Application Note

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BISCO® MF1® Silicone Locomotor Cab Gap Filling

Train engineers work in demanding conditions near powerful engines that generate heat, noise, and vibration. Over time, constant motion causes cab panels to deform, creating gaps that allow heat and noise to seep in.

One rail customer temporarily filled these gaps to block heat and vibration while searching for a solution that met stringent rail industry safety standards. Prioritizing employee safety and comfort, they needed a quick, reliable fix.

Rogers experts recommended BISCO® MF1® Silicone, which filled the gaps, provided thermal and vibration control, and met strict rail safety requirements—delivering a durable solution that enhanced cabin safety and comfort.

While BISCO MF1 Silicone has proven to be an excellent solution for locomotive cabins, its versatility goes far beyond this application.

With a unique combination of properties, MF1 Silicone excels in thermal management, acoustic absorption, gap filling to prevent buzz, squeak, and rattle, load-bearing applications, and more.

Advantages

- **Thermal Insulation:** Blocks heat effectively for a safer, more comfortable environment.
- **Sound and Vibration Control:** Absorbs sound and dampens vibration for quieter operation. Paired with BISCO HT-200, it enhances sound-blocking performance.
- **Load-Bearing Capability:** Soft yet durable, ssuitable for load-bearing uses.
- **Safety Compliance:** Meets UL V-0, NFPA 130, and EN 45545 HL-3 standards for flame, smoke, and toxicity.
- **Durability:** Ensures long-term performance with low compression set and stress relaxation.
- **Low Outgassing:** Minimal emissions, suitable for sensitive environments.
- **Soft Compression Force Deflection:** Offers the softest CFD for greater flexibility.
- **Customizable Form:** Available in buns or sheets with custom cutting options.
- **Lightweight Design:** Minimal weight contribution for easier installation and improved fuel efficiency.

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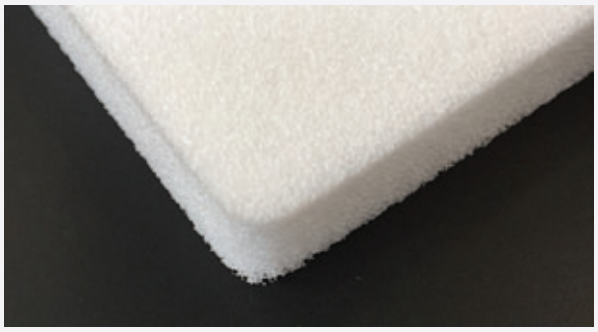

Features & Benefits:

- Superior flame, smoke, and toxicity (FST) resistance performance
- Outstanding durability due to excellent compression set resistance and low stress relaxation
- Resistance to UV, ozone, and extreme temperatures for consistent performance in harsh environments

PROPERTY*	TEST METHOD	MF1-35 (SOFT)	MF1-55 (MEDIUM)
PHYSICAL			
Color	Visual	White	White
Density, kg/m^3 (lb./ft^3)	ASTM D1056	80 (5.0)	96 (6.0)
Compression Force Deflection, kPa (psi)	ASTM D1056	1.4 - 8.3 (0.2 - 1.2)	2.8 - 10.3 (0.4 - 1.5)
Compression Set, %	ASTM D1056 100°C (212°F) / 22 hrs / 50%	1.5	1.5
Tensile Strength, kPa (psi)	ASTM D412	86 (12.5)	86 (12.5)
Elongation, %	ASTM D412	45	45
Tear Strength, PPI	ASTM D624	>2.0	>2.0
Burn Length	FVMSS302 - Self Extinguishing	Pass	Pass
THERMAL			
Thermal Conductivity, W/m*K Uncompressed	ASTM C518	0.036	0.037
Low Temperature Flex -55°C (-67°F)	ASTM D1056	Pass	Pass
Surface Flammability of Material (Radiant Panel Index, I_S)	ASTM E162	14.23	11.09
Surface Flammability of Flexible Cellular Material (Radiant Panel Index, I_S)	ASTM D3675	12.49	23.01
Smoke Optical Density (Specific Optical Density, Dm)	ASTM E662	237	317

*Typical Value is based on historical data. Please note the frequency of testing varies. Typical values should not be used for specification limits. Additional industry specifications are available. All other properties are based on industry standard guidelines.

Get Started

Learn more about BISCO MF1 bun silicone and request a sample:
https://www.rogerscorp.com/elastomeric-material-solutions/bisco-silicones/bisco-mf1-bun-silicones
or contact our team of experts at **solutions@rogerscorp.com**

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