MITREX™

BUILDING-INTEGRATED SOLAR TECHNOLOGY

SOLAR CLADDING SYSTEM

MITREX PANEL | Introduction

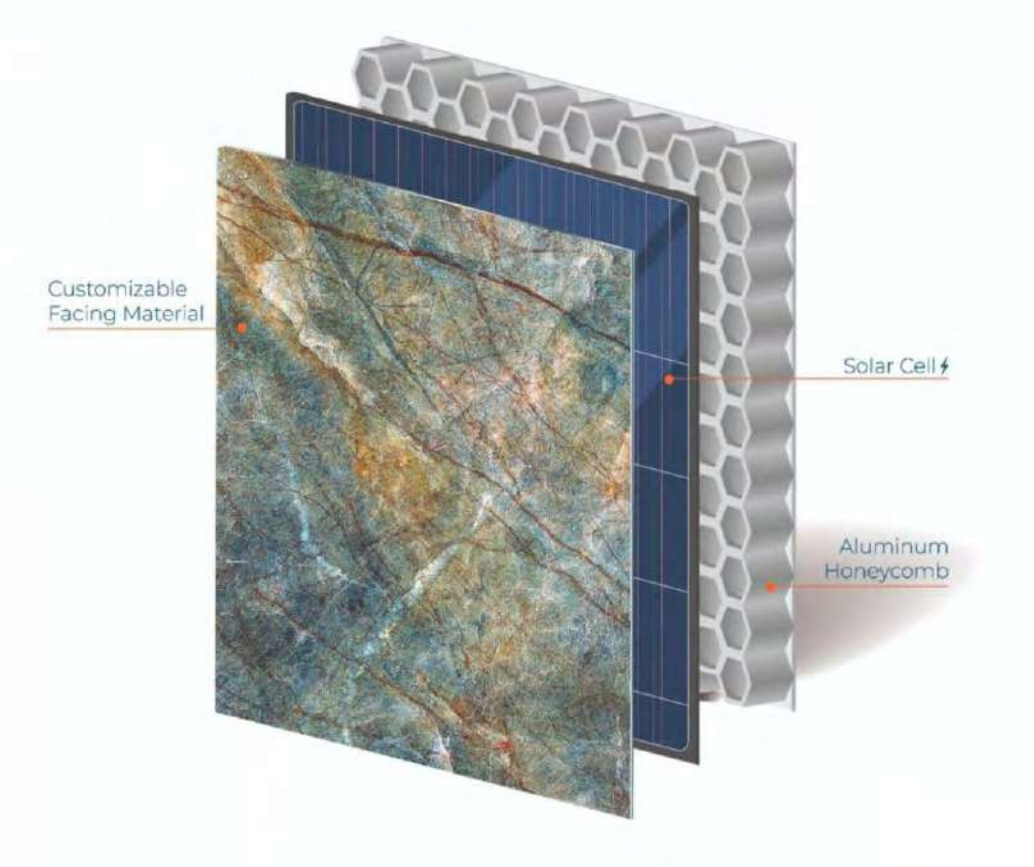
Mitrex Panels

Mitrex panels are an energy-efficient solution for both existing or new facades. These panels are lightweight and can provide thermal resistance and exterior noise control to a building while offering a durable and aesthetically-pleasing appearance.

Transparent, Opaque, Translucent & Transitional PV Modules are available with the option of an aluminum honeycomb backing or a layered glass backing. These panels act as a building envelope while generating power.

Mitrex panels can be used with our Rainscreen or Cladicast system. There are different methods and materials used for the installation of Mitrex panels, which are available in a variety of colors, textures, and sizes.

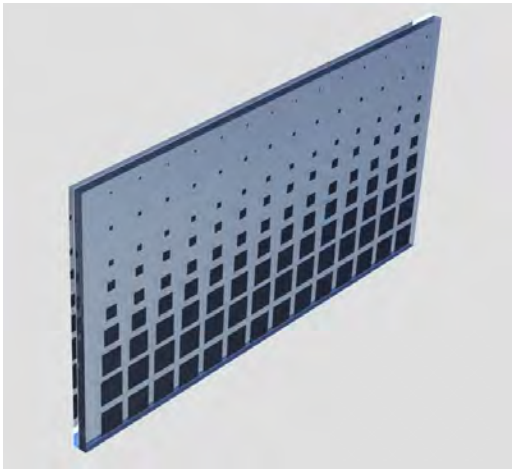
Our panels are flexible and can be adjusted and altered as per the construction needs of any project.



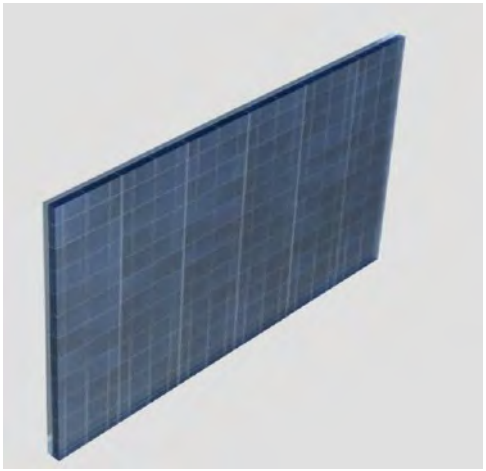
MITREX PANEL | Introduction

Transparent

Opaque



Transitional



Translucent

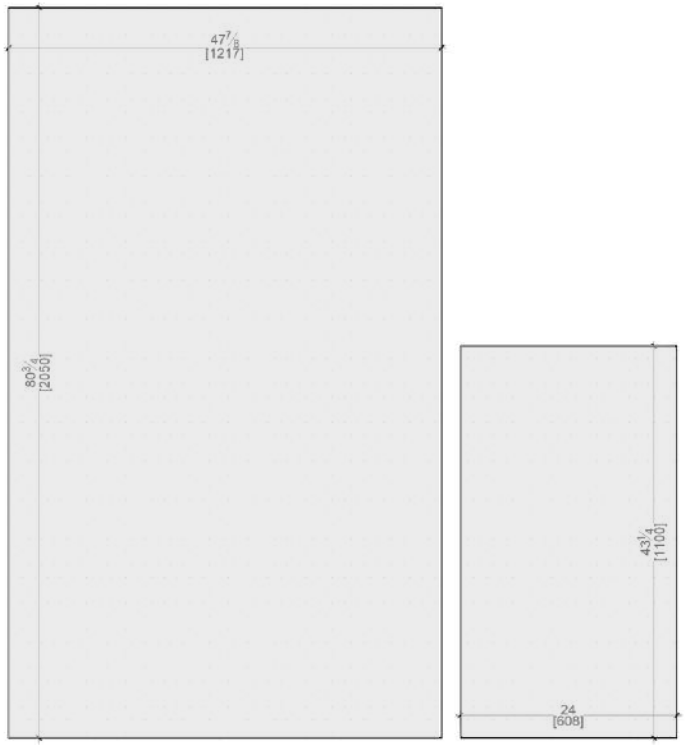
PV Modules Types:

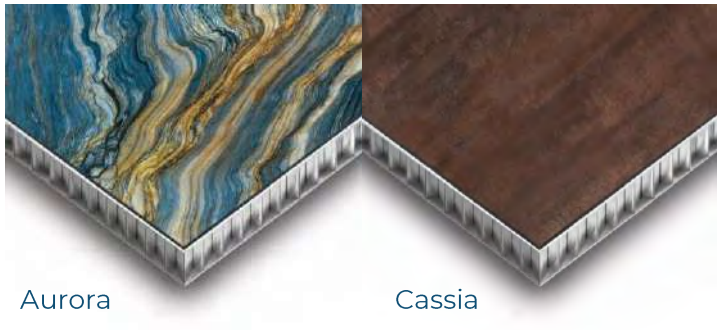
- Transparent
- Opaque
- Translucent
- Transitional

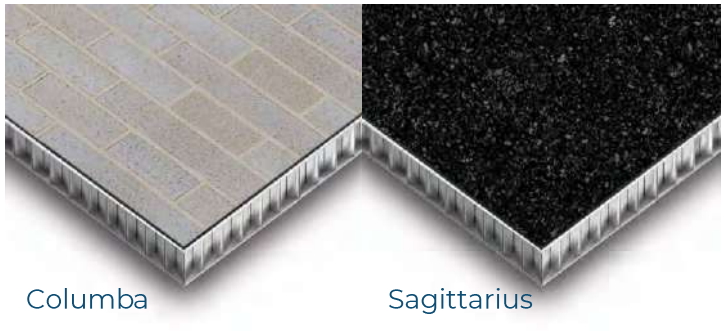
These are available with the option of an aluminum honeycomb or a layered glass backing. These serve a dual purpose for the building; they act as a building envelope and provide power generation. The cell arrangement can change depending on the needs of the project and design aesthetic.

MITREX PANEL | Introduction

- **Max. Panel Size**
  47 7/8”(1219mm)- 80 3/4”(2050mm)
- **Min. Panel Size**
  24**”** (609mm)-43 1/4”(1100mm)
- Fully automated sizes that can be adjusted and altered as per the project requirements.

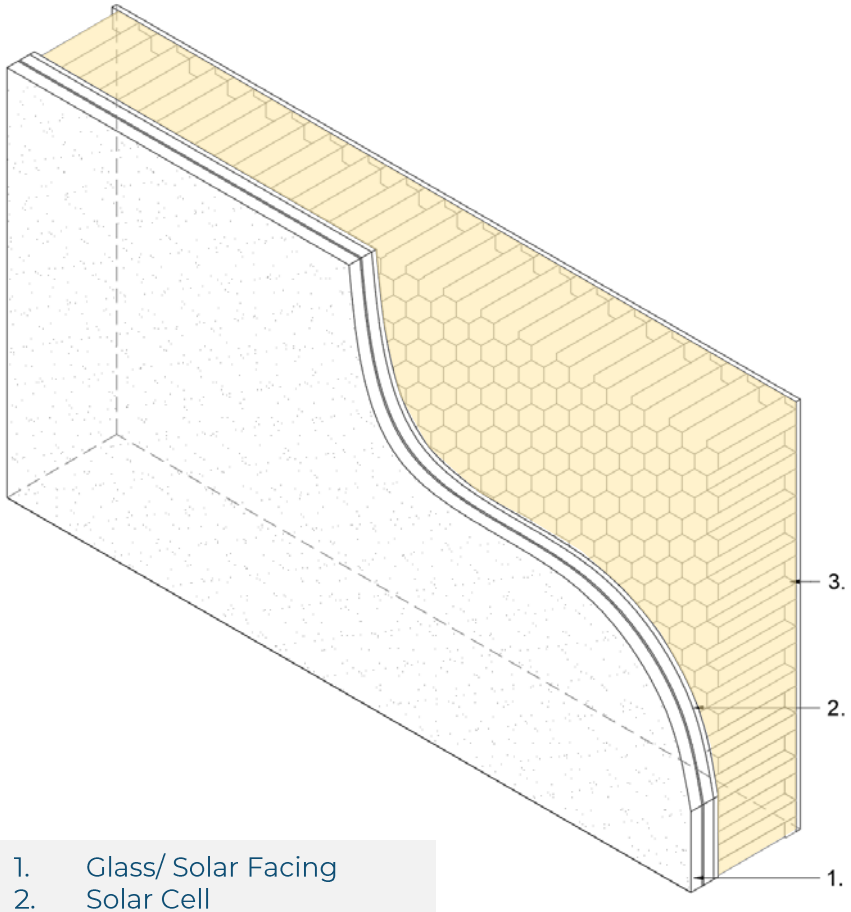



Aurora Cassia

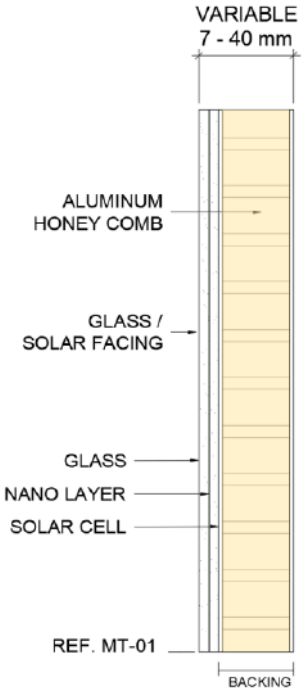

Columba Sagittarius

Peridot Mandorla

PANEL | Aluminum Honeycomb



1. Glass/ Solar Facing
2. Solar Cell
3. Aluminum Honeycomb



Aluminum Honeycomb Panel Backing

- Thickness varies from 1” to 8”.
- Min 2” thickness recommended for cold weather conditions.

Advantages:

- Lightweight and strong
- Fire resistant
- Impact resistant
- Sound and heat insulation

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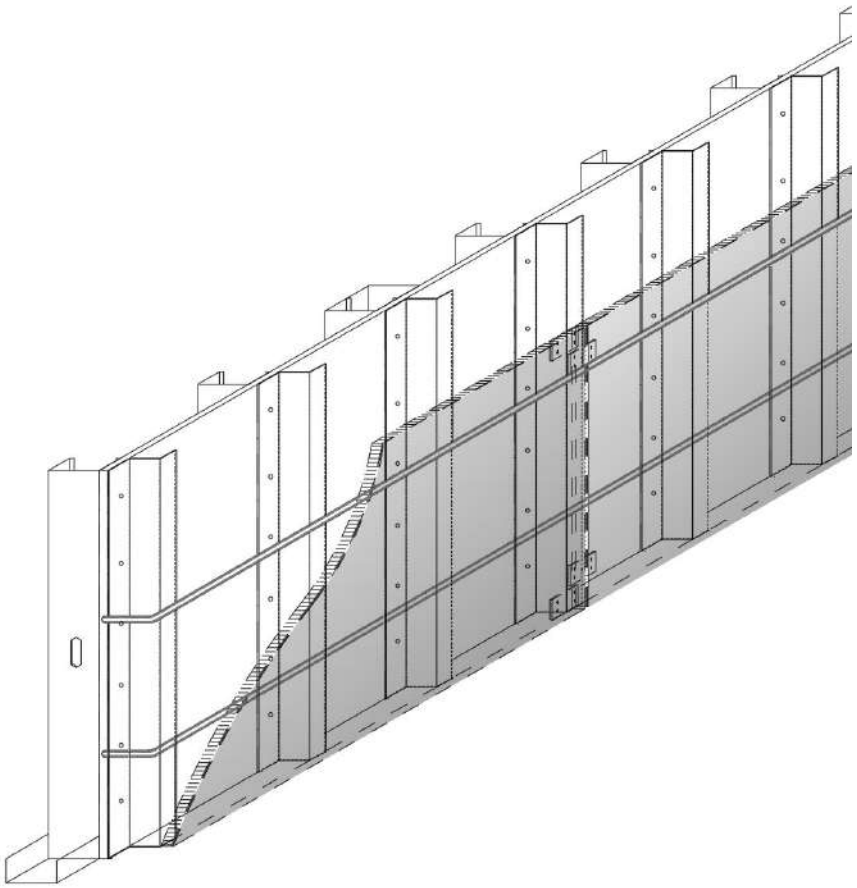
RAINSCREEN SYSTEM

Pressure-Equalized Ventilated System



Why Pressure-Equalized Ventilated Rainscreen System?

- Rainscreen systems are applied to the external wall which preserves the building from extreme weather conditions by providing an air cavity between the cladding panel and external wall.
- Rainscreen panels keep rainwater out. An air and vapor barrier is installed on external wall to allow water drainage and prevent absorption of moisture into the building.
- This rainscreen is efficient in all weather conditions. They incorporate permeable outer cladding with designated air spaces, moderate ventilation, air and watertight wall support.
- The air void stimulates quick air pressure equalization—thus, reduces moisture interference.

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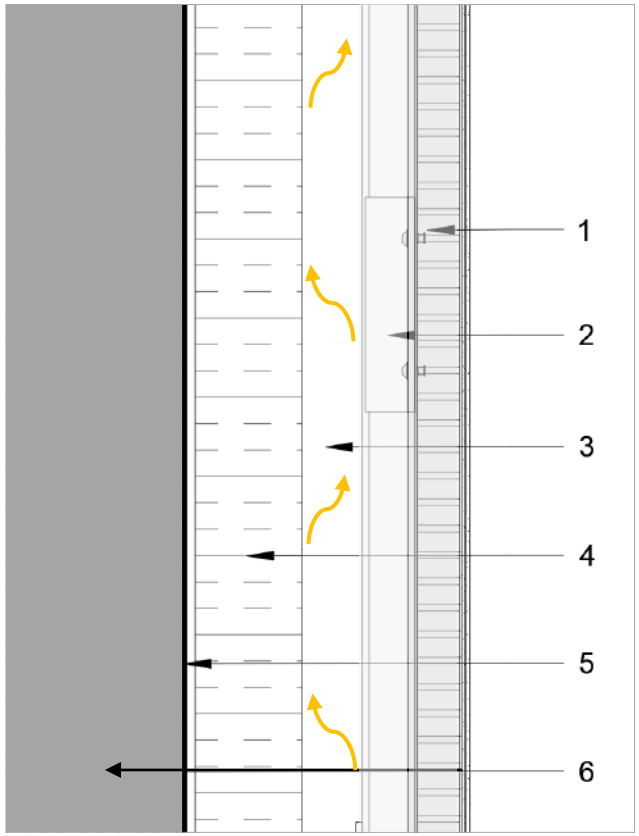
RAINSCREEN SYSTEM | Terminology



Pressure-Equalized Ventilated Rainscreen System
In this system, the panels themselves act as a rainscreen and prevents water penetration into the building surface. The air cavity between the panels and the exterior wall maintains air pressure between the air cavity and the outside air. It helps in the evaporation of moisture naturally.

Cladding (1)
Panels have solar cells sandwiched between exterior glass and an aluminum honeycomb backing, open or closed joints, in one plane or lapped.

Sub framing (2)
To support the cladding, vertical panel supports are timber or metal.

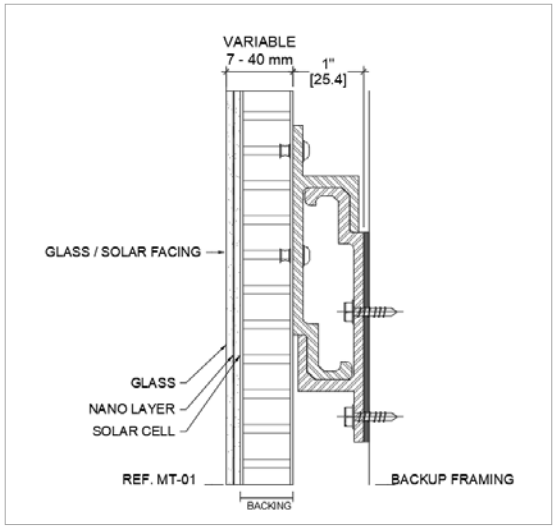
Ventilation cavity (3)
Cavity behind panels with ventilation gaps that allow air to pass through.

Thermal insulation layer (4)
The purpose is to increase the thermal insulation capacity of the wall.

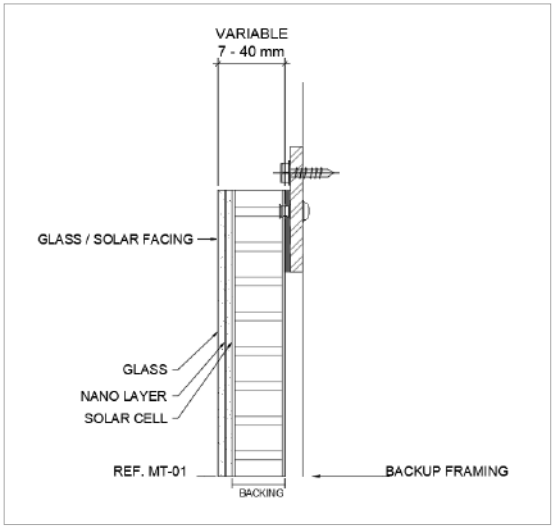
Substrate (5)
This is the exterior wall face (plaster, concrete, exterior sheathing, wind proofing layer, etc.).

Exterior wall (6)
Brick, concrete, wood and steel studs.

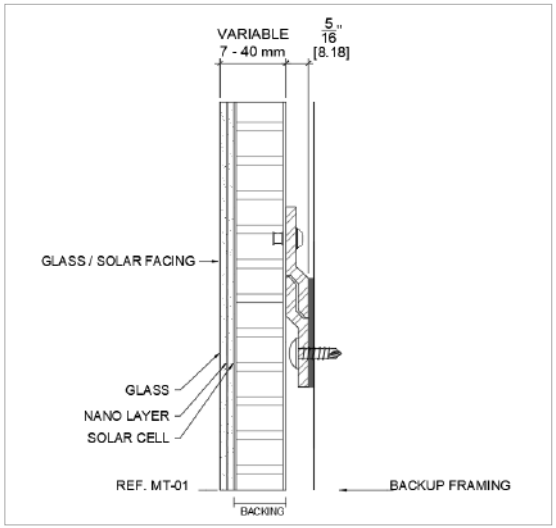
ATTACHMENT SYSTEM | Types



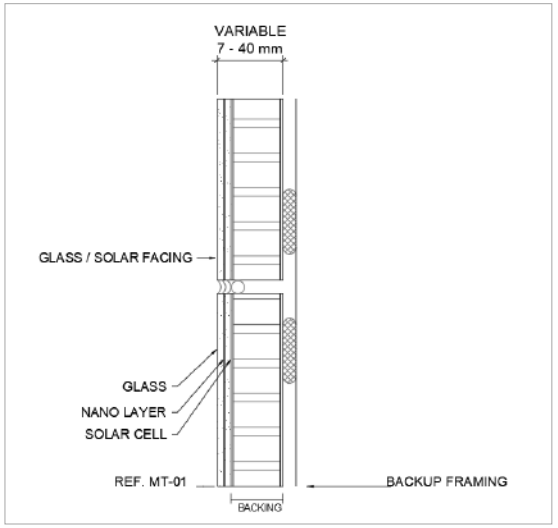
Interlocking Channel System



Anchor Plate System

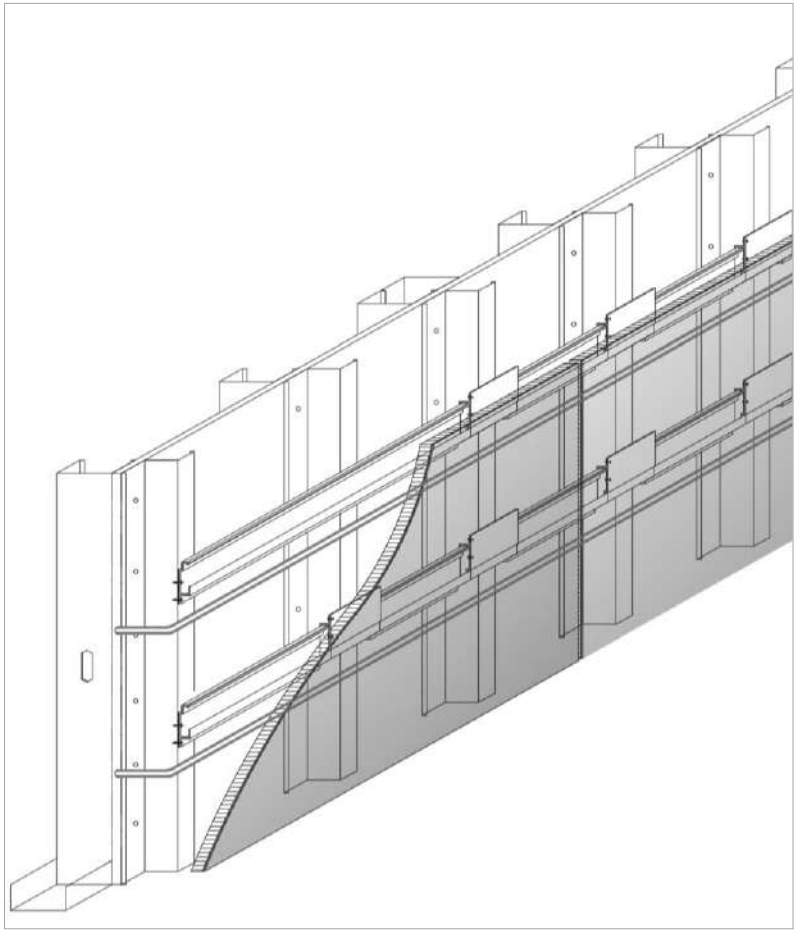


Z-Clip Attachment

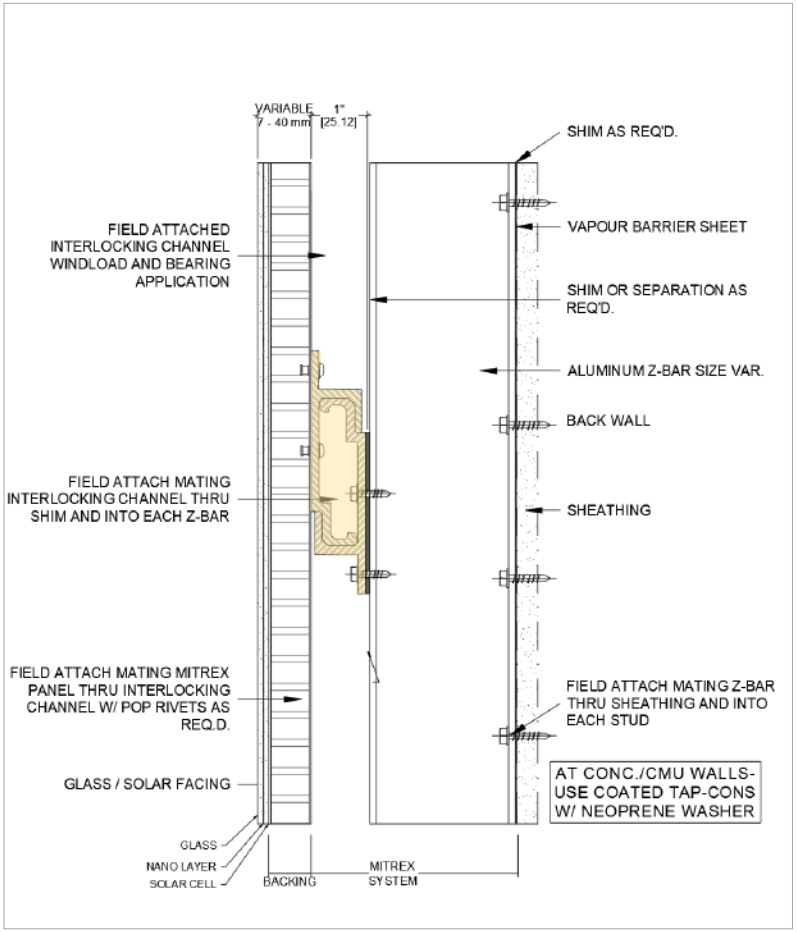


Adhesive Attachment System

ATTACHMENT SYSTEM | Interlocking Channel System

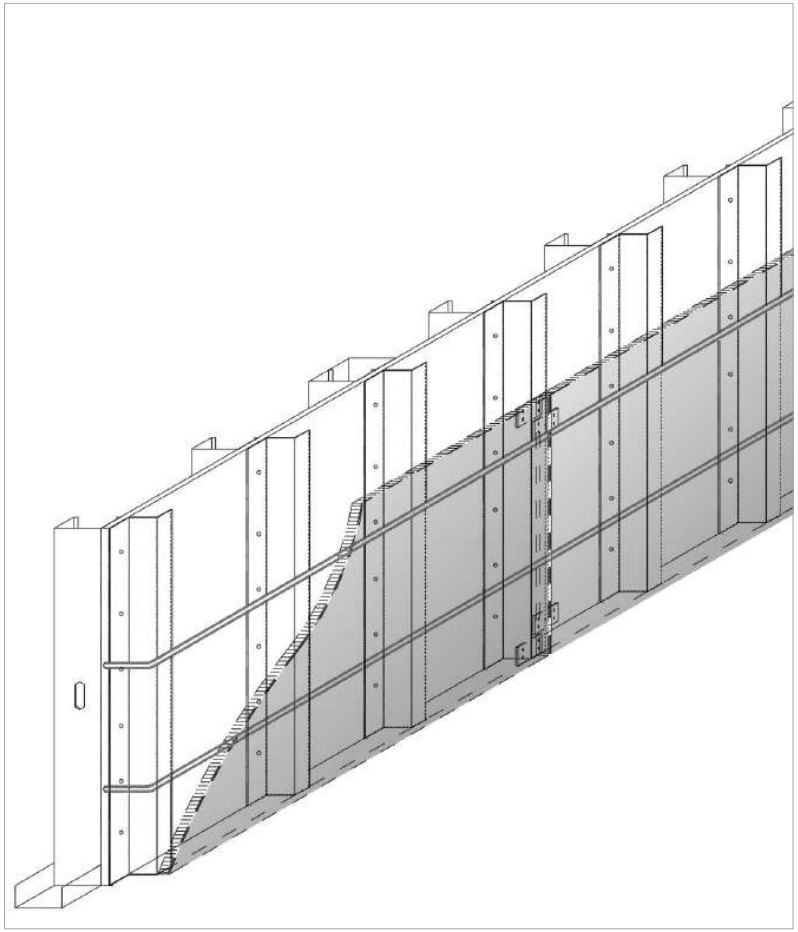


Isometric View

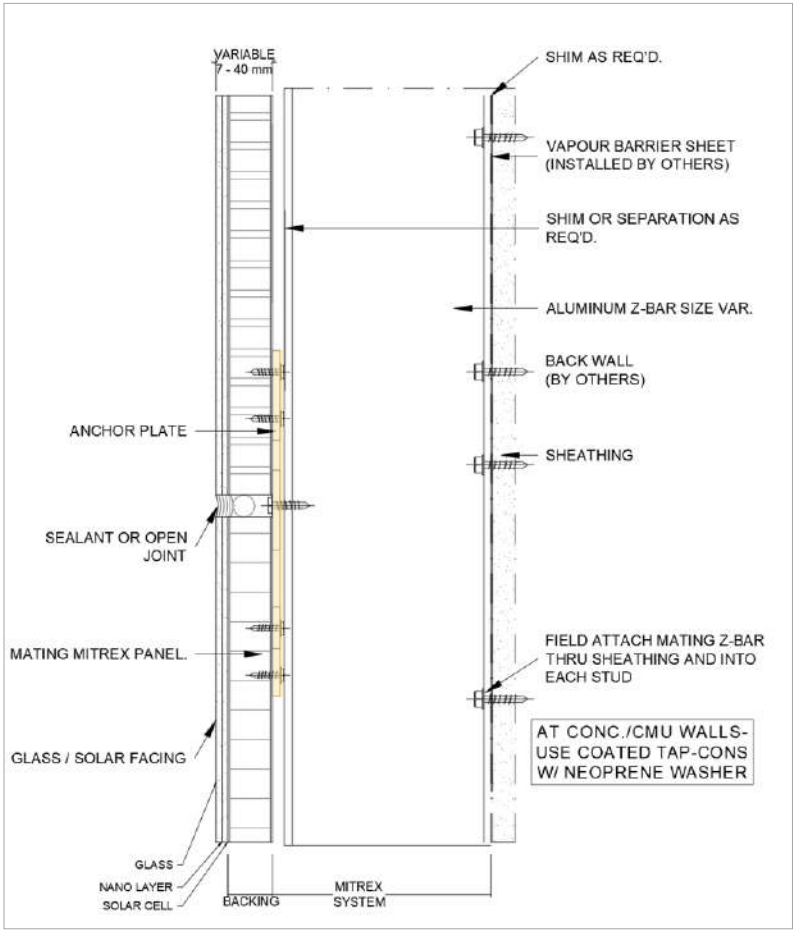


Section

ATTACHMENT SYSTEM | Anchor Plate System

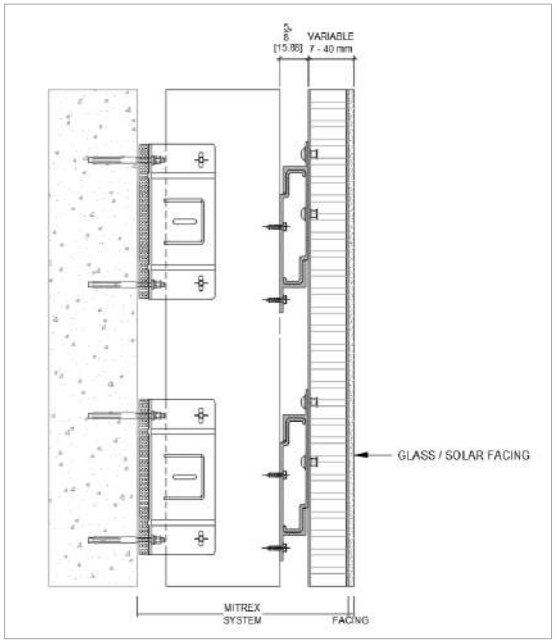


Isometric View



Section

FASTENING SYSTEM | Thermally Broken Bracket Angle



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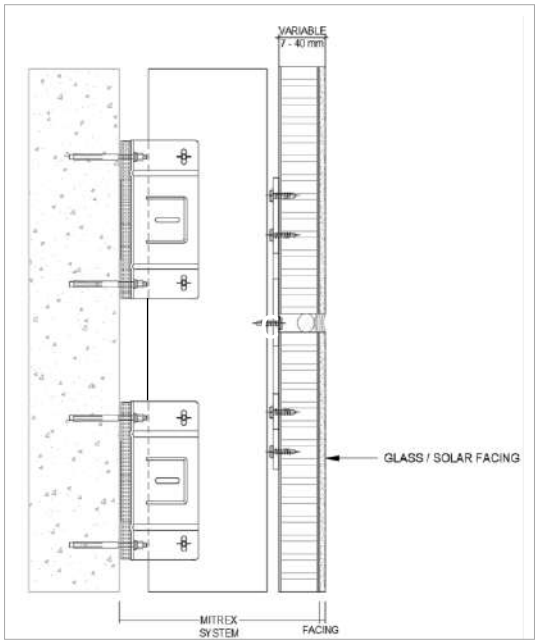

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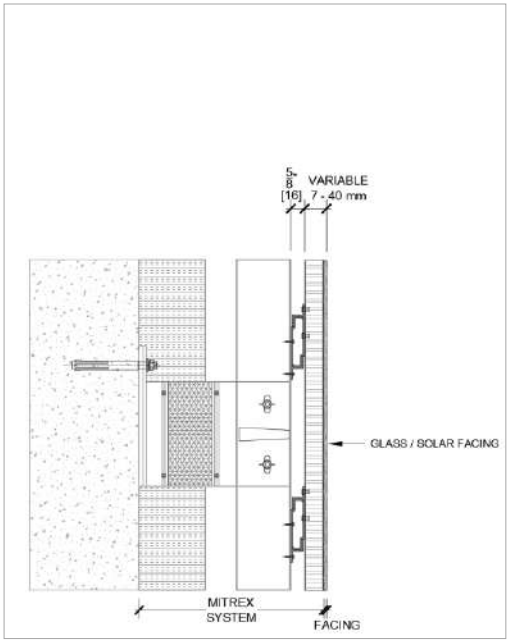

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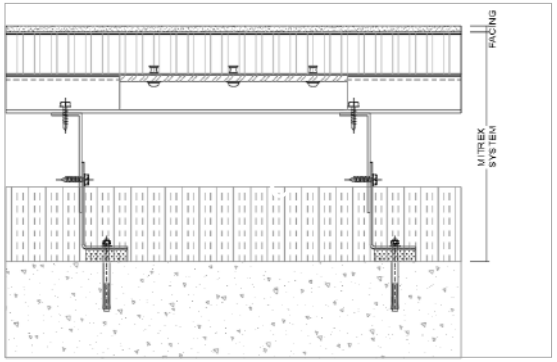
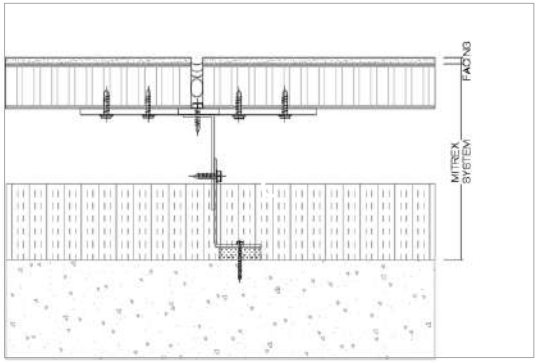


Plan



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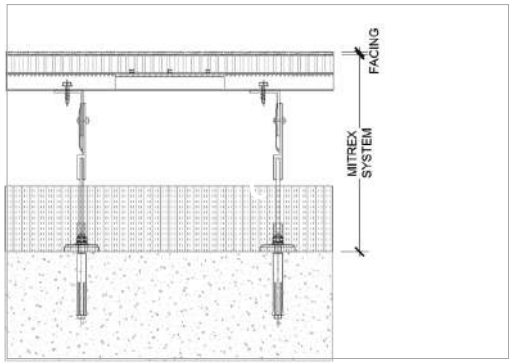

Plan

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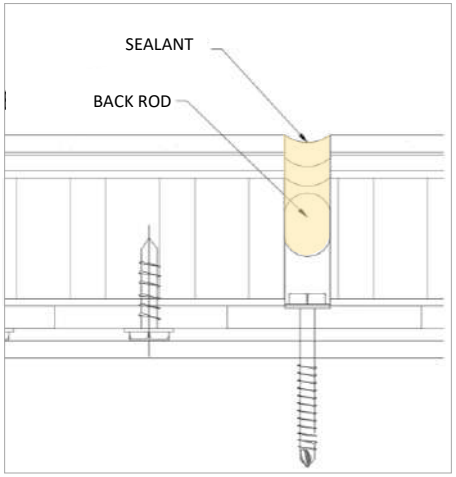
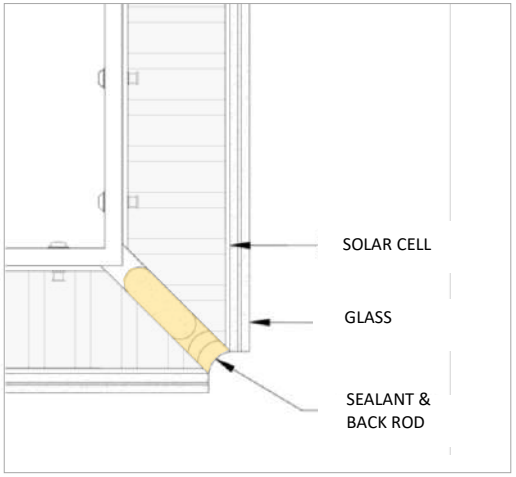
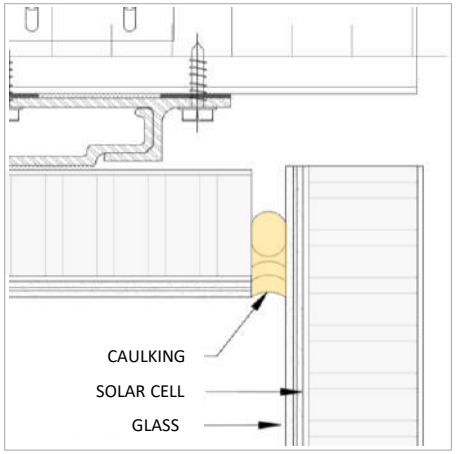
JOINT | Sealant



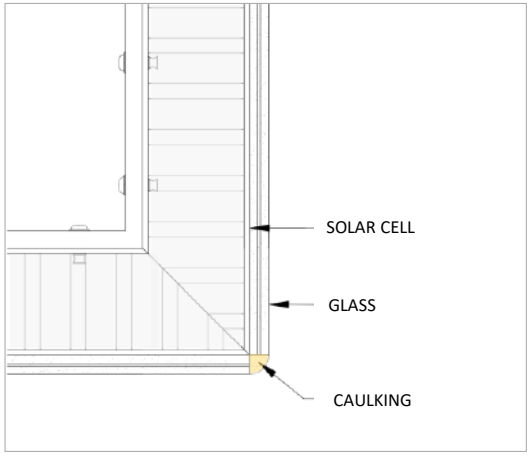
Sealant Face- Face Joint



Mitered Corner Sealant Joint

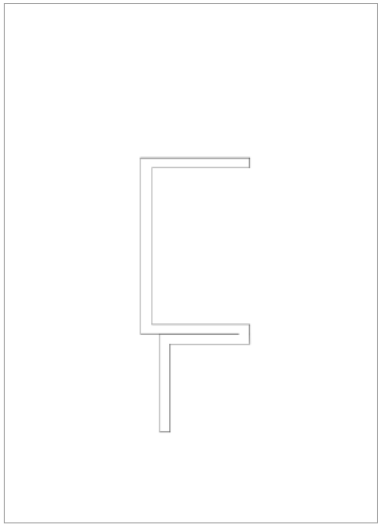


Inner Corner Joint

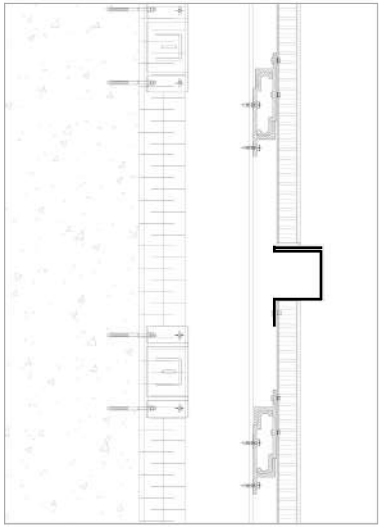


Mitered Corner Joint

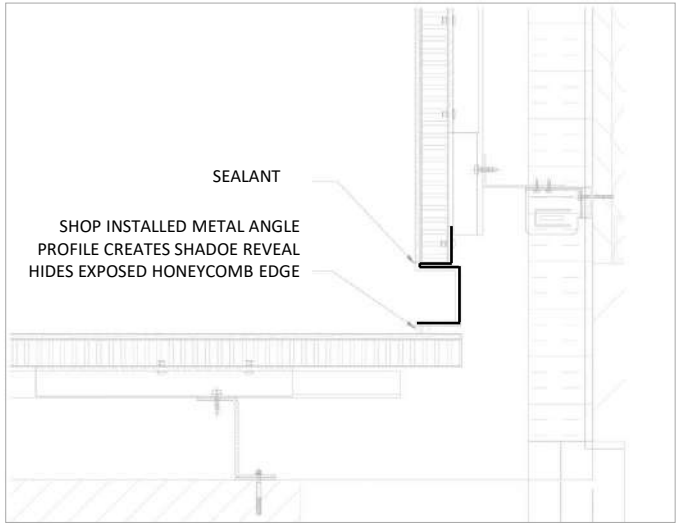
JOINT | Metal Support



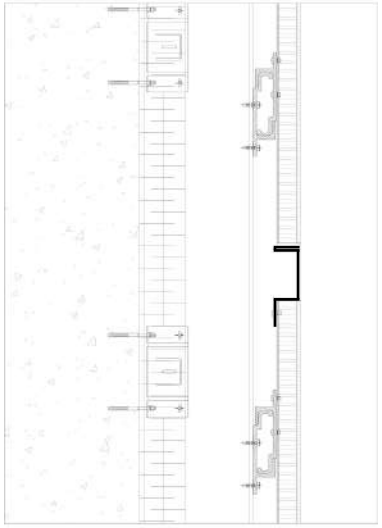
C-Shape Channel



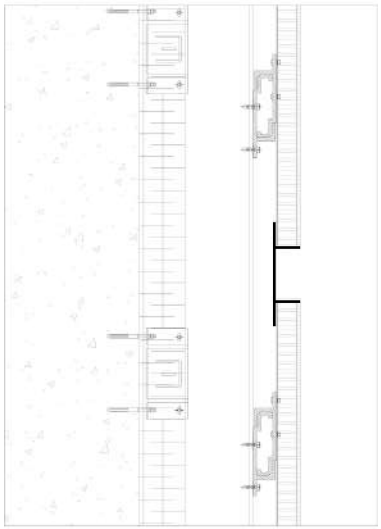
Protruding



Inner Corner



Flush



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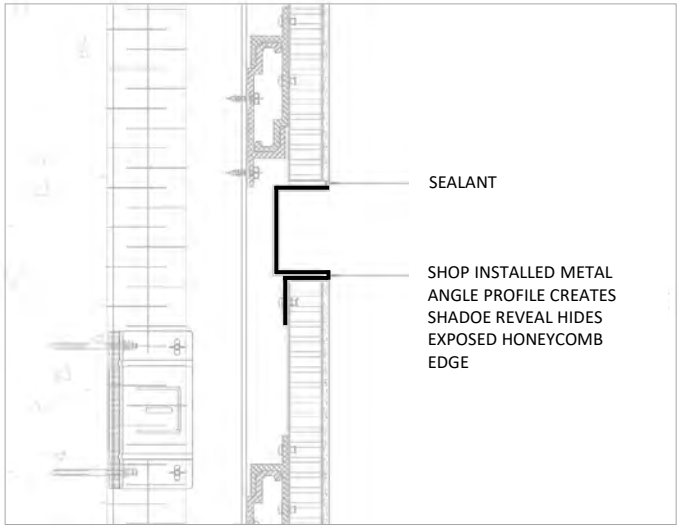

Recessed

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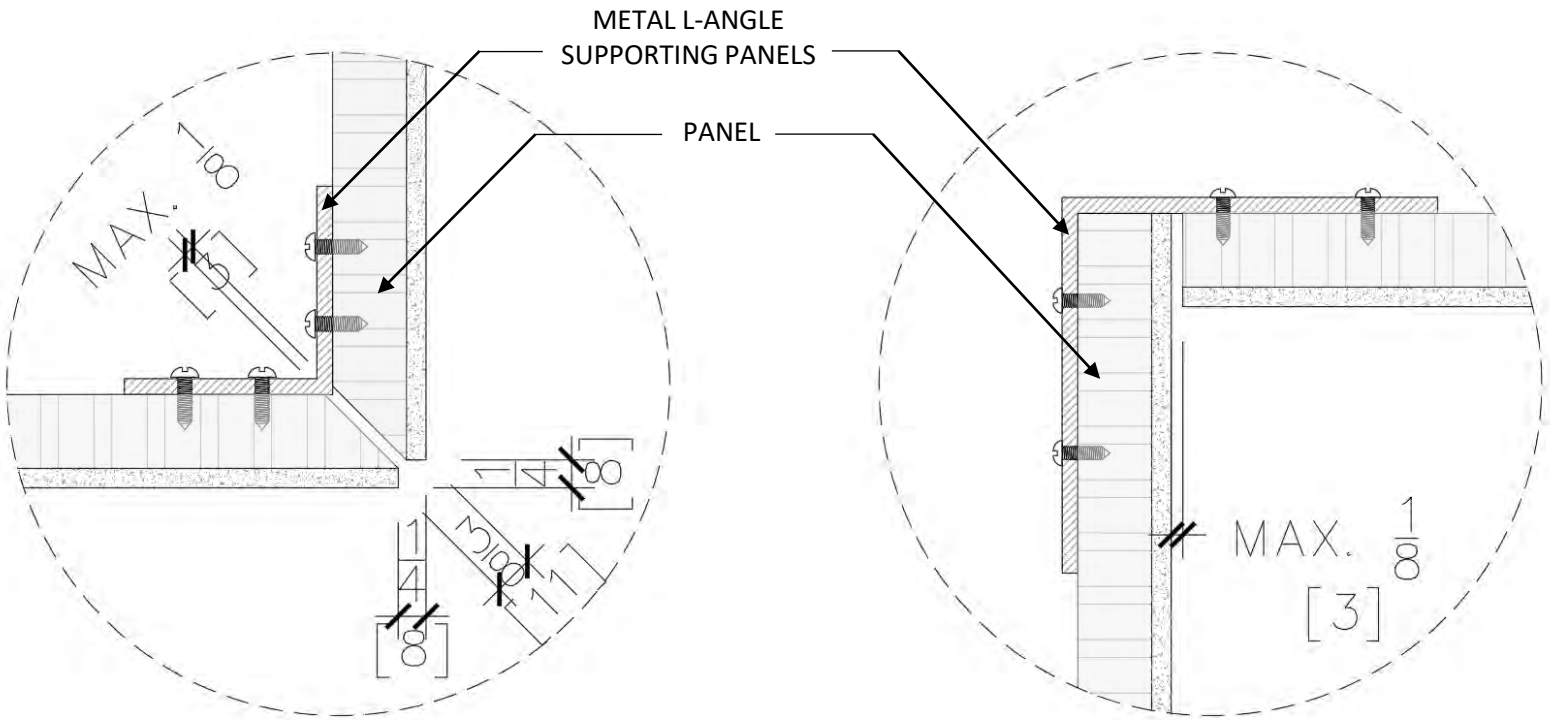
JOINT | Metal Support

Metal L- Angle - 2”x2”/ 4”x4”
Supporting panels with screws as required

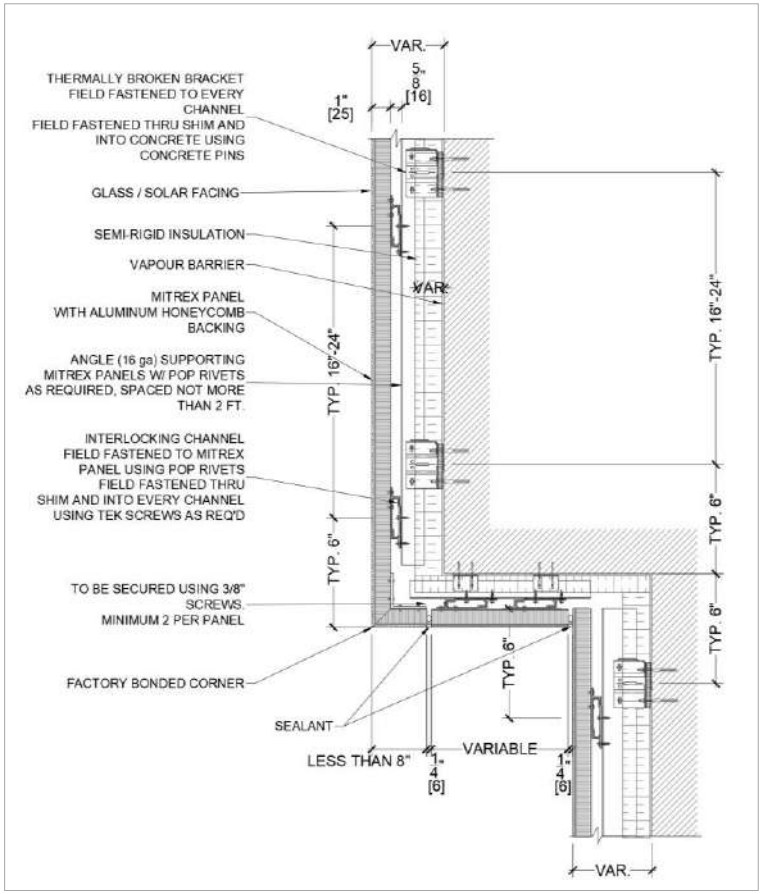


Outer Corner Detail

Inner Corner Detail

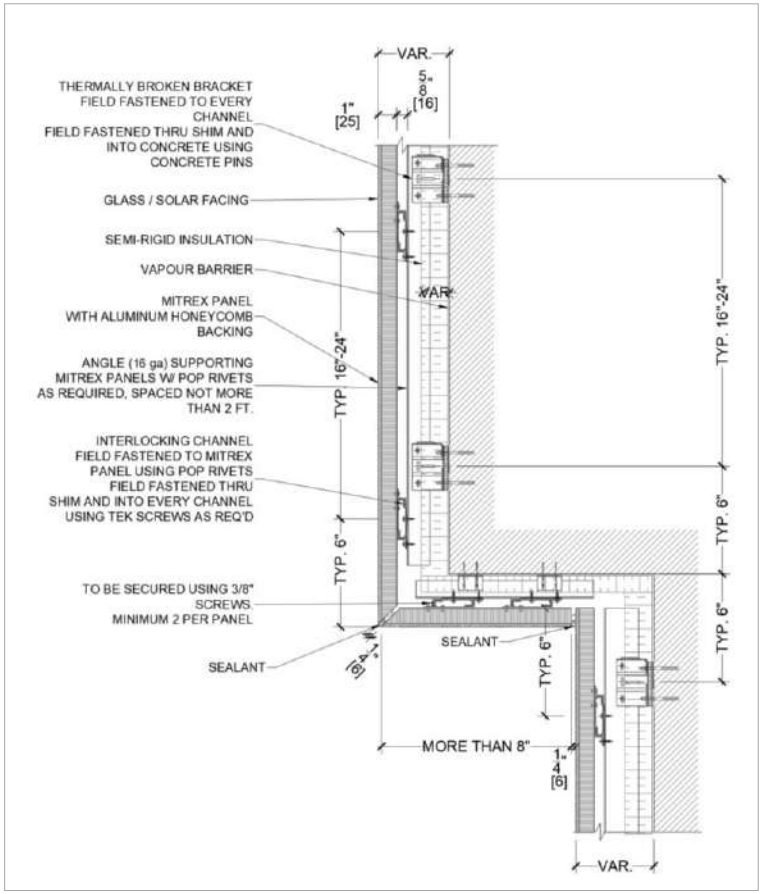
METAL SUPPORT | Details

Corner Return



Miter Joint & Return Panel Width > 8”

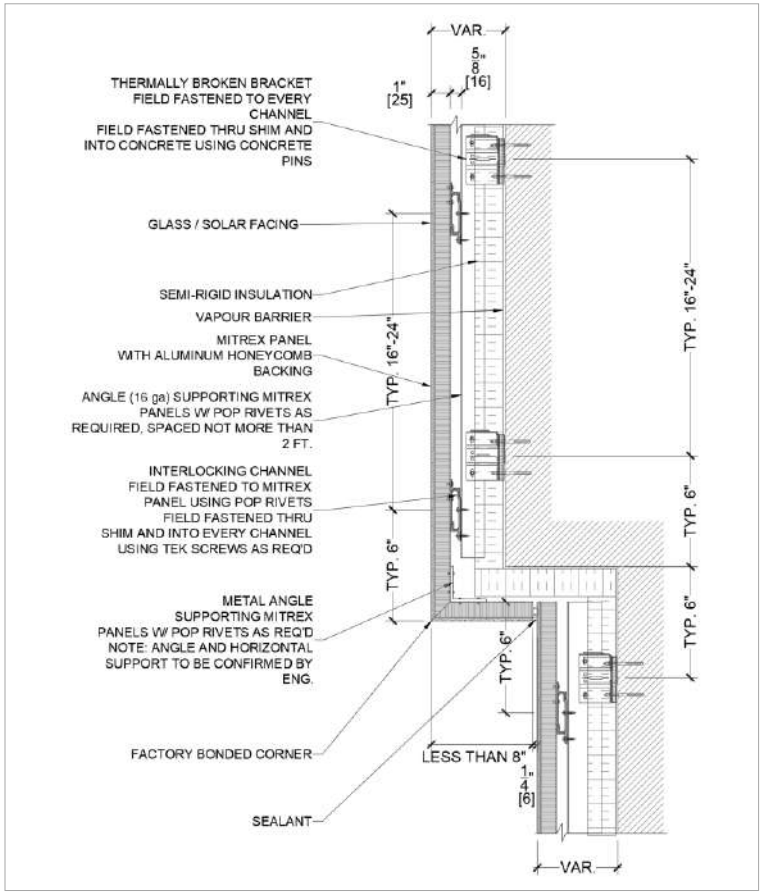
Corner Return



Return Panel Width > 8”

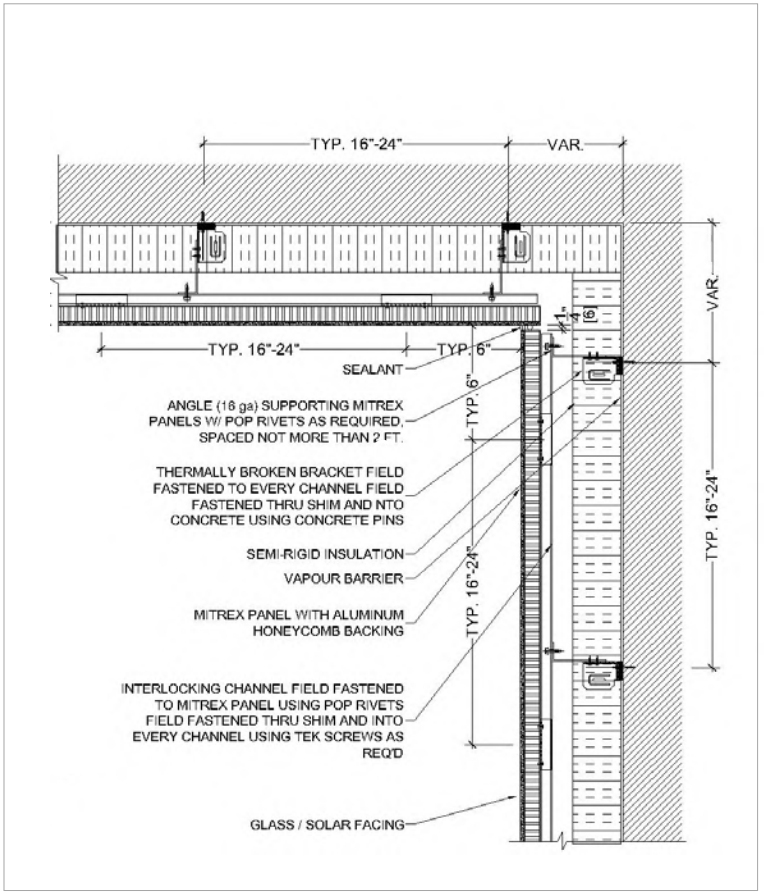
METAL SUPPORT | Details

Corner Return



Miter Joint & Return Panel Width < 8”

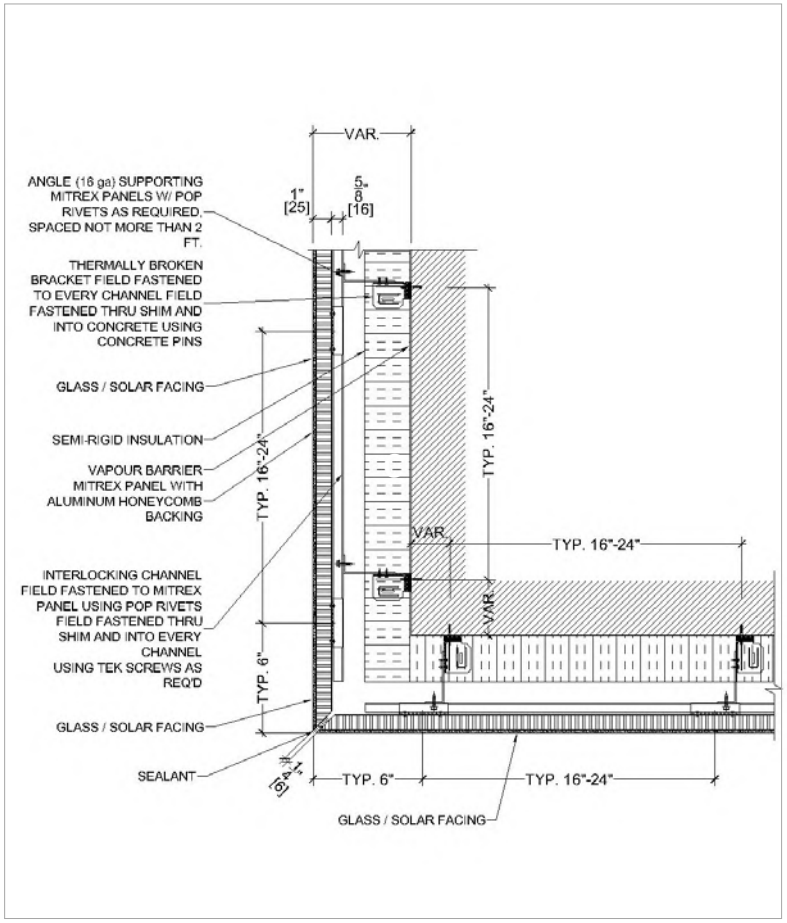
Inner Corner



Inner Corner Detail

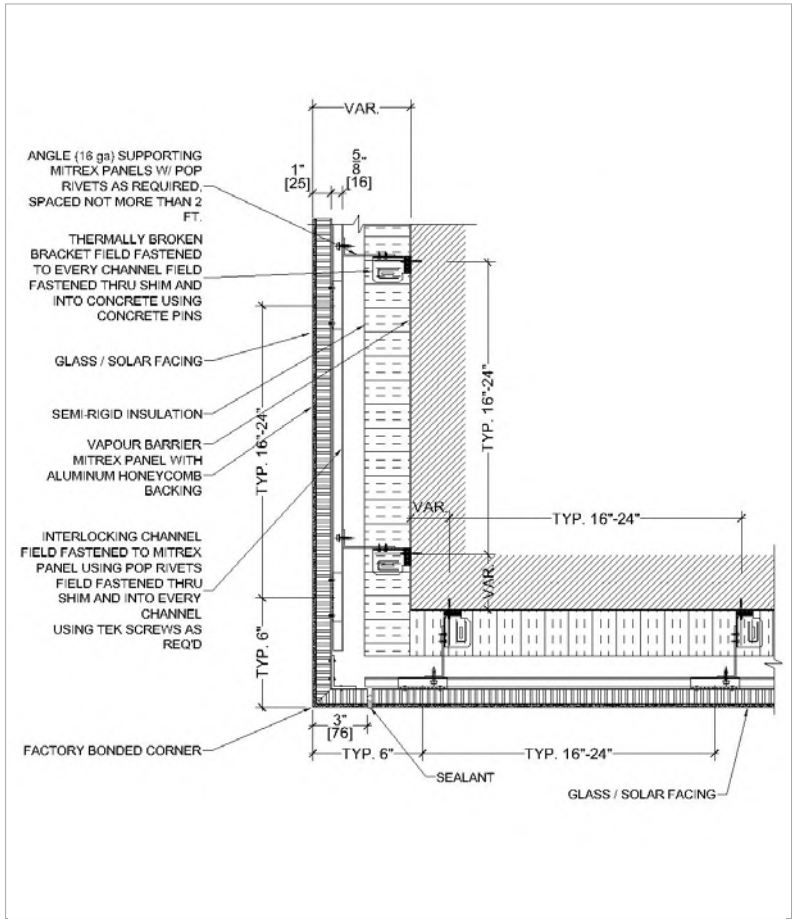
METAL SUPPORT | Details

Outer Corner



Outer Corner- Corner Joint

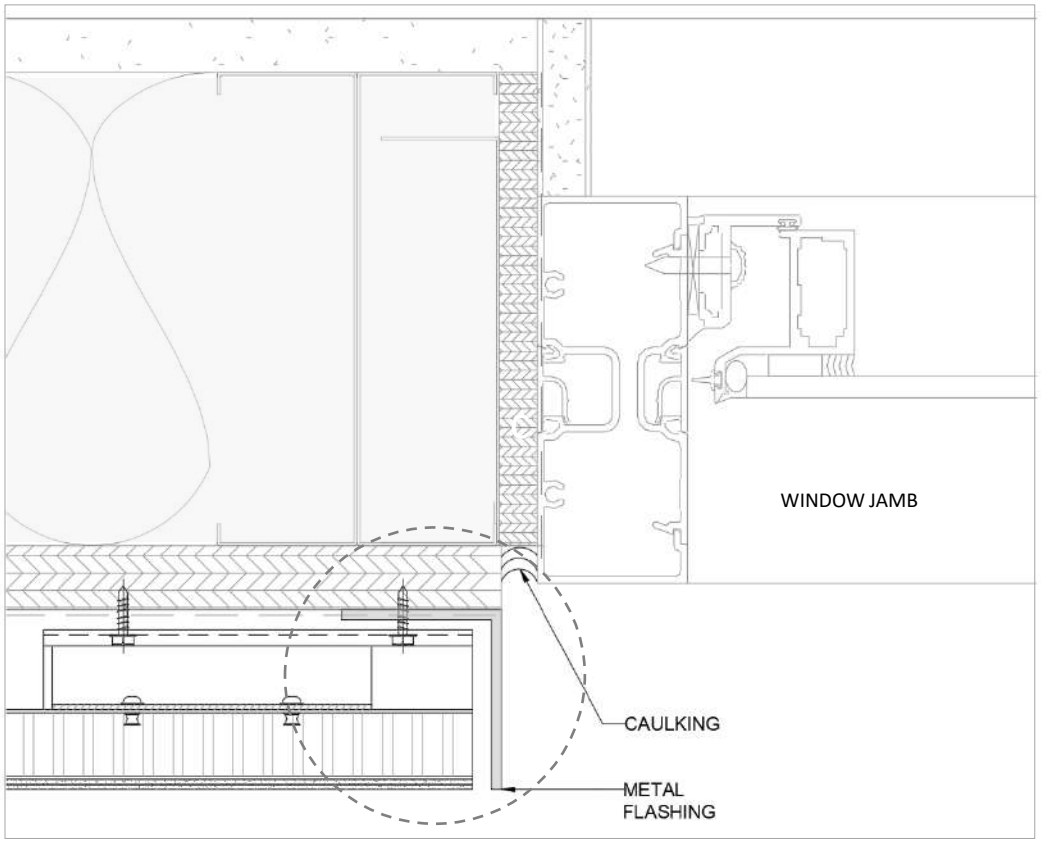
Outer Corner



Outer Corner- Mitered Corner Joint

WINDOW | Flashing Details

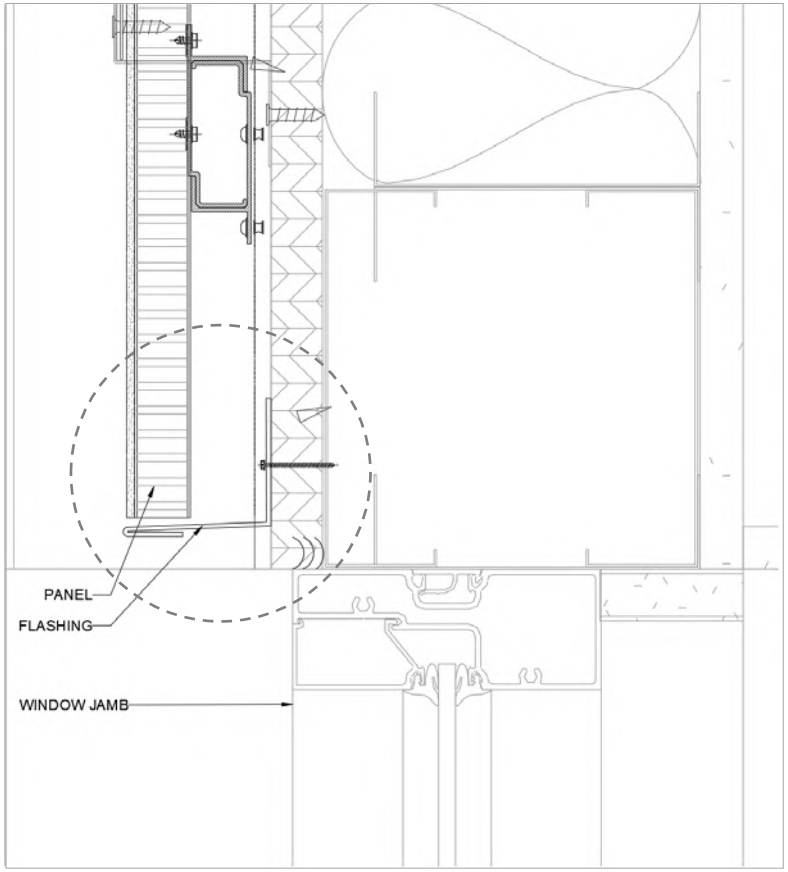
Window Jamb Detail



Window Jamb with Metal Flashing

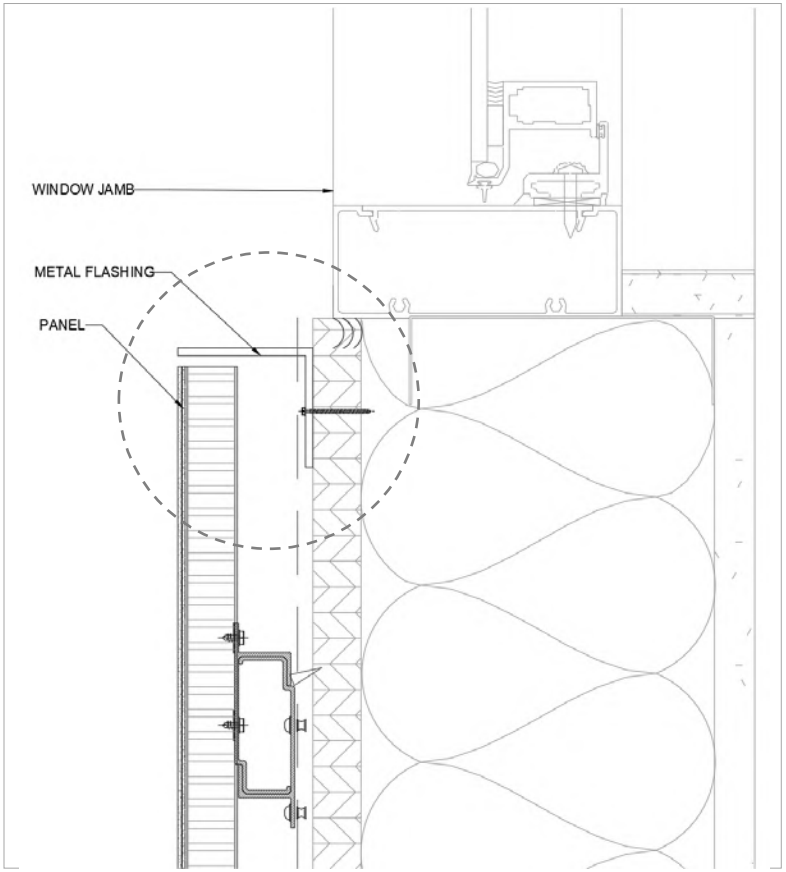
WINDOW | Flashing Details

Window Head Detail



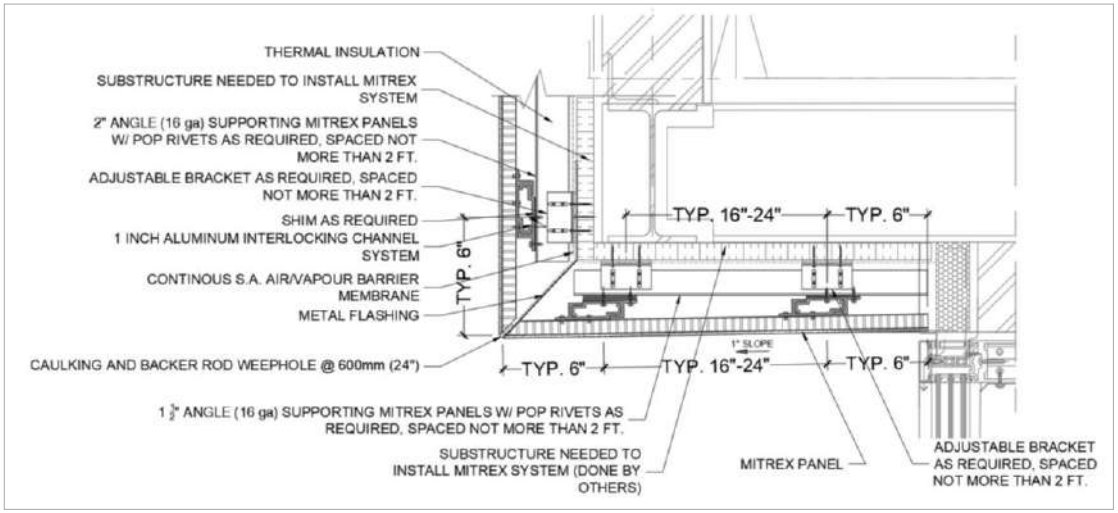
Window Head with Metal Flashing

Window Sill Detail

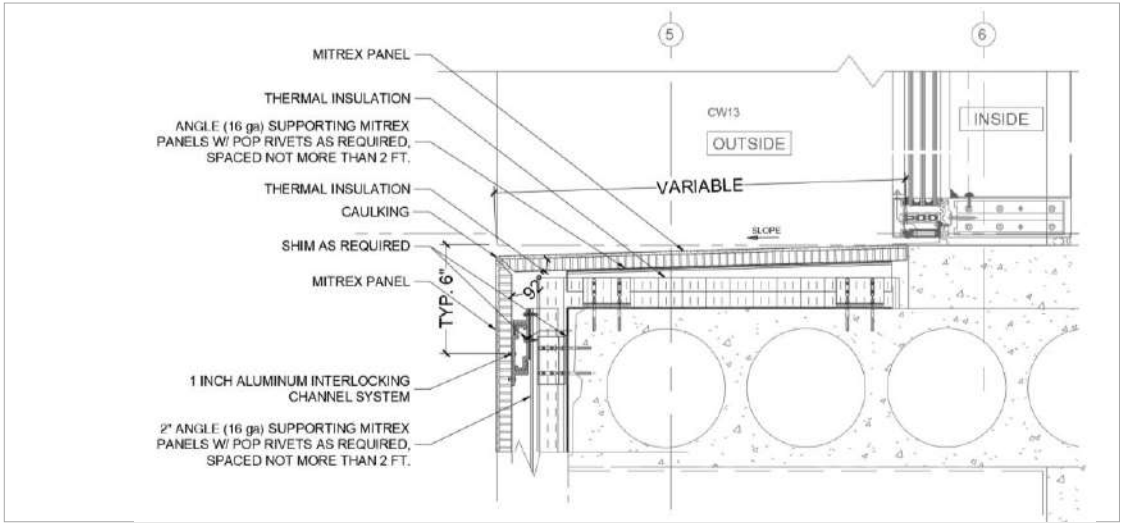


Window Sill with Metal Flashing

WINDOW | Details



Window Lintel Detail



Window Sill Detail

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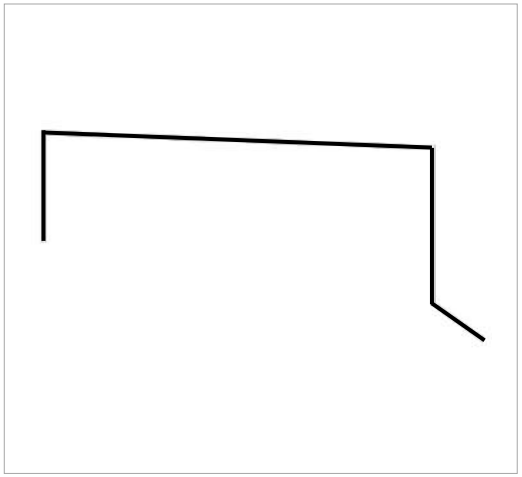
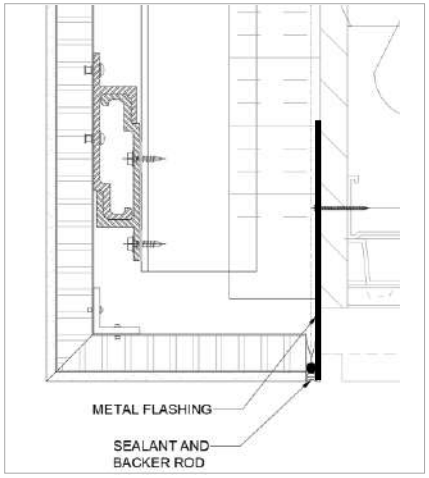
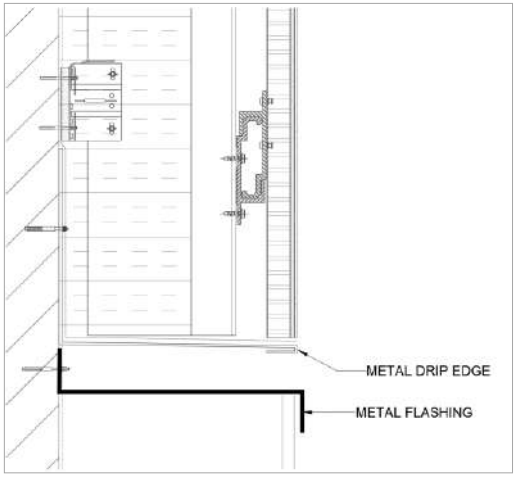
FLASHING | Metal Support



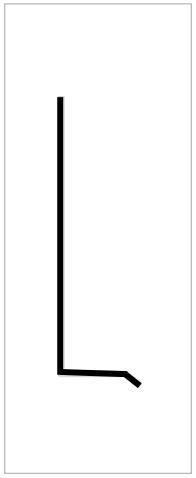
Parapet Flashing



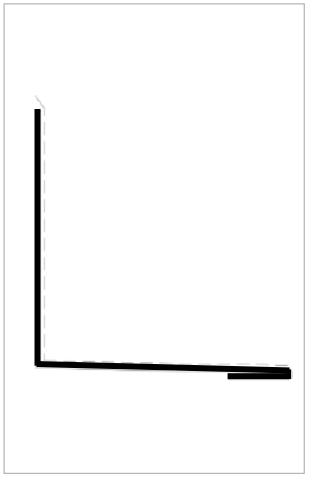
Canopy Base Flashing



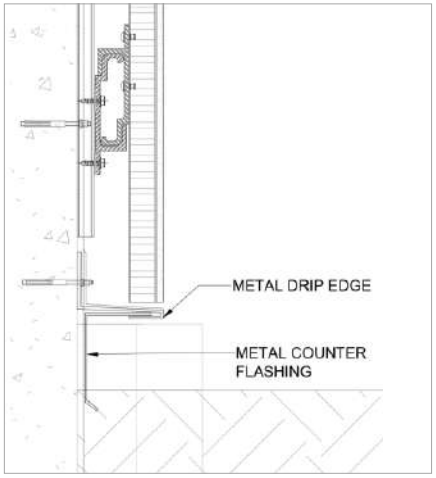
Metal Drip Edge



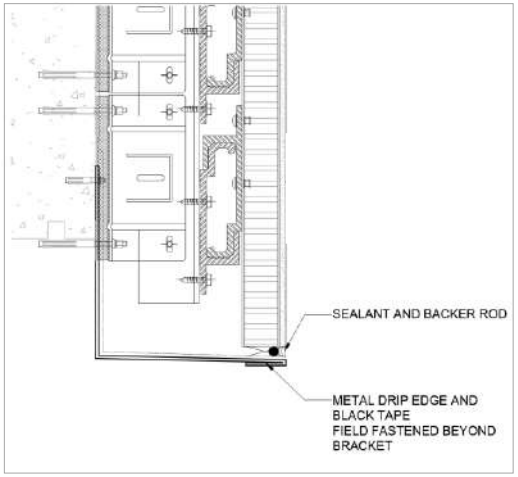
L-Shape Flashing



L- Shape Base Flashing



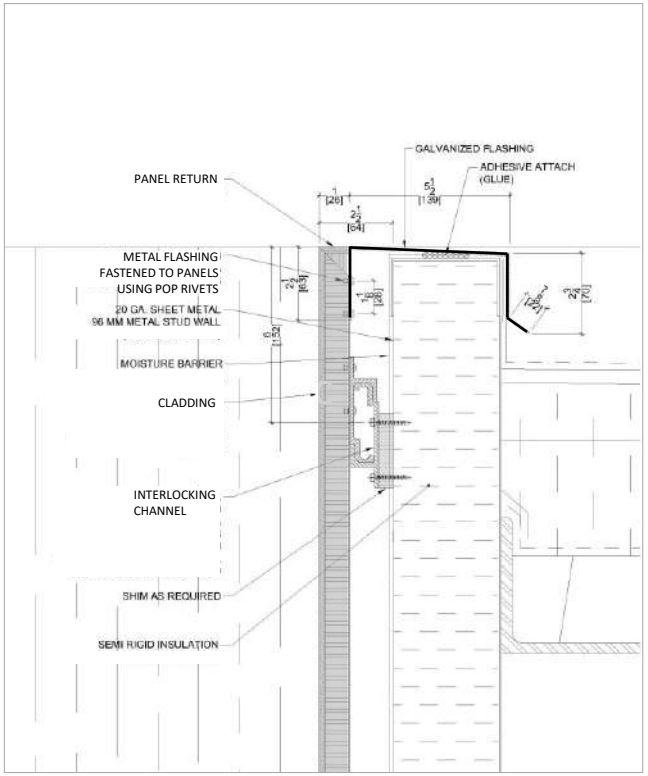
Base Flashing



Base Flashing

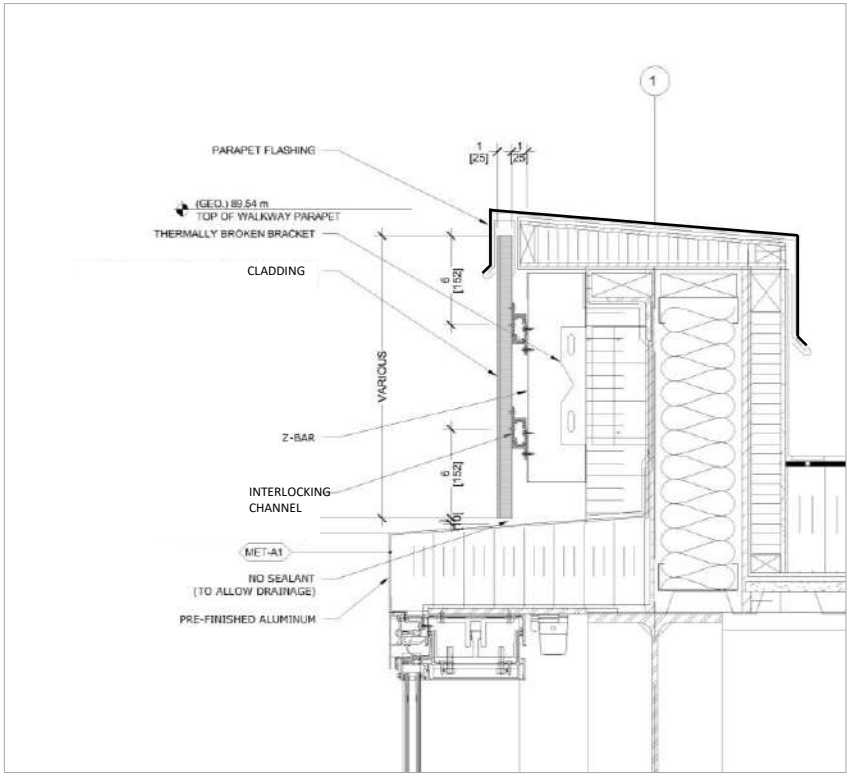
FLASHING | Metal Support

Coping



Metal Flashing – Coping (Behind the Panel)

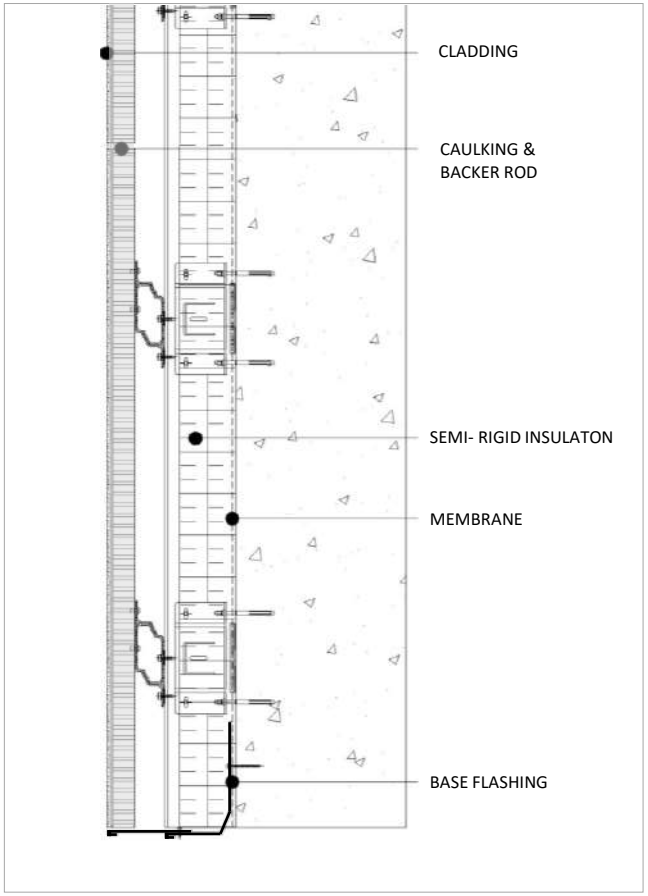
Parapet



Metal Flashing – Parapet (Over the Panel)

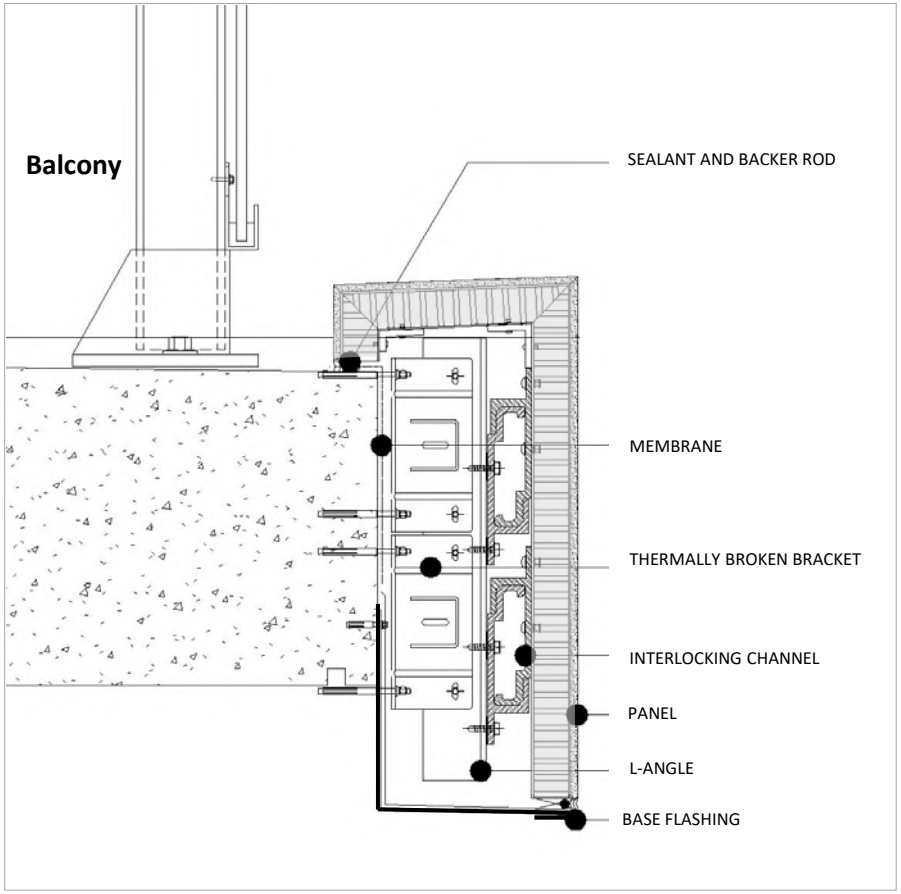
FLASHING | Metal Support

Bottom Flashing



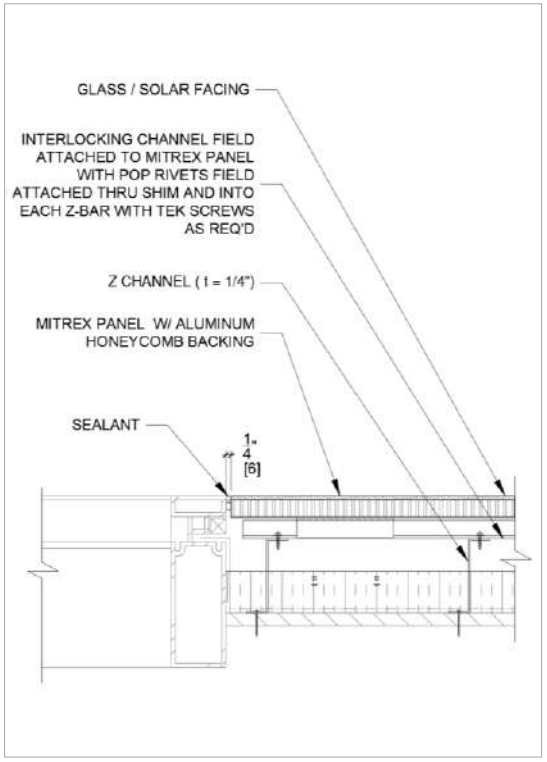
Metal Flashing – Bottom (Adjustable)

Bottom Flashing

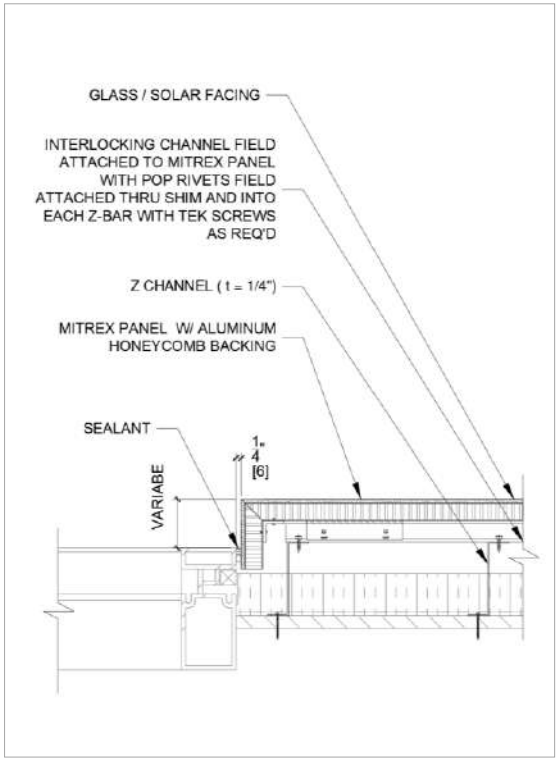


Metal Flashing – Bottom (Non-Adjustable)

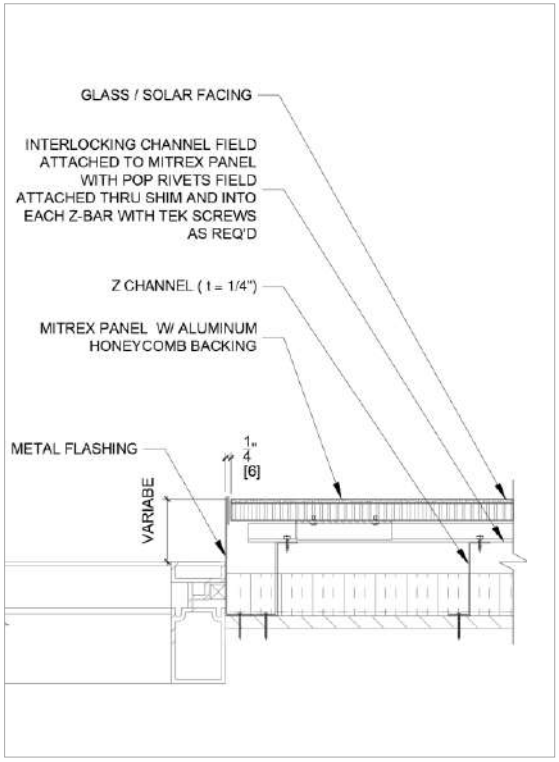
PANEL | Details



Panel Flush with Window

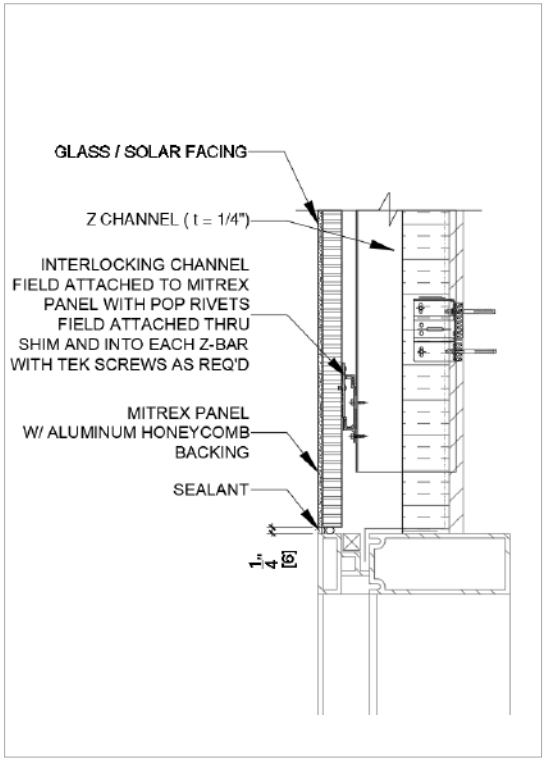


Panel with Return

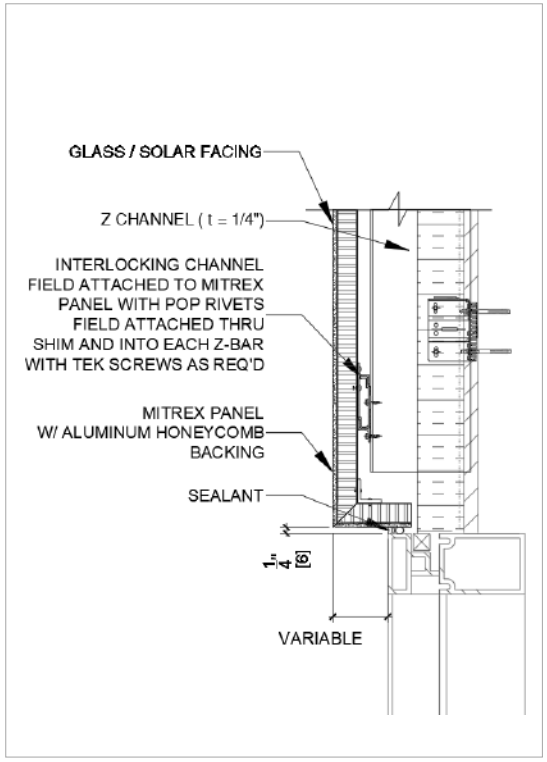


Panel with Metal Flashing

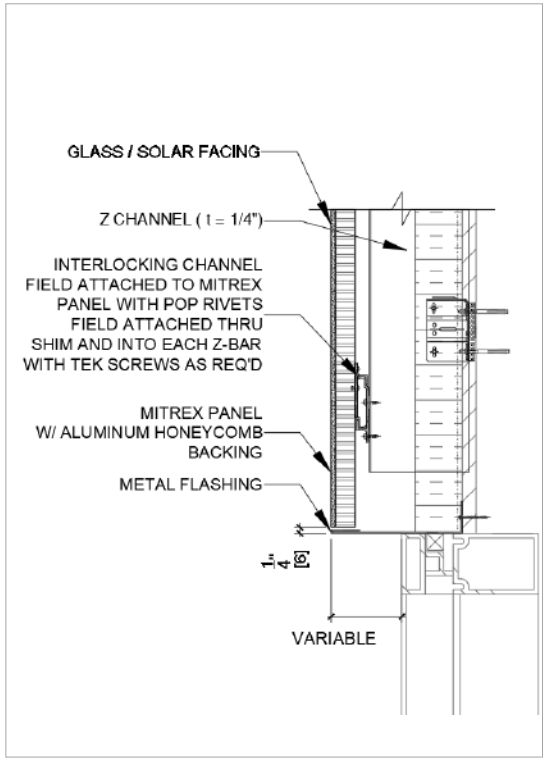
PANEL | Details



Panel Flush with Window

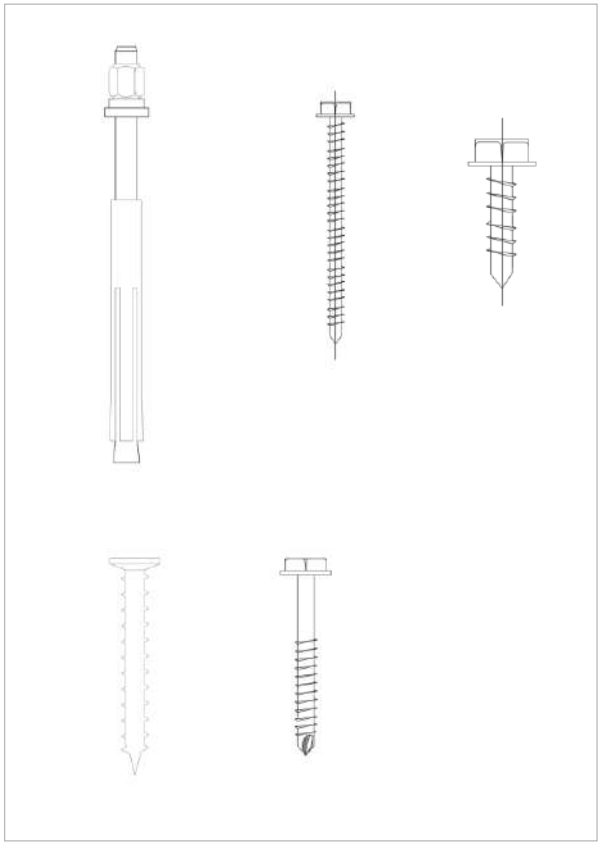


Panel with Return



Panel with Metal Flashing

PANEL | Fasteners



There are a different types of fastener sizes and shapes used in our cladding systems for steel, wood & concrete walls.

Screws:
#6-#8 Hex Head Self-drilling Screws

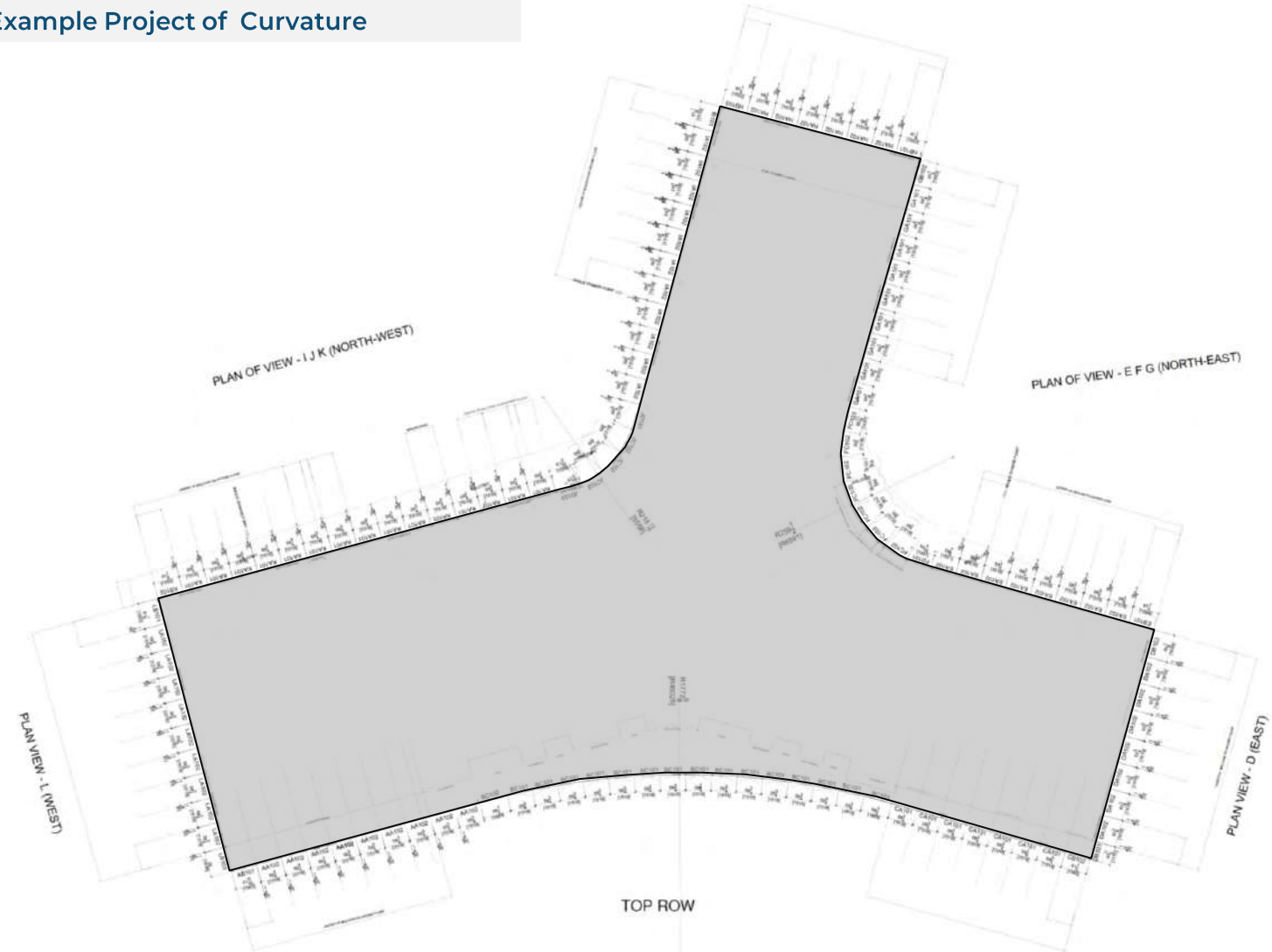
Fasteners
Type A #14-10 x L
Type AB 1/4-14 x L

Washer:
Integral Washer System

Stainless Steel, Corrosion Resistant, and can be used both indoor and outdoors

CURVATURE | Design

Example Project of Curvature

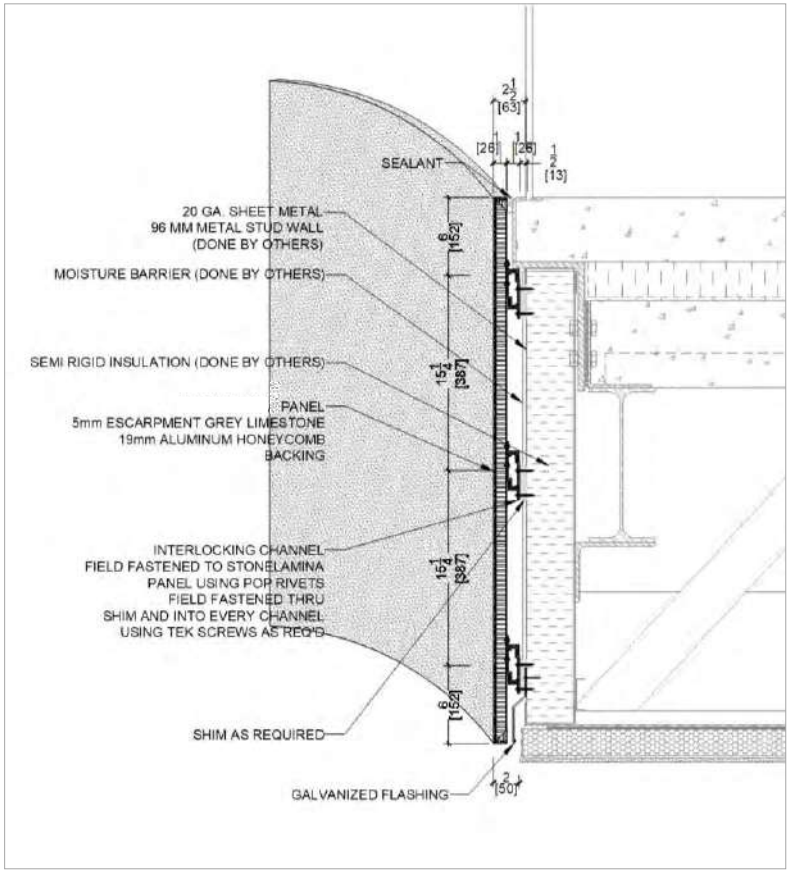


Plan View

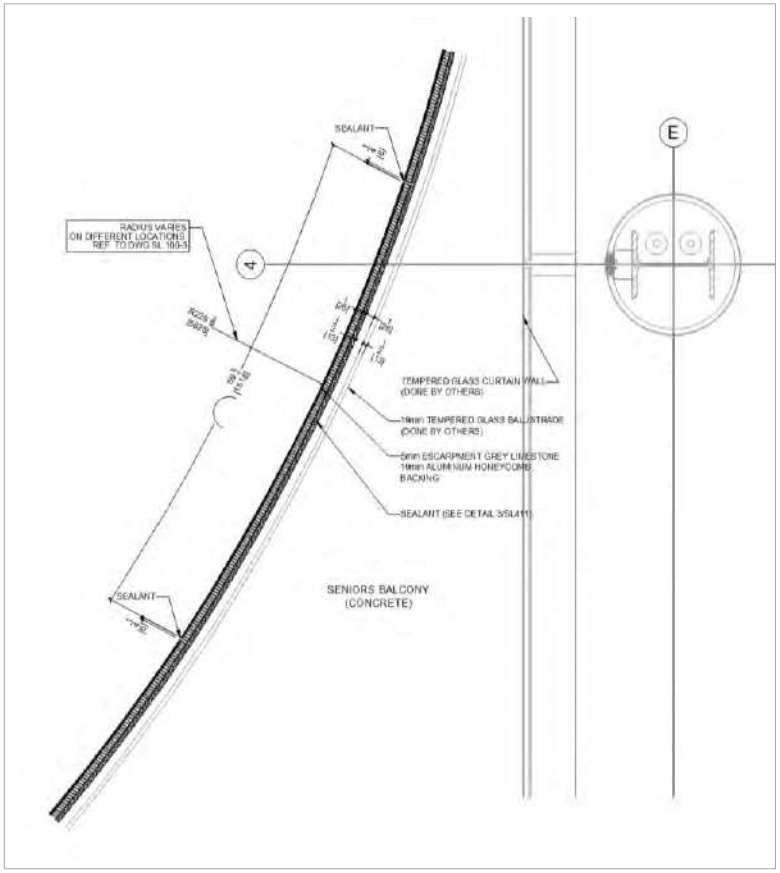
MITREX

CURVATURE | Design

Example: Curved Panel



Concave Panel View

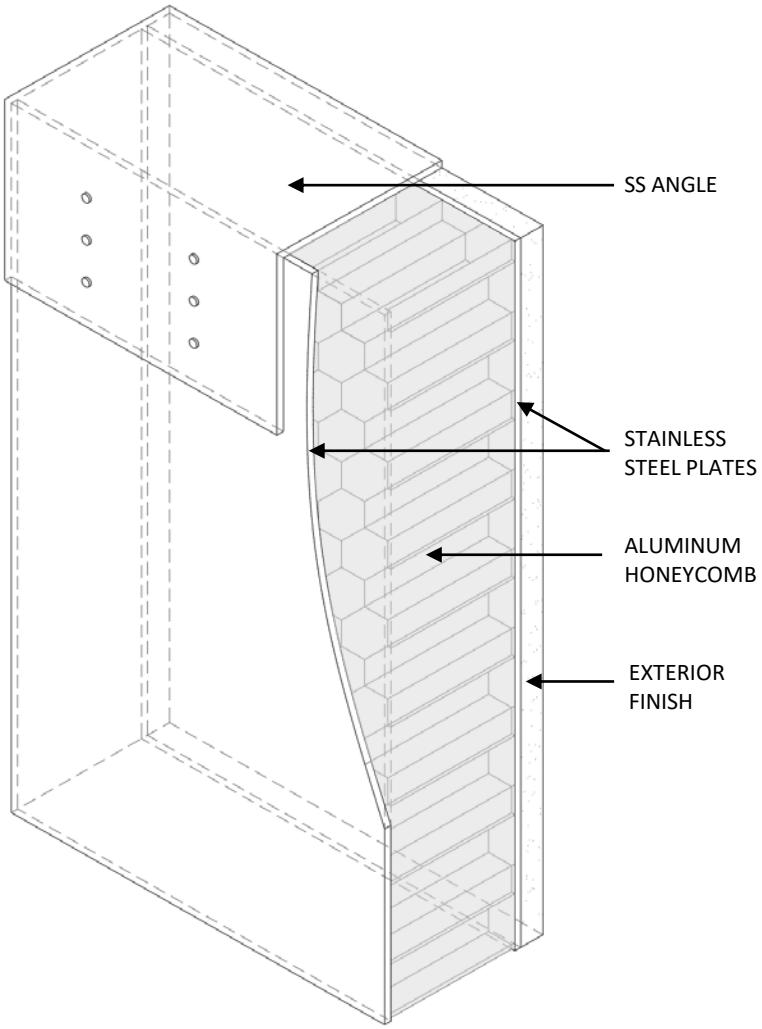


Detailed Plan View

CLADICAST
SYSTEM

MITREX

CLADICAST | General



Why Cladicast Wall Panels?

- Quick installation, rapid construction capability
- Fire and corrosion resistant
- Weather Resistance
- Extremely Durable
- Less maintenance
- Energy-Efficient

Lightweight & Strong

Aluminum honeycomb makes panels lightweight and provides structural strength

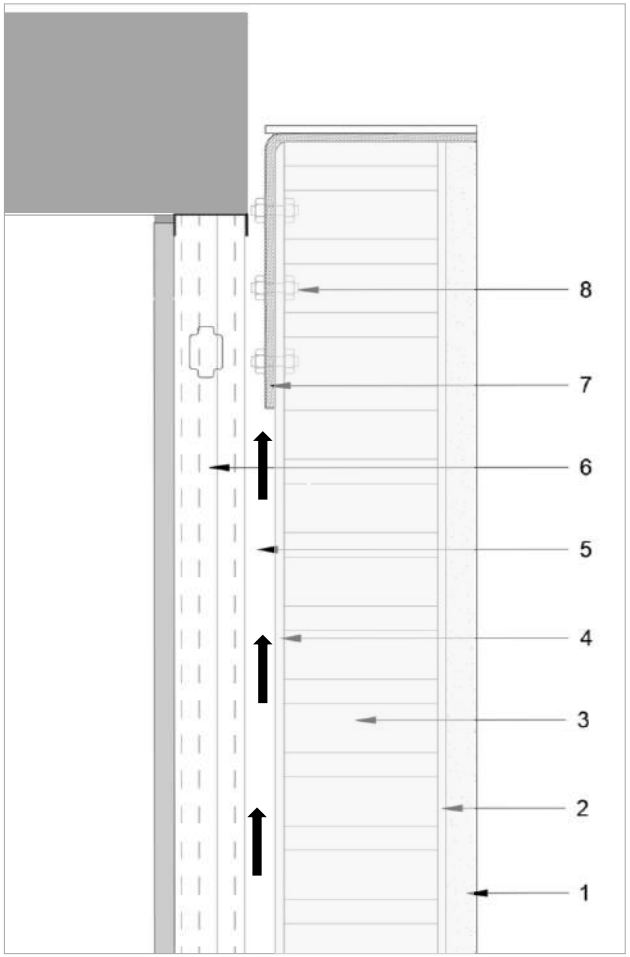
Quality Control

Cladicast panels are produced in a controlled environment which provides a high-quality product.

Flexibility

Cladicast panels are available in a variety of textures and colours, and are easy to install and transport.

CLADICAST | Terminology



Exterior Cladding Finish (1)
Exterior panel finish; Up to 20mm thick.

Panel Backing (2,3,4)
100 mm Aluminum Honeycomb (3) backing, sandwiched between two 3 Gauge Stainless Steel Plates (2,4) and fitted with Vapor/Air Barrier and Tape sealed joints, edges, and corners.

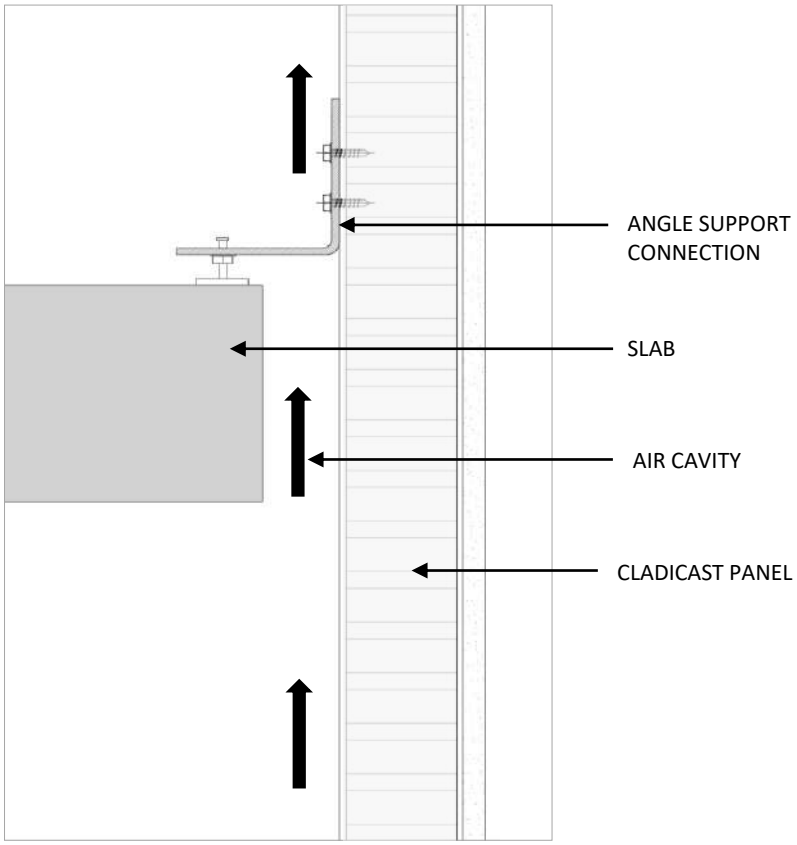
Air Cavity (5)
1" Air Cavity at the back of Panel.

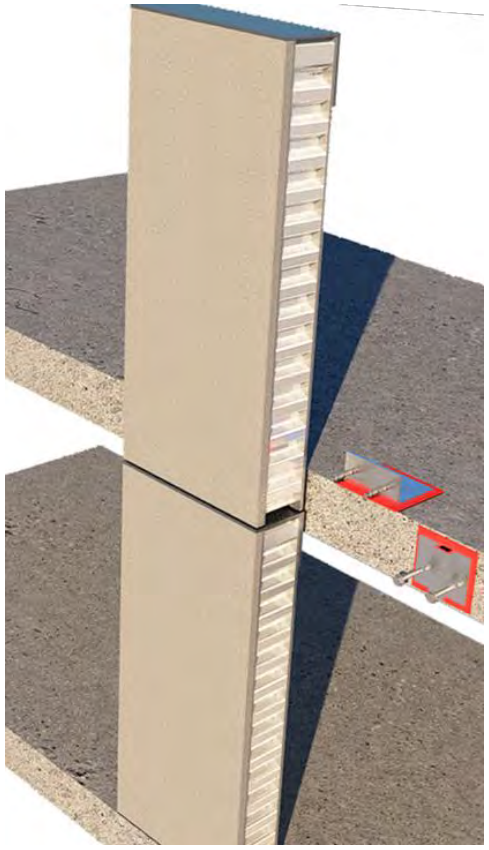
Interior Wall Layers (6)
Dry wall and studs.

L- Angle (7)
3 Gauge Stainless Steel Hot Rolled Laser Angle.

Structural Bolts (8)

CLADICAST | Design





Cladicast Panel System