

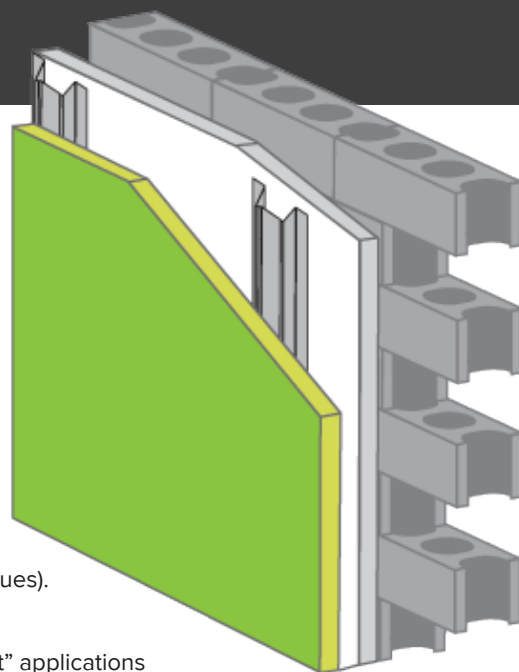
Fastening FPIS ci to Concrete & Masonry Construction

INTRODUCTION

Fastening insulation materials and other components to concrete and masonry construction typically relies on proprietary fasteners and tools. This resource provides guidance for and examples of such tools and fasteners for attachment of foam plastic insulating sheathing (FPIS) to concrete and masonry construction. These tools and fasteners may also be suitable for fastening furring over a thickness of FPIS ci to underlying concrete or masonry construction.

GENERAL RECOMMENDATIONS*

- Refer to the tool/fastener manufacturer's technical literature for appropriate tool and fastener applications.
- Check with the tool/fastener manufacturer for fastener code evaluation and performance data (e.g., shear and tension/withdrawal strength and design values).
- Follow the manufacturer's instructions for tool settings and operation.
- Become familiar with the tool operation and fastener application through "test" applications before beginning actual construction.
- Seek professional advice for matters related to connections intended to safely resist code-required structural loads.



RELEVANT MODEL BUILDING CODE REQUIREMENTS

Attachments to Concrete and Masonry

Section 1404.5 of the 2024 International Building Code (IBC) requires that exterior wall coverings be fastened with corrosion-resistant fasteners in accordance with the code or approved manufacturer's instructions. For cladding attachments over foam sheathing to masonry and concrete wall construction, [Section 1404.5.1](#) states:

Cladding shall be specified and installed in accordance with [\[Chapter 14\]](#) and the cladding manufacturer's installation instructions or an approved design. Foam sheathing shall be attached to masonry or concrete construction in accordance with the insulation manufacturer's installation instructions or an approved design. Furring and furring attachments through foam sheathing shall be designed to resist design loads determined in accordance with Chapter 16, including support of cladding weight as applicable. Fasteners used to attach cladding or furring through foam sheathing to masonry or concrete substrates shall be approved for application into masonry

or concrete material and shall be installed in accordance with the fastener manufacturer's installation instructions.

Exceptions:

1. Where the cladding manufacturer has provided approved installation instructions for application over foam sheathing and connection to a masonry or concrete substrate, those requirements shall apply.
2. For exterior insulation and finish systems, refer to [Section 1407](#).
3. For anchored masonry or stone veneer installed over foam sheathing, refer to [Section 1404](#).

Similar requirements are found in [Section R703.17](#) of the 2024 International Residential Code (IRC).

***DISCLAIMER** While reasonable effort has been made to ensure the accuracy of the information presented, the actual design, suitability and use of this information for any particular application is the responsibility of the user. Where used in the design of buildings, the design, suitability, and use of this information for any particular building is the responsibility of the Owner or the Owner's authorized agent. The information contained herein is provided "as is."

Attachments to Wood and Cold-formed Steel Framing

In [Section 1404.5.2](#) and [Section 1404.5.3](#), the 2024 IBC gives prescriptive fastening schedules for attachment of cladding and furring materials to steel and wood framing, respectively, through FPIS up to 4 inches thick. Similar requirements are found in [Section R703.15](#) and [Section R703.16](#) of the 2024 IRC. Code compliance guides for these applications can be found in the following **Quick Guides**: [Cladding Connections to Wood Frame Walls with FPIS ci](#) and [Cladding Connections to Steel Frame Walls with FPIS ci](#)

Temporary Construction Attachment of FPIS

For attachment of FPIS ci to resist temporary loads during construction, refer to the FPIS manufacturer's literature for appropriate fastener schedules. Temporary fastening during construction is only intended to secure a material in place until permanently secured by other components such as furring (battens) or cladding materials that are installed to resist code-required loads. In general, building codes do not regulate temporary fastening for construction purposes; it's a matter of accepted construction practice. However, foam sheathing can be permanently fastened to resist design loads, such as wind, where required and where the FPIS product, along with the fastener and washer used to secure it, are properly rated for wind load.

Application Standard

For more information on applications of foam sheathing on above-grade walls, including prescriptive and performance requirements for attaching cladding, furring, and light structural components through FPIS, refer to the [ANSI/ABTG FS200.1-2022 standard](#), which is referenced in the 2027 editions of the IBC and IRC.

EXAMPLE TOOLS & FASTENERS

The following are examples of available tools and fasteners for attaching FPIS to concrete and masonry substrates, or for attaching components through FPIS to those substrates. The examples are not exhaustive, nor should they be taken as endorsements. They are provided for the purpose of illustrating available fastening options.

GX-IE Insulation Nailer & X-IE-G 6 Insulation Fasteners (Hilti)

- Fastening insulation to concrete and cold-formed steel
- Insulation thicknesses up to 8 inches

[website](#)

[application video](#)



TRUFast Wall Applications for Continuous Rigid Insulation

- Fastening insulation to concrete or masonry
- Insulation thicknesses up to 6 inches

[website](#)

[application video](#)

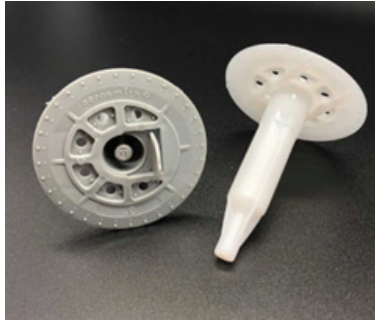


EXIF Insulation Fastening Tool & InsulPin® Fasteners (Aerosmith)

- Fastening insulation to concrete, masonry, and steel
- Insulation thicknesses up to 6 inches

[website](#)

[application video](#)



Concrete/Masonry Screws

- Fastener lengths up to 6 inches
- Requires pre-drilling of concrete or masonry substrate
- Coated fasteners (also available in stainless steel)
- Widely available and produced by several manufacturers, including:

[ITW/TapCon](#)

[ITW/Redhead](#)

[Simpson Strong-Tie](#)



Additional Resources

For more information about code compliance related to cladding connections and FPIS ci, refer to:

- **ContinuousInsulation.org:** [Cladding Connections](#)
- **Applied Building Technology Group:** [ANSI/ABTG FS200.1 – 2022 “Standard for Use of Foam Plastic Insulating Sheathing \(FPIS\) in Building Envelopes: Above-grade Walls”](#)
- **CI Quick Guides:** [Cladding Connections to Wood Frame Walls](#) • [Cladding Connections to Steel Frame Walls](#)

Contact us.



Owned and operated by the Applied Building Technology Group with support from the Foam Sheathing Committee (FSC) of the American Chemistry Council, **continuousinsulation.org** provides informational resources intended to assist the foam plastic insulating sheathing industry, using sound science to develop research supporting the reliable, efficient, and economic design and installation of foam sheathing.

