

Thermal Break Material

Armatherm™ 500

For Structural Connections

Introduction

Reducing heat flow within a building's thermal envelope reduces energy consumption as well as potential condensation issues. Armatherm™ 500 thermal break material significantly reduces energy lost from thermal bridging in building envelope connections.

Armatherm™ 500 is a high strength, polyurethane material made in several densities to support a wide range of loading conditions. Due to its closed cell structure, it does not absorb water or moisture and has limited creep under continuous load. The material is thermoset, does not melt and is flame resistant making it an ideal material for use in structural thermal break connections.

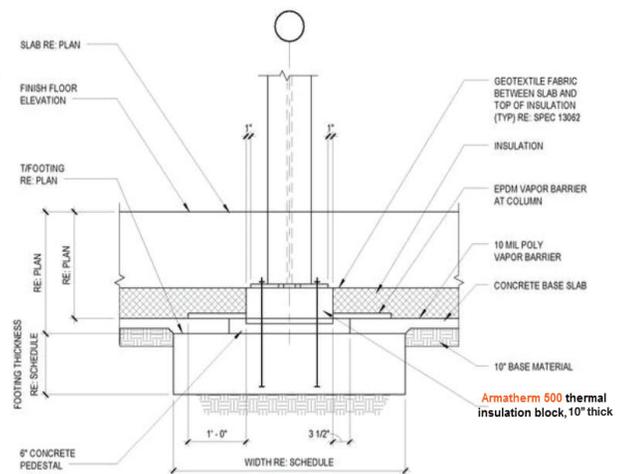


Specifications Armatherm™ 500	160	250	320	490
Compressive Strength (N/mm ²)	2.0	4.4	7.2	16.8
Compressive Modulus (N/mm ²)	65	240	320	440
Thermal Conductivity (W/mK)	0.031	0.042	0.051	0.07
R Value Per 25mm	4.60	3.40	2.80	2.00
Min. Operating Temperature °C	-185	-185	-185	-185
Max. Operating Temperature °C	80	80	80	80

Armatherm™ 500 is manufactured in sheets 2400 x 1200 x 50mm thick and can be bonded to create 150mm, 200mm and 250mm thicknesses to achieve a specific R value. It can be used anywhere a penetration or transition exists in the building envelope creating a thermal bridge.

Solutions using Armatherm™ 500 to minimise heatloss include:

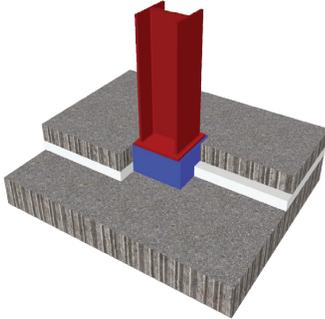
- Parapets
- Slab/floor edge
- Column base
- Roof penetrations
- Roof Edge
- Slab to foundation
- Foundation to wall
- Concrete balconies



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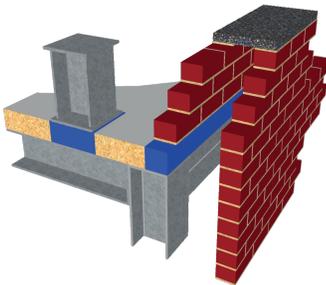
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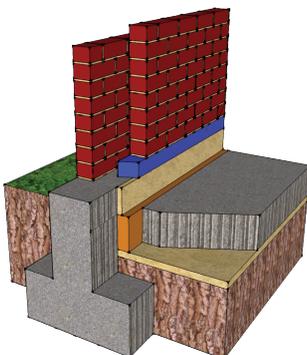
Column Base

Columns traditionally extend through the building envelope and slab insulation at their base. Thermal bridging can be prevented by using Armatherm™ 500 series material as a load supporting, thermal break directly under the column base. This is particularly important in cold storage facilities to prevent the sub grade from freezing.



Parapet/Roof Penetration

Roof to wall and parapet locations require structural framing for support which prevents continuous insulation from roof to façade. This creates a thermal bridge which can be prevented by providing a Armatherm™ 500 series structural thermal break under the parapet connecting the façade and roof insulation and improving the effective R value by as much as 30%. A thermal break can also be installed within the envelope at roof penetration points where structural elements are supported. This provides continuous insulation and prevents potential condensation issues.



Slab/Foundation/Wall

Foundations are a part of a building's envelope. The connection from slab on grade to foundation wall and wall above foundation wall are both areas where thermal bridging occurs. Armatherm™ 500 series material can support and transfer loads up to 18 N/mm² while providing minimal energy loss. When used with Armatherm™ rebar, the heat loss at these concrete connections is reduced significantly.

ARMATHERM™ Minimise building energy loss and improve building envelope performance.