



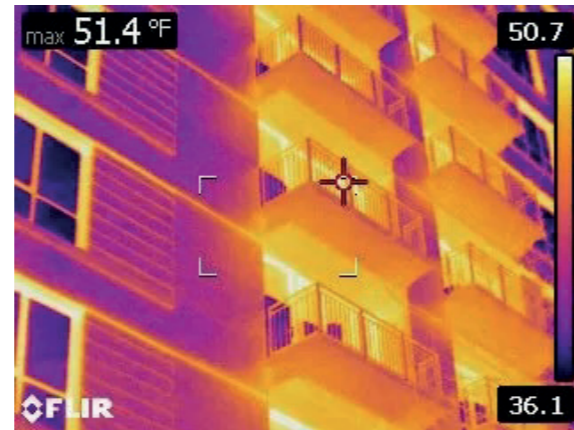
# THERMAL BRIDGING SOLUTIONS FOR EXTERNAL CONCRETE APPLICATIONS

A closer look at preventing thermal bridging within reinforced concrete structures including balconies and parapets

# THERMAL BRIDGING OVERVIEW

The addition of concrete elements to a building, such as balconies or parapets, can create large thermal bridges, reducing the R-Value of a wall by as much as 50% and negatively impacting the building envelope. While modern building envelopes are becoming better insulated and more air tight, this can highlight the impact of any present thermal bridges and cause more issues at connections where they are present. When left untreated thermal bridges can lead to the following problems:

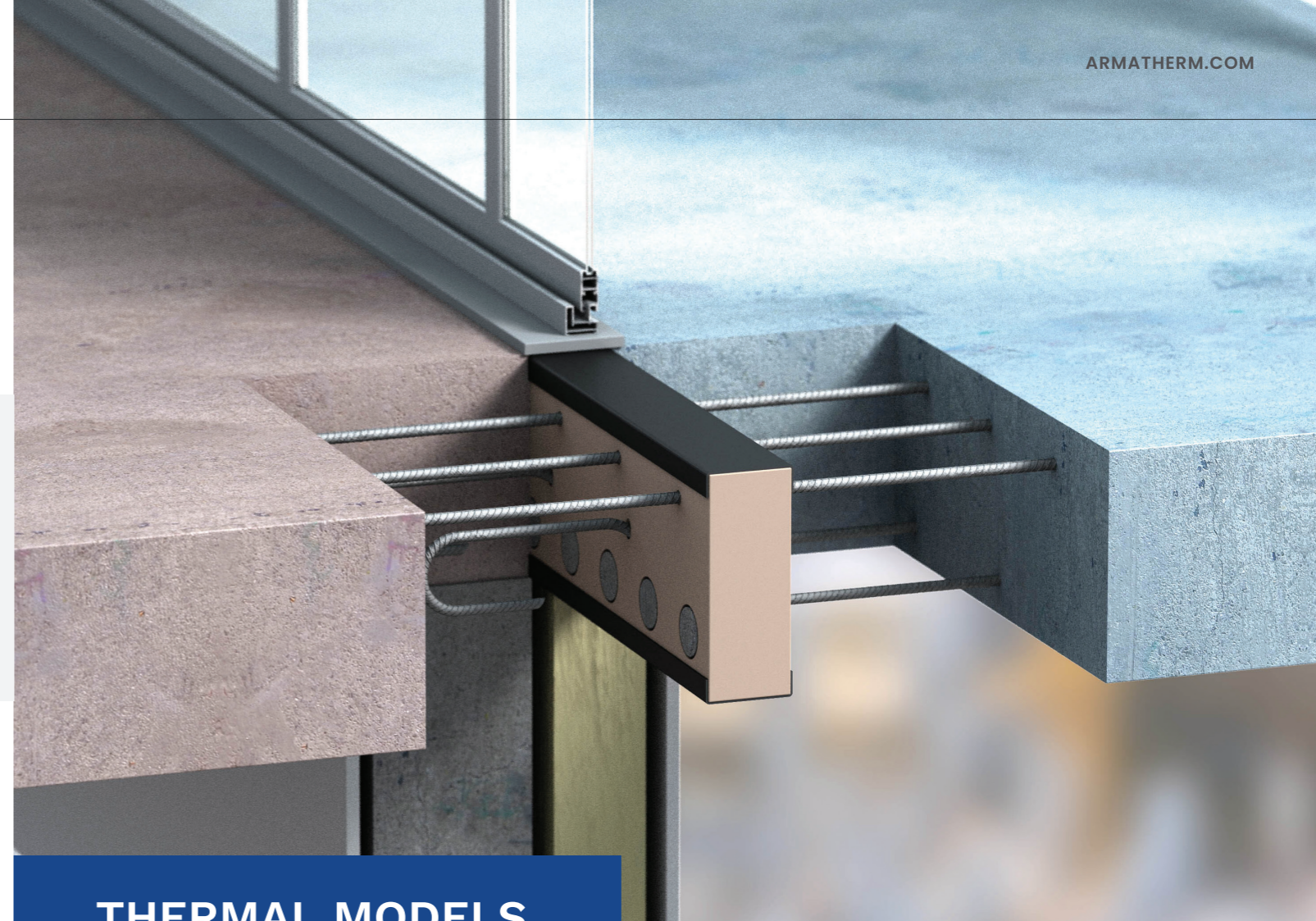
- A significant increase in energy required to heat and cool the building
- Condensation forming regularly inside the building envelope which can lead to serious damage
- Mold growth within the building, which poses significant health risks to occupants
- Discomfort for occupants due to large temperature variances in the interior of the building



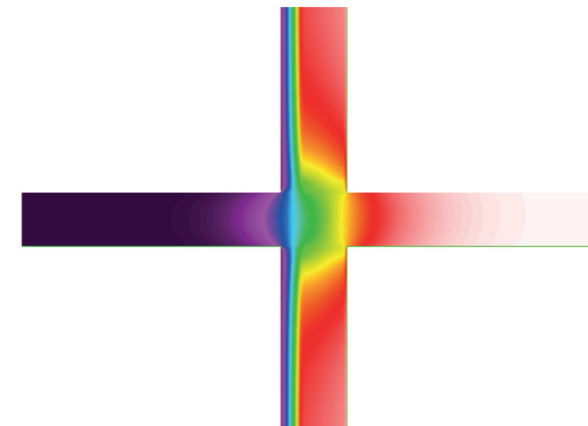
## THE SOLUTION

Improving the thermal performance of the building envelope and effectively treating thermal bridging has become a high priority in modern building design. This is reflected by the increased requirements in local building codes and ASHRAE, as well as a higher focus on sustainability programs such as LEED. Armatherm™ thermal breaks offer an effective solution to help solve thermal bridging in the building envelope. The use of the Armatherm™ CIS in concrete connections can:

- ✓ Prevent condensation and mold growth
- ✓ Effectively stop heat loss across the connection
- ✓ Significantly improve the effective R-Value of the building envelope
- ✓ Increase thermal comfort on the inside of the building
- ✓ Help meet code requirements for the building envelope performance



## THERMAL MODELS



**Figure C1:** Simulated Temperature Profile of Exterior Insulated with Rigid XPS Insulation (R-15) Steel-Frame Wall Assembly at Continuous Cantilevered Concrete Balcony Detail

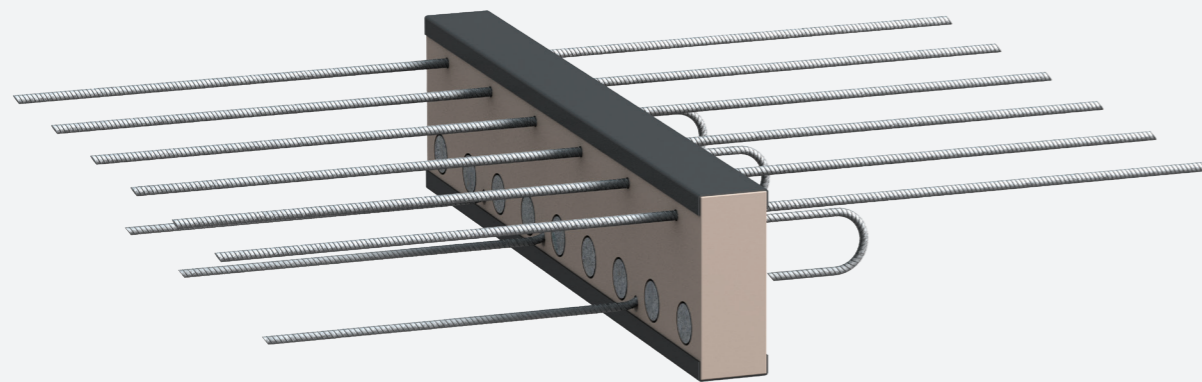


**Figure C2:** Simulated Temperature Profile of Exterior Insulated with Rigid XPS Insulation (R-15) Steel-Frame Wall Assembly at Thermally Broken Balcony Detail with 3-inch CIS Thermal Break

# WHY CHOOSE ARMATHERM™?

The all-new Armatherm™ Cast-In Situ thermal break has been developed specifically for the construction material market and is the result of a decade of expertise in the field of thermal breaks, and the hard work and dedication from the Armatherm™ team. As the leading provider of thermal break solutions, Armatherm™ provides a comprehensive service from design, right through to installation, with the aim of providing simple and effective thermal break solutions.

WHY ARMATHERM™?

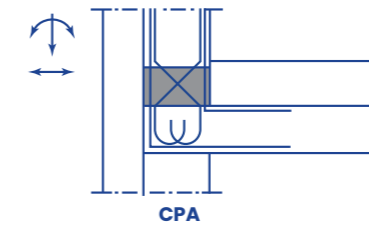


## Advantages of the Cast-In Situ thermal break

- Effectively reduces thermal bridging and its potential consequences
- Simple range, for ease of design and installation
- Robust construction to withstand transport and onsite handling
- Rigid structural insulation body allows for nailing to formwork and cutting on site
- Quick installation thanks to step-by-step process
- Fully adaptable to suit projects needs
- Designed for the construction material market and available in both imperial and metric sizes

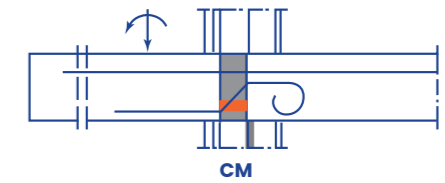
APPLICATIONS

## CAST-IN SITU APPLICATIONS



CPA

Parapets



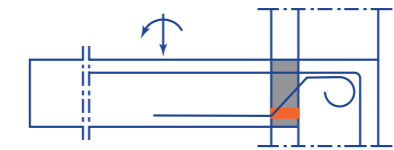
CM

Balconies & Canopies



CSE

Slab Edges



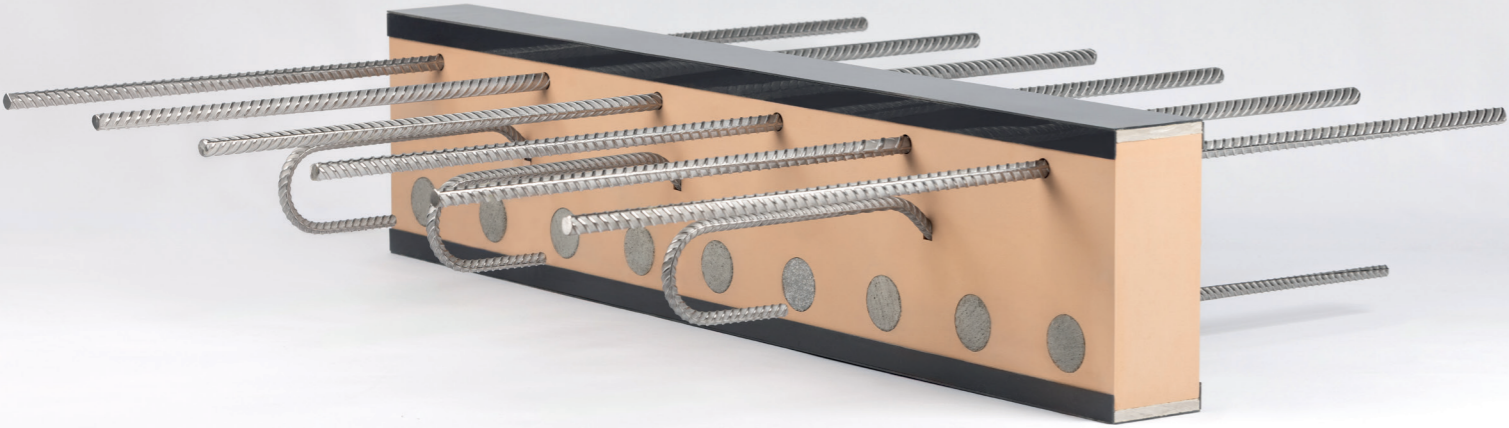
CM-WB

Balconies & Canopies

## Key features of the Cast-In Situ thermal break

- 3" imperial or 75mm metric thick insulation body made from Armatherm™ 500-280 with a total R-Value of 5.7
- American 2304 Grade 75 stainless steel rebars for maximum structural performance and corrosion protection
- Standard ASTM bar sizes
- High-performance concrete compression modules
- Available with fire protection dependant on project requirements

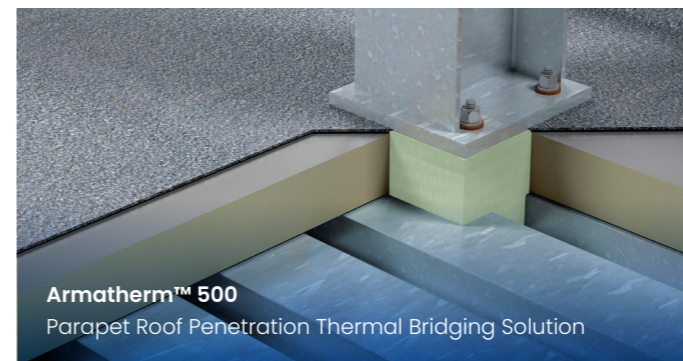
# OUR PRODUCTS



**Armatherm™ FRR**  
Balcony Canopy Thermal Bridging Solution



**Armatherm™ FRR**  
Masonry Shelf Angle Thermal Bridging Solution



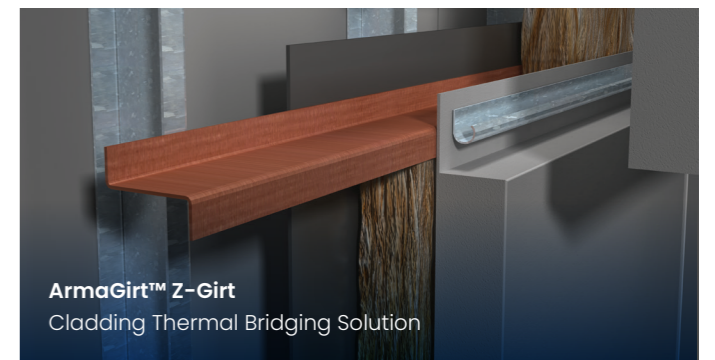
**Armatherm™ 500**  
Parapet Roof Penetration Thermal Bridging Solution



**Armatherm™ 500**  
Column Base Thermal Bridging Solution (load dependent)



**Armatherm™ 500**  
Foundation Wall Thermal Bridging Solution (load dependent)



**ArmaGirt™ Z-Girt**  
Cladding Thermal Bridging Solution

Looking for innovative thermal insulation solutions?  
Discover the new Cast-In Situ product and more at [armatherm.com](http://armatherm.com).

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