

> FM[®] 6604-1 BMI FOAMING ADHESIVE

TECHNICAL DATA SHEET



DESCRIPTION

FM[®] 6604-1 is a modified bismaleimide (BMI) resin core splice foaming adhesive. It has a cure temperature of 350°F (177°C) with a post-cure at 440°C (227°C). The service temperature is -67°F to 450°F (-57°C to 232°C) with post-cure.

FEATURES & BENEFITS

- Maximum continuous service temperature up to 450°F (232°C) with post-cure
- Expansion ratio 2:1 nominal
- Ideal for non-metallic core splice and edge closeout
- Long-term aging
- Fuel tight
- High strength-to-density ratio
- Structural equivalency to unspliced core

SUGGESTED APPLICATIONS

- Core shear-ties
- Edge closeouts
- Insert bonding

CHARACTERISTICS

Table 1 | Physical Characteristics

Expanded Density, Nom., lb/ft ³ (kg/m ³)	30 (480)
Thickness, inch (mm)	0.050 (1.27)
Volatiles, % weight, max	<2
Color	Brown
Sheet Length, ft (m) ¹	2 (0.6)
Sheet Width, ft (m) ²	1 (0.3)
Storage ³	6 months at 0°F (-18°C)
Shop Life	2 weeks at room temperature
Handling	Very brittle at temperatures <40°F(4°C) Handle with extreme care

¹ Other sheet dimensions available by request

² Packaged in 1 x 2 foot (0.3 x 0.6 meter) sheets with the adhesive interleaved between release paper and polyfilm, sealed in poly bags

³ To prevent moisture pickup, a sealed container should not be opened until the adhesive reaches ambient temperature

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PROPERTIES

Table 2 | Mechanical Properties

Property	Condition	Typical Value
Beam Shear, psi ¹	-67°F (-55°C) Dry	630
	75°F (24°C) Dry	550
	400°F (204°C) Dry	320
	450°F (232°C) Dry	260
Tube Shear, psi ²	-67°F (-55°C)	950
	75°F (24°C) Dry	900
	400°F (204°C)	640
	450°F (232°C)	530
	75°F (24°C) ³	1000
	75°F (24°C) ⁴	1300
75°F (24°C) ⁵	1400	
Expansion Ratio	75°F (24°C) Dry	2.2:1

¹ 0.63 2024-T3 Al face sheets, 7.9, 1/4, OO4N-5052 H39 Al core, PAA treatment, 4 point loading

² 0.50 Al 5052H per WW-T-700/4, 1 inch O.D., 1/2 inch O.D., 0.049 – 0.063 wall thickness, PAA treatment

³ 1,1,1 trichloroethane soak per MIL-T-81533 vapor

⁴ 30-day salt spray per ASTM B-117 at 95°F (35°C)

⁵ 72-hour water boil in demineralized water

APPLICATION PROCEDURES

Recommended Cure Cycles

Initial Cure

1. Apply 45 psi (311 kPa), vented
2. Heat from room temperature to 350°F (177°C) at a rate of 1 – 3°F (0.5 – 1.7°C)/minute
3. Hold at 350°F (177°C) for 240 minutes
4. Cool below 140°F (60°C) at a rate of 1 – 3°F (0.5 – 1.7°C)/minute

Post Cure

1. Heat from room temperature to 440°F (227°C) at a rate of 1 – 3°F (0.5 – 1.7°C)/minute
2. Hold at 440°F (227°C) for 360 minutes
3. Cool below 140°F (60°C) at a rate of 1 – 3°F (0.5 – 1.7°C)/minute

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Lay-up Procedure

1. Remove FM 6604-1 from refrigerator storage and allow the adhesive to warm to room temperature before unpackaging the roll
2. Cut a strip of material to the approximate length and width required.
3. Remove one of the interliners and place the exposed adhesive along one edge of the core to be spliced
4. Remove the other interliner and complete the core assembly
5. Complete the detail assembly using the appropriate adhesive and facings.

PRODUCT HANDLING AND SAFETY

Cytec Engineered Materials recommends wearing clean, impervious gloves when working with adhesives to reduce skin contact and to avoid contamination of the product.

Materials Safety Data Sheets (MSDS) and product labels are available upon request and can be obtained from any Cytec Engineered Materials Office.

DISPOSAL OF SCRAP MATERIAL

Disposal of scrap material should be in accordance with local, state, and federal regulations.

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