Class D1		
		PN-93/K-02505	Class T1		
INTERNATIONAL UNION OF RAILWAYS	UIC 564-2	UIC 564-2 App 7	Class B		
		UIC 564-2 App 8	Class A		
		UIC 564-2 App 15	Class A		
VARIOUS OTHER		FAR 25.853a (12 sec)	Pass		
		FAR 25.853a (60 sec)			
		BSS 7239			
		FMVSS302			

*When tested within an appropriate construction including a fireblock

BISCO® Silicones

BISCO® MF1® Industrial Grade Foam
Bun Cellular Silicone Foam – Data Sheet

PROPERTY	TEST METHOD	MF1-35 (Soft)	MF1-55 (Medium)	MF1-75 (Firm)
Standard Color		White	White or Gray	White
Density, kg/m ³ (pcf)	ASTM D 1056	6.5 (104)	7.0 (112)	8.0 (128)
Compression Force Deflection, kPa (psi)	ASTM D 1056	----	2.8 – 10.3 (0.4 – 1.5)	----
Compression Set, % (22 hours, 50% compressed, 100°C)	ASTM D 1056	1.5%	1.5%	1.5%
Tensile Strength, kPa (psi)	ASTM D 412	86 (12.5)	86 (12.5)	93 (13.5)
Elongation, %	ASTM D 412	45	45	35
Water Absorption, %	ASTM D570	< 5.0	< 5.0	< 5.0
Flame resistance	FVMSS302 – self extinguishing	N/A	Pass	N/A
THERMAL PROPERTIES				
Thermal Conductivity (W/m*K)	ASTM C518		0.044	
Low Temperature Flex -67°F (-55°C)	ASTM D 1056	Pass	Pass	Pass
Recommended Constant Use, Max °C (°F)		200 (392)	200 (392)	200 (392)
Recommended Intermittent Use, Max °C		250 (482)	250 (482)	250 (482)
CERTIFICATIONS				
UL Certification	UL94 V-0 and HF-1	N/A	Gray Only ¹	N/A

- ¹ UL94 V-0 and HF-1 - Gray color only, minimum thickness 0.094"
- All metric conversions are approximate
- Additional technical information is available
- Typical values should not be used for specification limits
- ---- Indicates no testing performed

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