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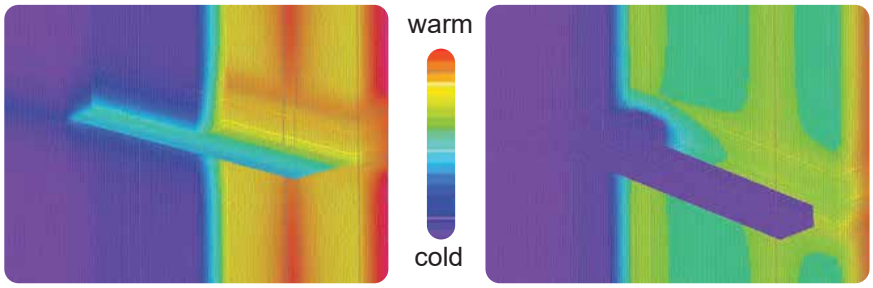
Thermally Broken Shelf Angle Design for Masonry & Stone Facades

Webinar AIA Program #002 / LU | HSW Hours 1.00

OVERVIEW This presentation focuses on thermally efficient methods for masonry cladding supports that promote the standards of Passive House, LEED® and Green Building, along with the requirements for continuous insulation in above-grade wall assemblies. These requirements are more common as the industry moves toward more demanding energy codes, thermal performance standards and energy efficient wall assemblies. Understanding the impacts of conventional shelf angles on energy efficiency and cost is a critical consideration for your next building envelope design.

Using off-set shelf angle support materially improves thermal performance

From the 2019 Colorado Masonry Systems Design Guide: Thermal images of a continuous (top) and standoff (bottom) shelf angle support arrangement at a concrete floor line and steel-stud framed backup wall.(Fig. 8-11, p.132)



PRESENTERS

Michael Ross, Senior Engineer

Michael oversees the design of effective and innovative structural and architectural FERO solutions for a variety of projects. He has an MSc in Structural Engineering, specializing in concrete masonry, and has over 13 years of experience in the field of structural consulting. Michael focuses on taking a pragmatic, value-add approach to engineering.
The combination of his education and his consulting roles enable him to understand the needs of architects and engineers working with FERO products and how to help them achieve their design goals.

Jeffrey Hung, Senior Engineer

Jeff brings over 10 years of hands-on experience in consulting structural engineering. His expertise spans a diverse range of projects, encompassing new constructions and renovations involving structural steel, reinforced concrete, and masonry buildings.
He holds a Master of Science in Structural Engineering with his research focused on masonry design.

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OTHER COURSE DETAILS

Course Delivery Type: In-person or Webinar
Course Level: Intermediate

Recommended Prerequisite Knowledge

For design and construction professionals familiar with building and energy codes.

HSW Justification

This course qualifies for HSW credit because it addresses two HSW topics: (1) Project Planning and Design, and (2) Project Development and Documentation. With respect to Project Planning and Design, the presentation focuses on designing with an offset shelf angle system to optimize energy efficiency and structural performance, as well as reduce materials and labor costs. With respect to Project Development and Documentation, the presentation focuses on integrating a building system (offset shelf angle) that is thermally broken.

Learning Objective 1

Describe the key characteristics of an energy-efficient shelf angle design.

Learning Objective 2

Identify common issues associated with conventional shelf angle designs, including thermal bridging, difficult installation, and high costs.

Learning Objective 3

Explain how integrating thermally broken shelf angle supports enhances energy efficiency, adjustability, customization, and cost-effectiveness in wall assemblies.

Learning Objective 4

Demonstrate how incorporating thermal ties or connectors improves overall wall assembly performance.

A recent project, pictured above, utilized Thermal Brackets with a cost-effective 4 x 4” shelf angle, resulting in a dramatic reduction in the amount of steel that would have otherwise been required to accommodate the 9.5” cavity.
More project details can be found here:

https://ferocorp.com/gene-zwozdesky-centre-norwood-redevelopment/

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