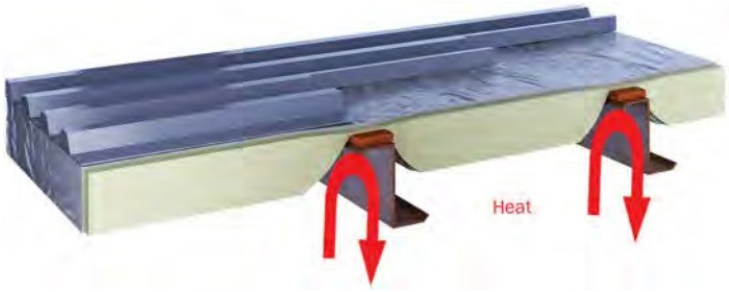
Thermal Spacer Block Material (TSBM)

Reduces Thermal Bridging in metal building envelope connections

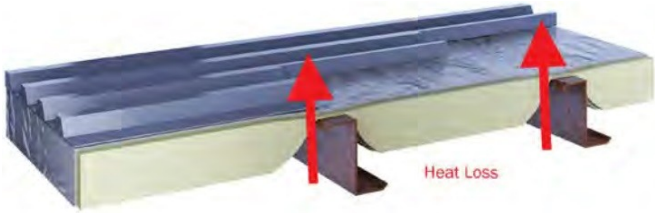
Thermal Spacer Block thermal break material reduces heat loss at wall and roof purlins. It is used between metal roof or wall panels and the purlins/girts to increase the thermal resistance of walls and roofs in metal buildings.

Features and Benefits

- LBC Red List Free
- Thermal resistance of R-4 – 5.4 per inch
- Supports up to 148 psi
- Mildew, mold, rot resistant



With Thermal Spacer Block Material



Without Thermal Spacer Block Material

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.

TSBM 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.

THERMAL™
BRIDGING SOLUTIONS

The Design Standard...

Thermal Spacer Block Material combines strength and thermal resistance. It is manufactured in several compressive strengths and R values for various conditions within the metal building envelope. TSBM provides continuous insulation where thermal bridging normally occurs, and where thermal spacer blocks are required by energy code. It is also ideal for use in window sills or as a buck for metal framed window and door installations, reducing heat loss between the metal frames and steel stud or wood framing openings.

Physical Properties

		TSBM-30	TSBM-40	TSBM-60
Compressive Stress psi	ASTM C165			
@10% deflection		58	83	148
@2% deflection		31	48	80
Shear Strength psi	ASTM C273	29	65	95
Thermal Conductivity BTU/in/hr/ft^2/°F	ASTM C518	0.185	0.238	0.25
Thermal Resistance	ASTM C518	5.4	4.2	4

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.

TSBM is available in thickness from 1/2" to 6" supplied in 8'×4' 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.