

Thermal Break Material™ (TBM-3)

Reduces Thermal Bridging in building envelope connections

TBM-3 thermal break material reduces heat loss at wall transitions such as fenestration frame attachments and curtain wall connections. It can also be used at sill plates, column bases, and roof posts.

Features and Benefits

- LBC Red List Free
- Thermal resistance of R-2 – 5.4 per inch
- Supports up to 2,200 psi
- Mildew, mold, rot resistant



TBM-3 Thermal Break in window RO to reduce “flanking” around window frame



TBM-3 Thermal Break under support column

The purpose of a thermal break is to reduce the impact of thermal bridging by preventing conductive heat flow through the building thermal envelope. Thermal breaks also help to keep surface temperatures within the thermal envelope above the dew point. This eliminates potential condensation risk.

TBM-3 conducts heat up to 5,500 times less than aluminum, 1,400 times less than steel, and up to 22 times less than concrete. For any material, conduction is a function of thickness and temperature difference, so the thickness of a thermal break material should be carefully considered.



The Design Standard...

TBM-3 Thermal Break Material is manufactured in a range of load capacities for various load conditions within the building envelope. It can be used as a thermal break under columns, roof posts, and dunnage connections providing continuous insulation where thermal bridging normally occurs. It is also ideal for use in window rough openings or as a support buck for metal framed window and door installations, reducing heat loss between the metal frames and steel stud or wood framing openings. TBM-3 thermal break material is also an effective thermal break at curtain wall and storefront transitions.

Physical Properties

		TBM – 3/4	TBM – 3/6	TBM – 3/8	TBM – 3/15	TBM – 3/20	TBM – 3/28
Compressive Stress psi	ASTM C165						
@10% deflection		83	148	230	638	1044	2233
@2% deflection		48	80	131	330	420	740
Shear Strength psi	ASTM C273	65	29	145	167	257	
Thermal Conductivity BTU/in/hr/ft ² /°F	ASTM C518	0.238	0.25	0.259	0.30	0.38	0.49
Thermal Resistance	ASTM C518	4.2	4	3.8	3.3	2.6	2.0

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.

TBM-3 is available in thickness from 1/2" to 12" supplied in 8'x4' sheets or cut to size. In any connection design using a thermal break, the goal is to find the appropriate thickness/area combination that helps the wall or roof assembly meet the U value requirement based on climate zone and energy code.



THERMAL[™]
BRIDGING SOLUTIONS **The Design Standard...**