April 2021

THERMAL BREAK MATERIAL™ (TBM-1)

Submittal

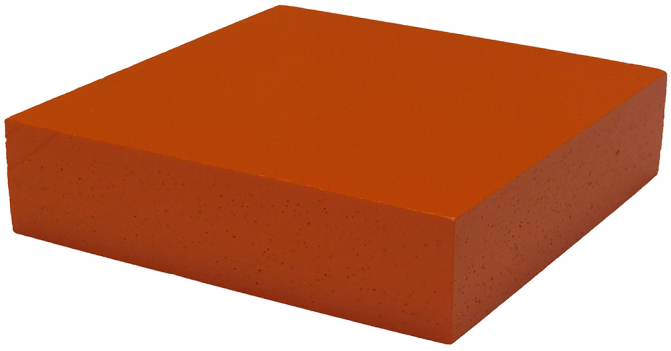
Job Reference	Job Name	Job Location

Submited To	Submited By

Date	Phone	Date	Phone

Introduction

Thermal Break Material™ (TBM-1) reduces heat loss at balcony, canopy, shelf angle, roof post and other structural connections.



Features and Benefits

- High compressive strength
- Thermal resistance of 0.6 per inch
- Supports up to 30,000 psi
- LBC Red List Free

Standard Dimensions

Thermal Break Material™ (TBM-1) is available in the following full sheet size(s):

Nominal Dimensions

Width	36”
Length	72”

Custom Sizes Available. TBM-1 is supplied cut to size with holes for installation in the field.

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The Design Standard...

Thermal Resistance

The R-values detailed below are in accordance with ASTM C518 (Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus)

Thermal resistence (R-value) varies with thickness

TBM-1Thickness (in)	Thermal Resistance (R-value)
1/4	.15
1/2	.3
3/4	.45
1	.6
2	1.2

Features And Benefits

Thermal Break Material™ (TBM-1) conducts heat 820 times less than aluminum, 220 times less than steel and 65 times less than stainless steel. For any material, conduction is a function of thickness and temperature difference, so the thickness of a thermal break material should be carefully considered.

Thermal Break Material™ (TBM-1) is a thermoset, reinforced composite. It can transfer loading conditions up to 30,000 psi and has very good fire properties. The material has been designed to form a char when exposed to flame and reduce the amount of oxygen available to a fire.
Like other high strength thermal break materials, it exhibits little to no deflection in moment loading conditions and limited creep under load.

Thermal Performance

The thermal conductivity of a material is a function of its conductance and is an important value in determining the rate at which heat flows through that material. Heat flow is also dependent on area and temperature. To be effective, a thermal break has to have a much, much lower thermal conductivity than the material it is "breaking". Since the conductance of a material is a function of its thickness, both thickness and area are important in heat flow calculations for a thermal break.

Product Data

Compressive Strength	ASTM D695	30,000 psi
Compressive Modulus	ASTM D695	400, 670 psi
Thermal Conductivity	ASTM C518	1.71 / BTU/in/hr/ft^2/^{o}F
Shear Strength	ASTM D732	14,000 psi
Tensile Strength	ATSM D638	11,000 psi
Flexural Strength	ASTM D790	23,000 psi
Flame Spread, Smoke Index	ATSM E84	25, 120
Heat, Release	ASTM E1354	rate 1.5kW/ft^2 total 5.2 MJ/ft^2