

TBF 10-353

Rigid Foam Thermal Barrier

Product description

The AzoCore™ TBF 10-353 is a rigid, two-component, polyurethane foam, formulated to optimize thermal performance and structural strength in aluminum fenestration systems.

TBF 10-352 is a best-in-class thermal barrier with industry-leading material thermal conductivity ratings, and it is free from CFCs, HCFCs, and other ozone-depleting substances.

Table 1: Physical properties of uncured materials

	13-302A A-ISO	AzoCore TBF 10-353 B Resin	Measurement
Appearance	dark brown liquid	black liquid	
Specific gravity at 77°F (25°C)	1.237 ± 0.006	1.050 ± 0.003	
Viscosity at 77°F (25°C)	200 ± 50	450 ± 50	centipoise

Table 2: Processing parameters

	Value	Measurement
Mix ratio 13-302A per AzoCore TBF 10-353	104 ± 6 / 100	grams
Mix ratio 13-302A per AzoCore TBF 10-353	88.3 ± 5.1 / 100	milliliters
13-302A temperature	25 (77)	degrees Celsius (Fahrenheit)
AzoCore TBF 10-353 temperature	25 (77)	degrees Celsius (Fahrenheit)
Cream time	35 ± 3	seconds
Rise time	2' 30" – 3' 30"	minutes / seconds

All mixing and tests were conducted at 25°C (77°F) unless otherwise noted.

Cream time and rise time will vary slightly with variation in ambient and chemical temperatures.



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Table 3: Performance characteristics of cured material

	SI	IP	Test method
Thermal conductivity K-factor	0.029 W/m ² -K	0.201 Btu-in/(hr-°F-ft ²)	ASTM C518-10
Thermal resistivity - r	34.483 K-m/W	4.969 hr-ft ² °F/Btu-in	ASTM C518-10
Density	0.1602 ± 0.016 g/cm ³	10 ± 1.0 lb/ft ³	ASTM D1622
Tensile strength	2.6 ± 0.15 N/mm ²	360 ± 20 psi	ASTM D638
Elongation	5 ± 1%	5 ± 1%	ASTM D638
Notched Izod impact	5.9 ± 0.5 J/m	0.110 ± 0.01 ft*lbs/in	ASTM D256
Heat distortion at 0.46 Mpa (66 psi)	58 ± 2°C	136 ± 3.6°F	ASTM D648
Compressive strength	2.5 ± 0.9 N/mm ²	370 ± 10 psi	ASTM D1621
Shore B hardness		46 ± 2	ASTM D2240

Note: The test data herein stated are typical values, which may be used as a guideline in evaluating the material for its intended use. We recommend that polymer properties be tested on a regular basis.

WARRANTY The information contained in this document is to assist customers in determining whether our products are suitable for their applications. Our products are intended for sale to industrial and commercial customers. The customer must inspect and test our products before use, and satisfy themselves as to the contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent to be inferred. All patent rights are reserved. The exclusive remedy for all proven claims is replacement of our materials, and in no event shall we be liable for special, incidental, or consequential damages.



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Adhesion and dry shrinkage

The adhesive performance of thermal barrier chemicals largely depends on the condition of the substrate. For optimal bonding, Azon recommends utilizing a thermal barrier cavity with a mechanical lock.

Curing

As with all thermal barrier polymers, the reactivity and cure rate of AzoCore TBF 10-353 varies depending on the temperature of both the chemicals and the aluminum. To ensure proper curing, it is recommended that both the chemical components and the extrusion be maintained at $25 \pm 5^{\circ}\text{C}$ ($77 \pm 10^{\circ}\text{F}$). The metal temperature should not fall below 18.3°C (65°F). Processing outside these temperature ranges can result in curing inconsistencies, fabrication issues, or dimensional distortion.

AzoCore TBF 10-353 is intended solely for approved thermal barrier applications. Use in any other application requires prior written authorization from Azon.

Storage and Handling

Azon thermal barrier components are very stable materials when properly handled. To avoid problems, it is important to understand that these materials are sensitive to moisture. Containers of the components must be stored in a dry area where the temperature range does not fall below 10°C (50°F) and does not exceed 37°C (100°F) for prolonged periods.

The expected shelf life of Azon chemical products is 12 months. When properly stored in unopened, sealed containers, the shelf life may be considerably longer. It is important to observe good inventory control by using the first in, first used practice.

When removing the chemical supply from the machinery, always reseal the partially full container with dry nitrogen or dry air (dew point below -40°C [40°F]) to protect the contents from moisture contamination.

Disposal

Care should be taken to protect our environment. The user of this product has the responsibility to dispose of unused material or residue in compliance with local governmental guidelines regarding the disposal of nonhazardous and hazardous waste.

Health and safety

Safety data sheets and product labels must be reviewed prior to use or handling the material. Ordinary hygienic principles, such as washing the compound from the hands before eating or smoking, should be observed. Hands should be washed with a waterless cleaner followed by soap and water. Avoid breathing of vapors, prolonged contact with the skin, contact with open breaks in the skin and ingestion. Use with adequate ventilation.

Ordering

To place orders or for pricing information, please contact Azon customer support at 1.800.788.5942.

Technical service

For assistance with thermal barrier design, please contact the AZO/Tec® department. Our team provides expert analysis and guidance on cavity sizing, placement, and mechanical lock recommendations. AZO/Tec offers support to optimize both existing and new thermal barrier systems, ensuring superior thermal and structural performance in field applications.

Cavity design

Cavity design in aluminum extrusions should follow the guidelines outlined in AAMA TIR-A8-16. The AZO/Tec® design and simulation team supports customers in developing structurally sound and energy-efficient fenestration systems by offering thermal simulations and comprehensive design consulting services.

