

## MilQuell-MPF

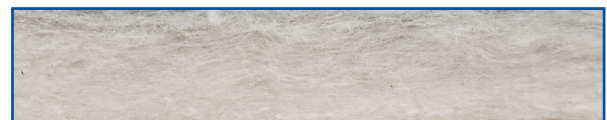
MilQuell is a new composite where the base is comprised of a white horizontally lapped proprietary fiber blend. The name MilQuell derives from the word quell. Quell means to put an end to, stamp out, or to stop or quiet something. MilQuell does exactly that. It is designed to be a flame blocking/resistant product first, but thanks to the nature of the fiber, the composite also provides good acoustic properties. Under direct continuous flame, MilQuell expels very low BTUs. MilQuell is an extremely versatile material allowing it to be used in a variety of applications. The base fiber content can be adjusted to various densities and thicknesses as needed. It can be produced with a variety of pressure sensitive adhesives (PSAs) for varying mating substrate installation. If needed, MilQuell can be produced with sealed edges using our MilPress process. MilQuell-MPF is provided with a microperforated foil facing. MilQuell-MPF is recognized under UL file E520256 and meets the requirements of UL94 V-1, 5VA, UL746A, UL746B and CSA C22.2 No. 0.017-00.

### FEATURES:

- Inherently durable, flame retardant
- Mildew-growth inhibited
- Durable, lightweight, shoddy/fiberglass alternative
- Made with environmentally friendly natural fiber

### TYPICAL APPLICATIONS:

- Vehicle Engine Bay
- Acoustic & Thermal Applications
- Enclosures



**Typical Physical Properties:  
Fiber**

Specification	Test Method	Typical Results
Thickness		6.0 mm to 25 mm
Mass/unit Area	ASTM D3776	340 gsm to 1200 gsm ± 10%
Tensile Strength	ASTM D5034	> 10 N/cm <sup>2</sup>
Dust	GM9635P	< 1%
Flammability	FMVSS 302 FAA 25.853 A, B Binder Melt Temp UL94 V0 E84	Pass Pass 356°F Pass Pass
K Factor		.223 BTU-in/hr-ft <sup>2</sup> -°F
R Value		3.99 hr-ft <sup>2</sup> -°F/BTU

**Typical Physical Properties:  
Microperforated Foil Facing**

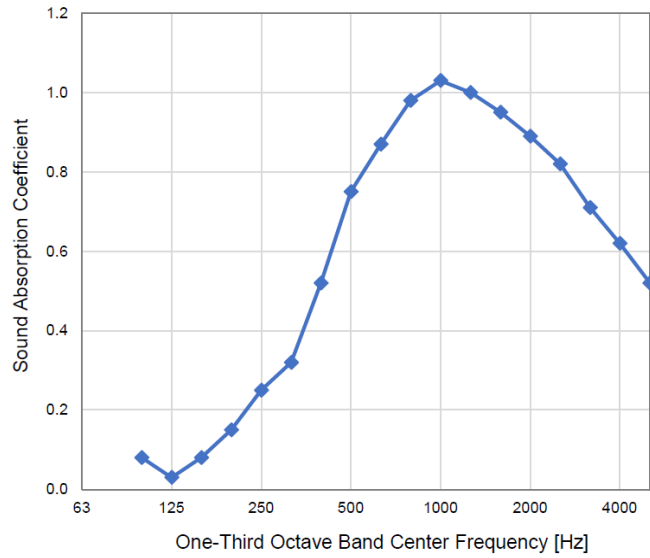
Specification	Test Method	Typical Results
Thickness		3.0 mil

MilQuell-MPF is recognized under UL file E520256 and meets the requirements of UL94 V-1, 5VA, UL746A, UL746B and CSA C22.2 No. 0.17-00.



**A wide variety of Pressure Sensitive Adhesives (PSAs) are available upon request.**

**Random Incidence Sound Absorption Report - MilQuell-MPF  
per ASTM C423-17**



**Sound Absorption Average (SAA) = 0.71  
Noise Reduction Coefficient (NRC) = 0.75**

**Test Method: ASTM C423-17**

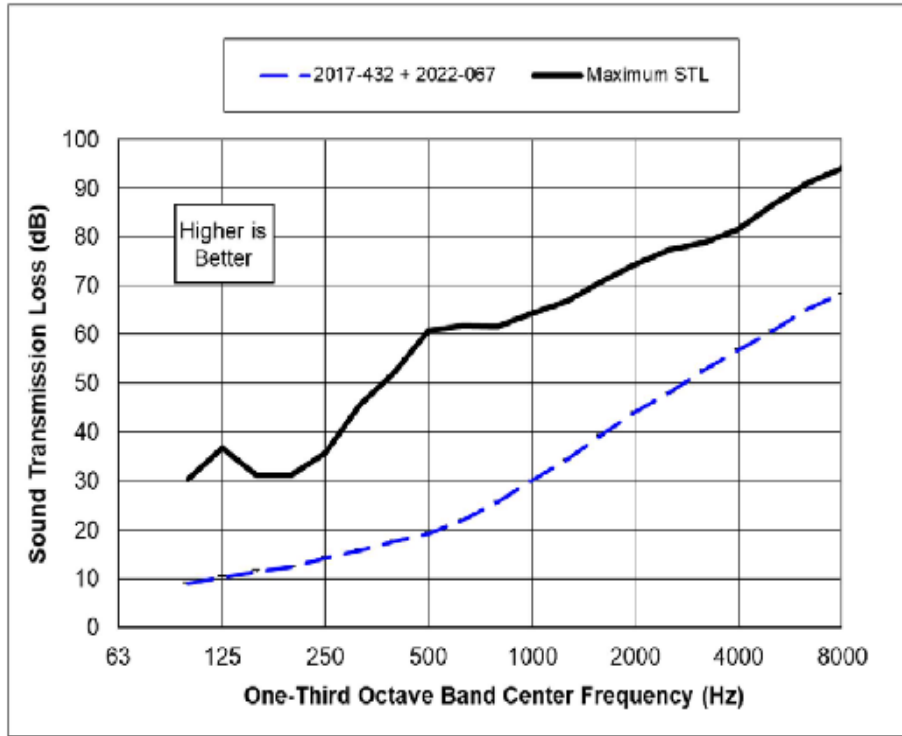
Direct measurement of the test specimen by the testing staff yielded an overall weight of 1,102 g/m<sup>2</sup> and an overall thickness of 18.97 mm. The test specimen was composed of four (4) material panels, laid directly on the test chamber floor in a 2.36 m by 2.74 m rectangle to cover a continuous surface area of 6.48 m<sup>2</sup>. The edges of the specimen were sealed by lengths of angle aluminum butted against its perimeter faces.

1/3 Octave Center Freq. (Hz)	Absorption Coefficient
100	0.08
125	0.03
160	0.08
200	0.15
250	0.25
315	0.32
400	0.52
500	0.75
630	0.87
800	0.98
1000	1.03
1250	1.00
1600	0.95
2000	0.89
2500	0.82
3150	0.71
4000	0.62
5000	0.52

THE VALUES PRESENTED ARE TYPICAL AND ARE NOT INTENDED FOR SPECIFICATION PURPOSES. This information is provided without warrant, representation, inducement or license of any kind. INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE OR PURPOSE, except that is accurate to the best of MILCUT INC. knowledge or obtained from sources believed by MILCUT INC. to be accurate, and MILCUT INC. does not assume any legal responsibility for the use or reliance upon same. Customers are encouraged to conduct their own tests for suitability and conformance.

**Laboratory Sound Transmission Loss - MilQuell-MPF  
per SAE Recommended Practice J1400-17**

**Laboratory Sound Transmission Loss of Milcut MilQuell-MPF**



Frequency	Measured STL	95% Confidence Limit	Maximum Measurable STL
100	9	0.2	30
125	10	0.3	37
160	11	0.3	31
200	12	0.2	31
250	14	0.2	36
315	16	0.2	46
400	18	0.2	52
500	19	0.1	61
630	22	0.1	62
800	26	0.1	62
1000	30	0.1	64
1250	34	0.1	67
1600	39	0.1	71
2000	44	0.1	74
2500	48	0.0	77
3150	53	0.1	79
4000	57	0.1	82
5000	61	0.0	87
6300	65	0.0	91
8000	68	0.0	94

**Test Procedure per SAE J1400-17**

The test material was nominally 1 in. thick, constructed from a nominally 1” thick rayon-based horizontally-lapped fiber and a nominally 3 mil microperforated aluminum foil facing. Direct examination of the test specimen yielded dimensions of 46.5” x 48” x 0.75” thick. The test sample was laid onto a steel substrate (Sample 2022-067, 2017-432). The test sample weighed 3.15 lbs and the total weight of the sample with the 0.025” thick steel substrate was 15.7 lbs. The fiber side was laid directly onto the steel substrate, which faced the sound source. Measurements of the bare steel sample (2017-432) were used in calculation of the room correlation factor; the thickness of the steel was chosen to shift expected coincidence frequencies beyond the measured frequency range.

**Thermal Conductivity - MilQuell-MPF**  
**per ASTM C518-17**

**Test Results:**

Mean Test Temperature (°C)	Temperature Gradient (K/m)	Duration (Min)	Heat Flux (W/m <sup>2</sup> ) Up	Thermal Conductance (W/m <sup>2</sup> K)	Thermal Conductivity (W/m K)	Thermal Conductivity (BTU-in/hr-ft <sup>2</sup> -°F)
12.5	1319	94	42.7	1.7	0.0324	0.2245
22.5	1320	51	44.4	1.8	0.0337	0.2333
32.5	1320	51	46.2	1.8	0.0350	0.2430
42.5	1319	51	48.1	1.9	0.0364	0.2526
52.5	1319	51	49.9	2.0	0.0378	0.2624
62.5	1319	51	51.8	2.1	0.0393	0.2725

THE VALUES PRESENTED ARE TYPICAL AND ARE NOT INTENDED FOR SPECIFICATION PURPOSES. This information is provided without warrant, representation, inducement or license of any kind. INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR USE OR PURPOSE, except that is accurate to the best of MILCUT INC. knowledge or obtained from sources believed by MILCUT INC. to be accurate, and MILCUT INC. does not assume any legal responsibility for the use or reliance upon same. Customers are encouraged to conduct their own tests for suitability and conformance.