ARMATHERM™
THERMAL BREAK SOLUTIONS

Structural Thermal Break Solutions

Product: Z-Girt Thermal Break
Grade: Armatherm™ Grade FRR

INTRODUCTION

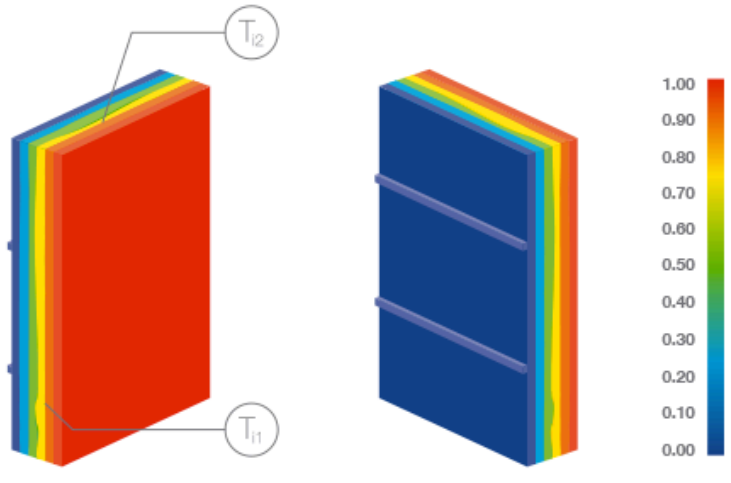
Thermal bridging is recognised as a significant factor in building envelope heat loss. It has been determined that the total heat flow through typical wall assemblies is underestimated by as much as 70% due to thermal bridging, yet simply adding insulation to walls has been proven to not necessarily decrease the energy use of a building. Heat flow paths (thermal bridges) allow heat to by-pass the insulation, negating any benefit of installing more insulation in the wall.

Metal, cement and laminate wall claddings are supported by and attached to continuous girts or clips that penetrate the exterior insulation layer, creating thermal bridges. These fastening systems are normally made of highly conductive steel or aluminum, creating significant energy (heat) loss. It has been demonstrated that these thermal bridges in conventional steel stud wall assembly construction reduce insulation effectiveness (R value) by as much as 50%, resulting in wall assemblies and interface details that do not meet current energy code requirements for minimum U value.

When thermal bridging is ignored, the unaccounted for heat flow creates higher heating and cooling costs, oversizing of HVAC equipment, operational inefficiencies and higher energy consumption.

A thermal model of a steel stud wall assembly with horizontal steel girts and exterior insulation. Note the heat flow path created by the steel girts passing through the exterior insulation.

The temperature scale can be used as a temperature index to predict whether condensation will likely be a problem or not in the local area of the girts on the internal sheathing.



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