



FM® 490A

Core-Splice Adhesive

Features and Benefits

- Use temperatures ranging from -67°F to 350°F (-55°C to 175°C).
- Wide curing window; 225°F to 350°F (105°C to 175°C).
- Uniform cell structure; ambient to 10 inches of mercury vacuum.
- Achieves uniform expansion independent of heat-up rate 1°F to 10°F/min (0.6°C to 5.5°C).
- Designed for Honeycomb splicing, localized reinforcement, bonding of edge members and inserts.
- Non-Asbestos, no metallic fillers.
- Radar transparent.

Description

FM® 490A Core-Splice Adhesive is a modified epoxy material supplied in sheet form that may be cured in place by either free foaming or restrained foaming processes. It may be processed at any temperature ranging from 225°F to 350°F (105°C to 175°C). It is specifically designed to minimize variation in cell structure induced by typical process variables such as heat-up rates and vacuum conditions. Typical applications include bonding of inserts or edge members to core and localize reinforcement of honeycomb core where increased shear strength is required. Because FM® 490A Core-splice Adhesive contains no metallic fillers, it is appropriate for applications requiring radar transparency.

Information or assistance is provided for your consideration without any legal responsibility. Users are expected to perform adequate verification and testing to satisfy themselves that the product suits their purposes.

FM® 490A Core-Splice Adhesive

Product Description

The material is supplied in unsupported, one by two feet sheets and is protected by a release paper that is stripped easily.

Thickness: 0.025 ± 0.005 inch (0.64 ± .13 mm)
0.050 ± 0.005 inch (1.27 ± .13 mm)
0.100 ± 0.005 inch (2.54 ± .13 mm)

Color: Tan

Volatile: Less than 1%

Penetration: 0.075 in (1.9 mm) @ 72°F (22°C)

Expansion: 1.5 to 3.5 times its initial thickness

Density: 20 to 40 lbs/ft³ (320 to 641 Kg/m³)

Shop Life: Ten days at 90°F (32°C)

Shelf Life: 12 months from date of shipment at recommended storage temperature

Recommended Storage: Store at or below 0°F (-18°C)

Process Information

FM® 490A Core-Splice Adhesive may be cured using one of the following cure cycles:

1°F - 10°F/min (0.6°C - 5.5°C/ min) to 250°F to 350°F (121°C to 177°C)
60 minutes at 250°F to 350°F (121°C to 177°C)

FM® 490A Core-Splice Adhesive

Table I Average Typical Mechanical Properties

Test Condition	Average Results	
	250°F (120°C) Cure Temp.	350°F (175°C) Cure Temp.
1. Tube Shear, psi (MPa)		
tested at -67°F (-55°C)	1270 (8.76)	1330 (9.20)
tested at 75°F (24°C)	1500 (10.35)	1390 (9.60)
tested at 180°F (82°C)	1270 (8.77)	1260 (8.70)
tested at 250°F (120°C)	665 (4.58)	1027 (7.08)
tested at 350°F (175°C)	NA	170 (1.16)
2. Tested at 75°F (24°C) after 15 minutes trichloroethylene degreasing and 30 minute post bake at 250°F (120°C)	1360 (9.38)	1375 (9.48)
after three days water boil	1315 (9.07)	1270 (8.77)
after seven days immersion in BMS 3-11 (Skydrol at 150°F)	1530 (10.57)	1390 (9.59)
after 30 days salt spray at 95°F	1520 (10.98)	1495 (10.32)

Table II Average Physical Properties

Test Condition	Test Results	
	250°F (120°C) Cure Temp.	350°F (175°C) Cure Temp.
1. Expansion at		
1°F/min (0.6°C/min)	1.77	1.80
3°F/min (1.8°C/min)	1.99	2.13
5°F/min (2.8°C/min)	2.06	2.42
10°F/min (5.5°C/min)	2.09	2.96
2. Exotherm at		
10°F/min (5.5°C/min)	390°F (199°C)	496°F (258°C)
3. Slump at		
5°F/min (2.8°C/min)	0.062 in (1.56 mm)	0.073 in (1.85 mm)

FM® 490A Core-Splice Adhesive

Health and Safety Information

First Aid - In case of contact, immediately wash affected areas with soap and plenty of water.

Ventilation Required - Use mechanical exhaust ventilation when heat-curing the resin system.

Detailed Handling Instructions - Refer to Material Safety Data Sheets and product labels.

Important Notice

The information and statements herein are believed to be reliable but are not to be construed as a warranty or representation for which we assume legal responsibility. Users should undertake sufficient verification and testing to determine the suitability for their own particular purpose of any information or products referred to herein. NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE IS MADE. Nothing herein is to be taken as permission, inducement or recommendation to practice any patented invention without a license.



Cyttec Engineered Materials Inc.
1300 Revolution Street
Havre de Grace, MD 21078
410-939-1910 phone
410-939-8100 fax