DISCLAIMER

This guide is intended to be used in conjunction with the project’s installation drawings. The installation drawings should identify the applicable wall conditions, specify the components and the required arrangement of the components. Specific building design and construction conditions may require variations from the information in this guide.

MBCI does not guarantee and is not liable for the quality of installation. MBCI is not responsible for defects that may be attributed to improper installation, the negligence of other parties, or for materials not provided by MBCI.

All safety procedures including but not limited to fall protection and material handling are the exclusive responsibility of the installing contractor.

Unless specified in writing, MBCI makes no expressed or implied warranties pertaining to the fitness of the wall panels or its components for any particular purpose, and shall not be responsible for any indirect or consequential damages, such as to building contents, nor for any further loss of any kind to the owner or contractor.

MBCI does not warrant any product or material as meeting the ordinances, laws or regulations of any particular state or local municipality, and MBCI is not responsible for conformance by the owner or contractor to such ordinances, laws or regulations.
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</table>
Safety

In the USA, the Occupational Safety and Health Act (OSHA) governs regulations with the objective of protecting workers from injury or accident. “Part 1926, Safety and Health Regulations for Construction” are applicable to the wall installation.

In Canada, Occupational Safety and Health (OSH) regulation is under the jurisdiction of the local provinces and territories. Federal employees and Crown agencies may be subject to federal OSH jurisdiction.

The OSHA and OSH regulations should be recognized as job site requirements and fully complied with. Safe installation practices may be further defined and made mandatory by state or local ordinances.

All safety procedures are the responsibility of the panel installation contractor. If the installer determines that they cannot safely install the panels in accordance with the installation drawings or this guide, it is their responsibility to determine appropriate alternative procedures.

Owner’s Responsibilities

“Owner” as used throughout this guide refers to the project’s owner and/or his representatives, such as the project’s architect, design engineer and general contractor. These parties are responsible for determining the following:

- Selection of a competent installer who is qualified and experienced in the proper installation of insulated metal panels and related construction.
- Installer has reviewed and understands the project’s installation drawings and this guide prior to installation.
- Panels and related components are installed in accordance with the project’s installation drawings and the applicable portions of this guide.
- Panels are suitable for the purpose intended.
- Project’s structural framing is properly designed and in satisfactory condition to accept the erection and design loads imposed by the wall panels.
- Location of interior and/or exterior panel joint and perimeter seals are properly specified for the project’s moisture and vapor control requirements.
- Panels and related components are installed in compliance with the applicable codes, regulations, service conditions and good engineering and construction practices.

Installation Drawings

Installation drawings (also known as shop drawings) are usually prepared by the installation contractor, MBCI or some other party depending on preferences or contractual requirements.

Installation drawings must be “approved” by the project architect before they are to be used for construction. It is critical that the “approved installation drawings” are in agreement with the final architectural and structural drawings as well as all addenda.

Approved installation drawings (labelled “for construction” or “for production”) must be available at the job site during the preparation, installation and inspection of the wall support framing, wall panels, flashings and other related construction.

The installation drawings must be reviewed for differences with field conditions, and discrepancies should be resolved before proceeding with panel installation.

In case of conflict between this guide and “for construction/for production” installation drawings, the drawings govern.
CF Series - Vertical

PANEL PROFILES

Mesa
Light Mesa
Fluted
7.2 Insul-Rib
Santa Fe
Tuff-Cast
PANEL PROFILES

CF Series - Vertical

Tuff Wall

Striated

Partition
(interior use only)

HPCI

Architectural

SEE www.mbcicom FOR CURRENT INFORMATION
SUBJECT TO CHANGE WITHOUT NOTICE
CF Series - Vertical

PANEL PROFILES

Architectural
2" - 4"
24", 30", 36"

7.2 Insul-Rib
2.5" - 6"
36"

Mesa
2" - 6"
30", 36", 42"

Light Mesa
2" - 6**
30", 36", 42"
*5" and 6" interior use only

Fluted
2" - 6"
42"

Striated
2" - 4"
24", 30", 36", 42"

Santa Fe
2" - 4"
24", 30", 36", 42"

Tuff-Cast, Tuff Wall
2" - 6***
36", 42"
**5" and 6" require Mesa profile on both faces

HPCI
2" - 6"
42"

Partition
2" - 6"
44.5"
CF Series - Vertical

FRAMING ALIGNMENT

3.1 Framing alignment should be checked *before* panels are delivered to site.

3.2 Compare structural and panel shop drawings to ensure wall supports are in correct location. Field measure support spacing and overall building dimensions.

**WARNING: RESOLVE ALL DIMENSIONAL DIFFERENCES WITH SHOP DRAWINGS BEFORE PANEL INSTALLATION BEGINS!**

3.3 If base support is installed, verify it is aligned with slab edge/notch.

3.4. Check alignment at mid-span and column lines with a laser or plumb bob from the top wall support to the base support or slab edge.

3.5 Check support alignment against these tolerances for vertical panel installation:

- < 8’ spacing: +1/8”, -0”
- ≥ 8’ spacing: +1/4”, -0”

(Architectural flat panels: < 4’ spacing: +1/16”, -0”)

3.6 All supports not in alignment must be corrected by the responsible party *before* panel installation begins.

**WARNING: IMPROPER FRAMING ALIGNMENT CAN CAUSE DIFFICULTY WITH PANEL ENGAGEMENT AND RIPPLING OR BUCKLING OF THE PANEL FACES.**

Outward alignment within tolerances = acceptable

Inward alignment = not acceptable

---

CFV--6          REV 00.01                             SEE www.mbcicom FOR CURRENT INFORMATION                  SUBJECT TO CHANGE WITHOUT NOTICE
4.1 Proper offloading equipment must be on site prior to arrival of panels and accessories. All bundles and crates are packaged for side unloading by forklift or by crane. Maximum bundle weight is 5,000 lbs.

4.2 Check all materials immediately upon arrival for freight damage. Inspect for strap damage, forklift damage or packaging/bundle wrap damage.

4.3 Verify that the order number, quantities and descriptions of all bundles, crates and pallets on the packing slip match those on the truck.

4.4 List all visible damages and/or shortages on the bill of lading, obtain the signature of the truck driver and an authorized representative of the MBCI customer.

4.5 Keep a copy of the marked-up bill of lading and send it with digital photos of the damage to MBCI Customer Relations.

4.6 Concealed damages/shortages must be reported to MBCI within 15 days of delivery.
5. MATERIAL HANDLING - Bundles

Forklifs

5.1 Identify and mark off unloading area prior to material delivery.

5.2 Verify adequate material handling equipment with the proper reach and capacity is on site. Bundle weights are listed on the bill of lading, and have a maximum weight of 5,000 lbs.

5.3 Pre-determine the panel storage area prior to material delivery. It must be secure, flat, well-drained and reasonably level.

5.4 Panels are shipped via flatbed trailer, and can be off-loaded from the side of the trailer using forklifts.

5.5 Guidelines for off-loading are as follows:

<table>
<thead>
<tr>
<th>Panel thickness</th>
<th>Bundle length</th>
<th>Guidelines</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-2.75&quot; thick</td>
<td>&lt;36' = 1 forklift</td>
<td>≥36' = 2 forklifts</td>
</tr>
<tr>
<td>3&quot; thick</td>
<td>&lt;40' = 1 forklift</td>
<td>≥40' = 2 forklifts</td>
</tr>
<tr>
<td>4-6&quot; thick</td>
<td>&lt;48' = 1 forklift</td>
<td>≥48' = 2 forklifts</td>
</tr>
</tbody>
</table>

5.6 Tape foam blocks on forks to prevent over-engagement of panel bundles.

WARNING: USE PADDING OR BLOCKING ON FORKLIFT MASTS TO PROTECT PANEL EDGES AND PREVENT OVERENGAGEMENT INTO ADJACENT BUNDLES!
5. MATERIAL HANDLING - Bundles

Forklifts

5.7 Forklift blades must be level and centered under the weight of the bundle.

5.8 Longer bundles are pre-marked with two lift points at the factory. Each forklift should straddle one lift point (see figure 5.8)

5.9 Inspect travel route to make sure path is reasonably level, compacted and free of ruts. Move bundles into position as required for efficient installation.

5.10 Secure open bundles with straps before moving with forklifts. Spread forks as far as possible and center under the load. Use caution to prevent excessive bending as damage to panels may result. Avoid bumpy terrain.

WARNING: USE EXTREME CARE WHEN MOVING OPEN BUNDLES, ESPECIALLY THOSE WITH 2-3 INCH PANELS LONGER THAN 20’.

WARNING: WHEN RELOADING BUNDLES, MAKE SURE THE END MARKED “BACK” FACES THE BACK OF THE TRAILER. USE DUCT TAPE TO REPAIR TEARS IN THE BUNDLE WRAP.
5. MATERIAL HANDLING - Bundles

**Lifting by crane**

5.11 Use wood spreaders (1.5” minimum thickness, width as required for straps) on top and bottom of bundles *at all pick points*.

5.12 Place foam blocks on sides of bundles at all sling locations as shown in figure 5.12.

5.13 Bundles *under 4,000 lbs. and less than 44’* may be lifted as shown in figure 5.12.
5. MATERIAL HANDLING - Bundles

Lifting by crane

5.14 Bundles over *4,000 lbs. and less than 44'* may be lifted as shown in figure 5.14

5.15 Bundles over *4,000 lbs. and/or over 44'* may be lifted as shown in figure 5.15
5. MATERIAL HANDLING – Individual Panels

Manual Lifting

5.16 Lift panels from here... NOT from here...

5.17 Rotate panels onto the leading edge (side with clip shelf) before carrying. Use foam blocks (from bundles) to prevent panel edge damage.

WARNING: TO AVOID SCRATCHING, DO NOT SLIDE PANELS OFF BUNDLES – ALWAYS LIFT THEM.

5.18 Carry panels on edge with sufficient manpower to prevent straining.
5. MATERIAL HANDLING - Individual Panels

**Clamping Devices (not by MBCI)**

5.19 Verify clamping device is securely attached to panels and of sufficient capacity for panel lifting.

5.20 Rotate panel on edge (see 5.17), and lift per figures 5.20a and 5.20b.

5.21 Set panel in place as shown in figure 5.21a, remove clamp, engage and secure panel.

---

**WARNING:** PICKING PANELS FLAT OFF THE BUNDLE WITHOUT THE USE OF VACUUM LIFTING EQUIPMENT AND PROPER OUTRIGGERS IS NOT RECOMMENDED!
5. MATERIAL HANDLING - Individual Panels

Vacuum Lifting

5.22 Panel installation time is typically reduced when using vacuum lifting equipment. Equipment must be designed for panel lengths, weights and profiles to be lifted – verify the requirements of your specific project with your lifting equipment supplier.

*Rotaboy and Cladboy* – contact Automak Assembly Inc. at (219) 310-8458
www.automakassembly.com

*Wood's POWR-GRIP®* – contact Woods Powr-Grip Co., Inc. at (406) 628-8231
www.wpg.com

*provided for informational purposes only, and does not imply specific endorsements
6. STORAGE AND STAGING

6.1 Panels should be stored in secure location(s), on level ground that is well drained and free from standing water.

6.2 Elevate one end of panel bundles to provide adequate drainage - use graduated blocking under bundle bearing pads as required (figure 6.2).

6.3 Slit bottom wrapping as shown for ventilation (figure 6.3).

6.4 Cover opened bundles at the end of the day with a tarp. Secure the bundle with straps to protect against weather damage.

6.5 Items on bundle report match panel callouts on MBCI installation drawings. Use this info to stage panels.
7. PANEL CUTTING

7.1 Personnel cutting panels should always wear safety glasses, gloves and long sleeve shirts.

7.2 Panel cutting should take place prior to installation when possible.

7.3 Use the following cutting tools to avoid panel damage:
- Circular saw with carbide tipped metal cutting blade
- Insulated metal panel saw
- Band saw with metal cutting blade

7.4 Use care when using reciprocating saws to avoid panel delamination: make sure the blade is sharp and let the saw cut at its own pace - do not force.

7.5 Do NOT use abrasive saws to cut panels.
- Abrasive saws

WARNING: USE OF ABRASIVE SAWS/GRINDER BLADES WILL DAMAGE THE PAINT FINISH AND THE METAL FACINGS!

7.6 For small penetrations, cut each panel face with a portable router, then cut the foam with a serrated knife.

7.7 Metal flashings may be cut with power snips, nibblers or hand snips.
7. PANEL CUTTING

7.8 Place the panel on padded sawhorses with the interior side up.

7.9 Wipe mud and debris off panel face to be cut with clean rag.

7.10 Mark cut line with chalk or washable felt tip marker (figure 7.10).

7.11 Masking tape may be applied on both sides of cut line to minimize panel scratching.

7.12 Recheck measurements and cut with appropriate tool per 7.3, 7.4.

7.13 Remove burrs at cut edges with deburring tool.
7. PANEL CUTTING

7.14 For panels located at framed openings where 50% or more of panel width is removed:
   a. mark cut lines on BOTH panel faces
   b. drill 1/4” holes at corner locations
   c. cut the exterior face to a depth of 1/4”
   d. flip panel over and cut interior face to a depth of 1/4”
   e. cut all the way through panel sidejoints at the framed opening area
   f. lift panel into place, set on bottom support
   g. cut foam with serrated knife and remove panel section
   h. engage panel and secure with fasteners
   i. de-bur and remove metal shavings

Figure 7.14a

Figure 7.14b

CUT METAL FACINGS ONLY - DO NOT CUT FOAM CORE UNTIL PANEL IS LIFTED INTO PLACE!
8. PANEL SEALANT

WARNING: THE TYPICAL AIR/VAPOR BARRIER LOCATION FOR COMMERCIAL/INDUSTRIAL PROJECTS IS THE LINER (INTERIOR) SIDE JOINT. HOWEVER, THE PROJECT ARCHITECT IS RESPONSIBLE FOR DETERMINING THE ACTUAL VAPOR BARRIER LOCATION, WHICH MAY VARY FROM THE DETAILS SHOWN IN THIS GUIDE.

CONTACT MBCI OR THE DESIGNER FOR COLD STORAGE APPLICATIONS.

8.1 Joint must be clean and dry before applying sealant.

8.2 Apply continuous non-curing (non-skinning) butyl sealant to the interior panel joint with a bead size of approximately ¼” as shown in figure 8.2. Sealant should provide continuous seal between the tongue and groove, but not overflow onto panel faces.

8.3 Inspect factory applied sealant (if any) for consistent bead size - add sealant as required.

Figure 8.2

COLD WEATHER = STORE BUTYL IN A WARMING BIN UNTIL READY FOR USE
HOT WEATHER = STORE BUTYL IN THE SHADE AND OUT OF DIRECT SUNLIGHT

REMOVE SEALANT FROM PAINTED PANEL FACES BY USING WD-40 OR MINERAL SPIRITS APPLIED WITH A CLEAN COTTON RAG.

FOR TUFF-COTE PANELS CONTACT MBCI FOR SEALANT REMOVAL INSTRUCTIONS.
9. PANEL FASTENERS

WARNING: REFER TO PROJECT INSTALLATION DRAWINGS FOR FASTENER TYPES AND REQUIRED FASTENING PATTERNS!

Self-drilling, self-tapping fasteners contain a built-in drill point, and do not require pre-drilling. They are the quickest and easiest way to attach insulated metal panels to light-medium gauge supports.

B point fasteners are used to attach panels to medium-heavy gauge supports that are difficult or not possible to drill with self-drilling type fasteners. They require a two-step operation:

1. pre-drill holes through panels and structure
2. insert fastener and tighten

**Suggested fastener driving speeds:**

Carbon, Zinc Plated and 410 Stainless Steel: 1,800 rpm
304 Stainless Steel: 1,000 rpm

**Recommended self-drilling, self-tapping types for various support thicknesses (¼” diameter):**

<table>
<thead>
<tr>
<th>Support thickness</th>
<th>Type</th>
<th>Threads per inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 gauge (.048)</td>
<td>#2, #3</td>
<td>14</td>
</tr>
<tr>
<td>16 gauge (.060)</td>
<td>#2, #3</td>
<td>14</td>
</tr>
<tr>
<td>14 gauge (.075)</td>
<td>#2, #3</td>
<td>14</td>
</tr>
<tr>
<td>12 gauge (.105)</td>
<td>#3</td>
<td>14</td>
</tr>
<tr>
<td>1/8” (.125)</td>
<td>#3</td>
<td>14</td>
</tr>
<tr>
<td>10 gauge (.134)</td>
<td>#3</td>
<td>14</td>
</tr>
<tr>
<td>3/16” (.187)</td>
<td>#5</td>
<td>20 minimum</td>
</tr>
<tr>
<td>1/4” (.250)</td>
<td>#5</td>
<td>24</td>
</tr>
<tr>
<td>3/8” (.375)</td>
<td>#5</td>
<td>24</td>
</tr>
<tr>
<td>1/2” (.500)</td>
<td>#5</td>
<td>24</td>
</tr>
</tbody>
</table>

**Pilot Hole Sizes for ¼” diameter B point fasteners:**

<table>
<thead>
<tr>
<th>Support thickness</th>
<th>Bit Size</th>
<th>Threads per inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 gauge (.048)</td>
<td>3/16”</td>
<td>14</td>
</tr>
<tr>
<td>16 gauge (.060)</td>
<td>#9 (.196)</td>
<td>14</td>
</tr>
<tr>
<td>14 gauge (.075)</td>
<td>#9 (.196)</td>
<td>14</td>
</tr>
<tr>
<td>12 gauge (.105)</td>
<td>#7 (.201)</td>
<td>14</td>
</tr>
<tr>
<td>1/8” (.125)</td>
<td>#2 (.221)</td>
<td>14</td>
</tr>
<tr>
<td>10 gauge (.134)</td>
<td>#2 (.221)</td>
<td>20</td>
</tr>
<tr>
<td>3/16” (.187)</td>
<td>#2 (.221)</td>
<td>20 minimum</td>
</tr>
<tr>
<td>1/4” (.250)</td>
<td>#1 (.228)</td>
<td>24</td>
</tr>
<tr>
<td>3/8” (.375)</td>
<td>#1 (.228)</td>
<td>24</td>
</tr>
<tr>
<td>1/2” (.500)</td>
<td>.234</td>
<td>24</td>
</tr>
</tbody>
</table>
10. CLEANING

10.1 Metal shavings from cutting and drilling should be removed as panels are erected using a soft bristle brush or clean cotton rag.

10.2 For general cleaning, use a low pressure power wash with plain water. If necessary, use carwash soap or a 5% solution of mild laundry detergent (such as Tide). Use a clean cotton rag, sponge or soft bristle brush as required. Rinse thoroughly.

10.3 Sealants, grease, tar and wax can be removed from panels and trim by using WD-40 or mineral spirits. Apply to a clean cotton rag, and avoid smearing over a large area. Follow up with general cleaning instructions per 10.2.

10.4 For rust stains, remove the source (typically metal filings), then clean the affected area using one of the following methods: soap and water or Rid O’Rust®.

10.5 Concrete/mortar splatter must be washed off immediately with a high pressure wash and mild detergent.

11. TOUCH-UP

11.1 Contact MBCI Customer Relations for color matched touch-up paint with applicator brush.

11.2 Touch-up paint is for minor scratches only. For deep scratches or larger areas of repair, contact Customer Relations for detailed instructions.

11.3 Clean affected area with a clean cloth, dampened with isopropyl alcohol.

11.4 Air and panel temperatures must be above 50°F before attempting repairs.

11.5 Apply touch-up in the scratch using an artist brush.

11.6 Allow 30-45 minutes for tack free and 24 hours for complete drying.

11.7 For more information regarding touch-up refer to the Owner’s Maintenance Manual.
12. INTERIOR TRIM INSTALLATION - BASE

12.1 Re-verify framing alignment per Chapter 3 Framing Alignment.

12.2 Confirm base condition as overhang or notched slab.

12.3 If base angle has not yet been installed, place urethane sealant under angle and butyl sealant on vertical leg of angle as shown in figure 12.3a (overhung) and 12.3b (if notched slab).

12.4 If base angle is already installed, place sealant as shown in figure 12.4a (overhung) and figure 12.4b (if notched slab).
12. INTERIOR TRIM INSTALLATION - BASE

12.5 Attach base flashing to base attachment using #12 pancake stitch fasteners (24” on center).

For base conditions matching 12.3

![Figure 12.5a](image1.png)  ![Figure 12.5b](image2.png)

For base conditions matching 12.4

![Figure 12.5c](image3.png)  ![Figure 12.5d](image4.png)

FOR MORE BASE CONDITIONS SEE CHAPTER 15 GENERAL DETAILS.
12. INTERIOR TRIM INSTALLATION - BASE

12.6 Lap base flashing with urethane sealant, install 1/8” color matched pop rivets as shown.

12.7 Cut flashing section at end of wall at 45 degree angle. Notch end of opposing flashing section with tabs that lap underneath. Apply urethane sealant, join pieces together using 1/8” color matched stainless steel pop rivets.
12. INTERIOR TRIM INSTALLATION - CORNERS

12.8 Install butyl sealant between inside corner trim and base flashing and top of corner. Attach interior portion of two piece corner trims using #12 Pancake head Stitch Screw.

12.9 Trim hems 2", apply 2 rows of urethane sealant, lap and fasten with 1/8” stainless steel painted pop rivets.
12. INTERIOR TRIM INSTALLATION - FRAMED OPENINGS

12.10 For two piece jambs, apply minimum 1/4” bead of butyl sealant at head and jambs of framed openings.

12.11 For one piece jambs, apply minimum 1/4” bead of butyl sealant at head conditions only.

REFER TO PROJECT INSTALLATION DRAWINGS TO DETERMINE IF ONE OR TWO PIECE JAMB SYSTEM IS REQUIRED.
12. INTERIOR TRIM INSTALLATION - FRAMED OPENINGS

12.12 Notch interior head trim at framed opening corners and bend tabs downward at each end.

12.13 For two piece jambs, install interior head and jamb trims with #12 Pancake head Stich Screw.

12.14 For one piece jambs, install interior head trim only with 1/8" stainless steel pop rivets at 12" on center.
12. INTERIOR TRIM INSTALLATION - FRAMED OPENINGS

12.15 Notch interior jamb trims as required at intersection of base flashing.
13. PANEL INSTALLATION - SEALANT

13.1 Starting at a building corner, apply 1/4” minimum bead of non-skinning butyl sealant to base flashing, interior corner trim and eave strut (figure 13.1).

13.2 Cut trailing edge of first panel per layout shown on installation drawings (figure 13.2a).

WARNING: ALIGNING PANEL JOINTS WITH JAMBS IS NOT RECOMMENDED DUE TO DIFFICULTY WITH WEATHER SEALING! IF UNAVOIDABLE, CONTACT MBCI FOR RECOMMENDATIONS.
13. PANEL INSTALLATION - STARTER PANEL

13.3 Lift panel into place and firmly set into butyl sealant.

13.4 Place level on leading edge (side with clip shelf), align and fasten trailing cut edge with 1/4” pancake fasteners into structural supports as required per installation drawings.

WARNING: INSPECT ALL PANELS BEFORE INSTALLING - CHECK FOR DENTS, DEEP SCRATCHES, JOINT DAMAGE AND FACE RIPPLING. DO NOT INSTALL DAMAGED MATERIALS - CONTACT MBCI BEFORE PROCEEDING.

WARNING: DO NOT OVERDRIVE FASTENERS - THIS DAMAGES PANEL APPEARANCE AND CAN CAUSE FASTENER STRIP-OUT.
13. PANEL INSTALLATION - ATTACHMENT

13.5 Attach leading edge of panel to structure per shop drawings (use MBCI fastening pattern(s) indicated).

**WARNING:** REFER TO PROJECT INSTALLATION DRAWINGS FOR FASTENER SIZES, TYPES AND REQUIRED FASTENING PATTERNS!

**WARNING:** INSTALLED CLIPS SHOULD BE SNUG, BUT DO NOT COMPRESS FOAM CORE MORE THAN 1/16”.

Figures 13.5a - d are used with MBCI Fastening Patterns 1-8 (see pages 66-69 for more information)
13. PANEL INSTALLATION - ATTACHMENT

WARNING: REFER TO PROJECT INSTALLATION DRAWINGS FOR FASTENER SIZES, TYPES AND REQUIRED FASTENING PATTERNS!

Figures 13.5e and f are examples of back fastening used with MBCI Fastening Patterns 2-5 (see pages 66-67 for more information)

Figures 13.5g and h are examples of back fastening used with MBCI Fastening Patterns 6-8 (see pages 68-69 for more information)
13. PANEL INSTALLATION - ATTACHMENT

WARNING: REFER TO PROJECT INSTALLATION DRAWINGS FOR FASTENER SIZES, TYPES AND REQUIRED FASTENING PATTERNS!

Figures 13.5i - l are used with MBCI Fastening Patterns 9-10 (see page 69 for more information)
13. PANEL INSTALLATION - MARRIAGE BEADS

13.6 Butyl sealant marriage beads must be placed at ALL panel terminations.
13. PANEL INSTALLATION - SIDEWALL ELEVATION

13.7 Install remaining panels on wall elevation with marriage beads at top and bottom of EVERY panel.

13.8 Verify joint spacing is as shown in figure 13.8.

13.9 Verify vertical alignment at every panel using level on leading edge.

13.10 Engage bottom corner of panels first, then allow gravity to rotate panel into position. Hold top of panels 1” off structurals to minimize smearing butyl sealant on eave strut.

WARNING: PANELS THAT ARE INSTALLED AND THEN REMOVED REQUIRE RE-APPLICATION OF SEALANT PRIOR TO RE-INSTALLING.
13. PANEL INSTALLATION - OUTSIDE CORNER

13.11 Cut leading edge of panel P2, trailing edge of panel P3. Attach cut edges of panels at corner with 1/4" pancake fasteners at base angle, girts, sheeting angle and eave strut.

13.12 Apply expandable foam as shown in the figure below.
13. PANEL INSTALLATION - INSIDE CORNER

13.13 Cut leading edge of panel P2, trailing edge of panel P3 at inside corner. Attach cut edges of panels at corner with 1/4” pancake fasteners at base angle, girts, sheeting angle and eave strut.
13. PANEL INSTALLATION - ENDWALL ELEVATION

13.14 Install panels and cut in place to match roof slope. Apply marriage beads at top and bottom of EVERY panel.

Note: To minimize the use of field applied foam, cut the tops of the panels as close as possible to the top of the framing.
13. PANEL INSTALLATION - FRAMED OPENINGS

13.15 Apply urethane sealant on head trim and at each end to create end dams.

13.16 Apply urethane or non-skinning butyl sealant on jamb and sill areas.

**WARNING: END DAMS ARE REQUIRED TO PREVENT WINDOW LEAKS!**
13. PANEL INSTALLATION - FRAMED OPENINGS

13.16 Cut panels at framed openings per Chapter 7 PANEL CUTTING - Framed Openings.

13.17 Lift panels and secure to perimeter of framed opening using 1/4” pancake fasteners (if required by installation drawings).

STANDARD TWO PIECE WINDOW JAMB
VERIFY PER INSTALLATION DRAWINGS.

OPTIONAL ONE PIECE WINDOW JAMB
VERIFY PER INSTALLATION DRAWINGS.

13.18 Apply marriage bead of non-skinning butyl sealant at all head and sill panels.
14. EXTERIOR TRIM INSTALLATION - FRAMED OPENINGS

14.1 Apply butyl tape at sill and jambs.

14.2 Install one piece sill trim with tabs bent up using 1/8” stainless steel painted pop rivets at 8” on center. Install urethane sealant prior to installing jamb trim, make sure to clean any excess sealants that may extrude on to exterior surfaces.
14. EXTERIOR TRIM INSTALLATION - FRAMED OPENINGS

14.3 Install exterior jamb trims using 1/8” stainless steel painted pop rivets at 8” on center.

14.4 Apply urethane sealant at lap and attach exterior head trim using 1/8” stainless steel painted pop rivets at 8” on center.
14. EXTERIOR TRIM INSTALLATION - FRAMED OPENINGS

- COMPLETED WINDOW TRIM WITH TWO PIECE JAMBS
  - Figure 14.4d

- COMPLETED WINDOW TRIM WITH ONE PIECE DEEP JAMBS
  - Figure 14.4e
14. EXTERIOR TRIM INSTALLATION - BASE

14.5 Install exterior base trims with 1/8” stainless steel painted pop rivets at 8” on center.
14. EXTERIOR TRIM INSTALLATION - CORNERS

14.6 Apply butyl tape to interior side of corner trims (if required per installation drawings) and install with 1/8” stainless steel painted pop rivets at 8” on center.
GENERAL DETAILS

WARNING: THIS CHAPTER CONTAINS GENERAL DETAILS ONLY - REFER TO PROJECT INSTALLATION (SHOP) DRAWINGS FOR PROJECT SPECIFIC DETAILS!

14 GA. PANEL CLIP W/ 1/4" HWH FASTENERS @ EACH WALL SUPPORT

INTERIOR          WALL SUPPORT
                     EXTERIOR

CLIP AND FASTENER ASSEMBLY

INTERIOR          WALL SUPPORT
                     EXTERIOR

OPTIONAL JOINT SEALANT
SEE DETAIL "A"

NON-SKINNING BUTYL SEALANT
1/4" UNIFORM BEAD MIN. @ LOCATION SPECIFIED

DETAIL A

INTERIOR          WALL SUPPORT
                     EXTERIOR

1/8" MAX @ JOINT

CI-CF-JT-03
PANEL JOINT DETAILS
GENERAL DETAILS

CI-CF-FSTN-01A
ATTACHMENT SIDEJOINT - PRE-ENGINEERED

CI-CF-FSTN-01B
ATTACHMENT SIDEJOINT - STRUCTURAL
CI-CF-FSTN-01C
ATTACHMENT BACK-FASTENED W/GIRT CLIPS

CI-CF-FSTN-01D
ATTACHMENT BACK-FASTENED W/RIVETS
CI-CF-BE-06
BASE - OVERHANG W/DRIP TRIM

1/4" HWH FASTENERS
1/8" RIVETS @ 12" O.C.

BASE ATTACHMENT
( NOT BY PANEL MANUFACTURER)

BUTYL SEALANT

#12 PANCAKE STITCH FASTENER

BASE ATTACHMENT
( NOT BY PANEL MANUFACTURER)

CONC. FASTENERS

BASE ATTACHMENT
SET IN CONTINUOUS
BEAD OF URETHANE SEALANT

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT

ALTERNATE PLACEMENT OF SEALANT

BUTYL SEALANT

BASE FLASHING

URETHANE SEALANT

OPTIONAL PANEL SUPPORT

URETHANE SEALANT

PANEL SUPPORT ( NOT BY
PANEL MANUFACTURER)
CI-CF-BE-07
BASE - OVERHANG W/EDGE TRIM

1/8" RIVETS @ 8" O.C.

14 GA. PANEL CLIP

1/4" HWH FASTENERS

BASE ATTACHMENT
(NOT BY PANEL MANUFACTURER)

BUTYL SEALANT

#12 PANCAKE STITCH FASTENER

BASE TRIM

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT

1/8" Ø RIVETS

CONC. FASTENERS
(NOT BY PANEL MANUFACTURER)

BASE ATTACHMENT
SET IN CONTINUOUS
BEAD OF URETHANE SEALANT

CONP. BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT

PANEL SUPPORT ANGLE
(NOT BY PANEL MANUFACTURER)

URETHANE SEALANT

ALTERNATE PLACEMENT OF SEALANT
GENERAL DETAILS

CF Series - Vertical

CI-CF-BE-08
BASE - OVERHANG W/BASE SUPPORT

CI-CF-EB-02
BASE - OVERHANG W/EXTRUSION
GENERAL DETAILS

CI-CF-BE-02
BASE - OVERHANG W/NOTCHED SLAB

14 GA. PANEL CLIP
1/4" HWH FASTENERS
BASE TRIM
1/8" Ø RIVETS @ 12" O.C.
BASE FLASHING
CONTINUOUS BUTYL SEALANT WITH MARRIAGE BEAD TO VERTICAL PANEL JOINT SEALANT

#12 PANCAKE STITCH FASTENER
BASE ATTACHMENT (NOT BY PANEL MANUFACTURER)
CONC. FASTENERS (NOT BY PANEL MANUFACTURER)
BASE ATTACHMENT SET IN CONTINUOUS BEAD OF URETHANE SEALANT
CONTINUOUS BUTYL SEALANT WITH MARRIAGE BEAD TO VERTICAL PANEL JOINT SEALANT

ALTERNATE PLACEMENT OF SEALANT
GENERAL DETAILS

CI-CF-BE-04
BASE - OVERHANG W/NOTCHED SLAB ALT.
CI-CF-EB-01
BASE - OVERHANG W/NOTCHED SLAB, EXTRUSION

If weep holes are located in the bottom of the base extrusion, allow 1/2" clearance between the bottom of the extrusion and the foundation to allow water to drain.
CI-CF-CE-01
OUTSIDE CORNER W/FLUSH TRIM

CI-CF-EC-01
OUTSIDE CORNER W/TWO PIECE EXTRUSION
GENERAL DETAILS

CI-CF-CE-03
INSIDE CORNER W/FLUSH TRIM

CI-CF-EC-02
INSIDE CORNER W/TWO PIECE EXTRUSION
GENERAL DETAILS

CI-CF-HD-01
HEAD W/TWO PIECE TRIM

CI-CF-EH-01
HEAD W/TWO PIECE EXTRUSION

14 GA. PANEL CLIP
1/4" HWH FASTENERS
EXTERIOR HEAD TRIM
PERIMETER SEALANT
(NOT BY PANEL MANUFACTURER)

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT
BUTYL SEALANT
#12 PANCAKE STITCH SCREW

URETHANE SEALANT
1/8" POP RIVET
INTERIOR HEAD TRIM

SUPPORT
WINDOW/DOOR/LOUVER/FRAMING
(NOT BY PANEL MANUFACTURER)

14 GA. PANEL CLIP
1/4" HWH FASTENERS
WIPER GASKET
EXTERIOR HEAD EXTRUSION

INTERIOR HEAD EXTRUSION
CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT
BUTYL SEALANT
#12 PANCAKE STITCH SCREW

FIELD DRILL 3/8" # MIN.
WEEP HOLES @ 24" O.C.
URETHANE SEALANT
PERIMETER SEALANT
(NOT BY PANEL MANUFACTURER)

SUPPORT
WINDOW/DOOR/LOUVER/FRAMING
(NOT BY PANEL MANUFACTURER)
GENERAL DETAILS

CI-CF-JB-01
JAMB W/TWO PIECE TRIM

CI-CF-JB-02
JAMB W/DEEP TRIM
GENERAL DETAILS

CI-CF-EJ-01
JAMB W/EXTRUSION

1/4" PANCAKE FASTENER (NOT TO EXCEED 5'-0" O.C.)
#12 PANCAKE STITCH SCREW @ ENDS
BUTYL SEALANT

PERIMETER SEALANT (NOT BY PANEL MANUFACTURER)
URETHANE SEALANT
FEMALE JAMB EXTRUSION
WIPER GASKET
BUTYL SEALANT
MALE JAMB EXTRUSION
SUPPORT

WINDOW/LOUVER/DOOR/FRAMING (NOT BY PANEL MANUFACTURER)

CI-CF-SL-01
SILL W/FLAT TRIM

#12 PANCAKE STITCH SCREW @ 12" O.C.
PERIMETER SEALANT (NOT BY PANEL MANUFACTURER)
SILL TRIM
CONTINUOUS BUTYL SEALANT WITH MARRIAGE BEAD TO VERTICAL PANEL JOINT SEALANT
1/8" Ø RIVETS @ 8" O.C.
FLASHING SEALANT TAPE
FLUTE PLUG STRIP (1) PER PANEL (IF REQUIRED)
1/4" HWH FASTENERS
14 GA. PANEL CLIP
SUPPORT

WINDOW/LOUVER/DOOR/FRAMING (NOT BY PANEL MANUFACTURER)
GENERAL DETAILS

CI-CF-ES-01
SILL W/EXTRUSION

#12 PANCAKE STITCH SCREW @ 12" O.C.
PERIMETER SEALANT (NOT BY PANEL MANUFACTURER)
SILL EXTRUSION
BUTYL SEALANT
WIPER GASKET
FLUTE PLUG STRIP (1) PER PANEL (IF REQUIRED)
CONTINUOUS BUTYL SEALANT WITH MARRIAGE BEAD TO VERTICAL PANEL JOINT SEALANT
1/4" HWH FASTENERS
14 GA. PANEL CLIP
SUPPORT
WINDOW/LOUVER/DOOR/FRAMING (NOT BY PANEL MANUFACTURER)
CI-CF-HD-02
O.H. DOOR HEAD W/TWO PIECE TRIM

14 GA. PANEL CLIP
1/4" HWH FASTENERS
EXTERIOR HEAD TRIM
1/8" Ø POP RIVET
INTERIOR HEAD TRIM

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT
BUTYL SEALANT
#12 PANCAKE STITCH SCREW
SUPPORT
HEAD TRIM (OPTIONAL)
URETHANE SEALANT

WIPER GASKET
EXTERIOR HEAD EXTRUSION
FIELD DRILL 3/8" Ø MIN.
WEEN HOLES @ 24" O.C.
PERIMETER SEALANT
(NOT BY PANEL MANUFACTURER)

CI-CF-EH-02
O.H. DOOR HEAD W/TWO PIECE EXTRUSION
CI-CF-DJ-01
O.H. DOOR JAMB W/TWO PIECE TRIM

CI-CF-ED-01
O.H. DOOR JAMB W/EXTRUSION
GENERAL DETAILS

14 GA. PANEL CLIP

1/4" HWH FASTENERS

BASE TRIM

1/8" @ 8" O.C.

STACK JOINT TRIM

FLASHING SEALANT TAPE

FLUTE PLUG STRIP
(1) PER PANEL
(IF REQUIRED)

#12 PANCAKE
STITCH SCREW

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD
TO VERTICAL PANEL
JOINT SEALANT

SUPPORT

CONTINUOUS BUTYL SEALANT
WITH MARRIAGE BEAD TO
VERTICAL PANEL JOINT SEALANT

CI-CF-SJ-01
STACK JOINT W/TRIM

WARNING: VERIFY THAT STRUCTURAL SUPPORTS AT STACK JOINT LOCATION ARE OF PROPER GAUGE, LOCATION AND SIZE.

WARNING: IN ORDER TO ENSURE PROPER ALIGNMENT OF PANELS IT IS RECOMMENDED THAT BOTH LOWER AND UPPER ROWS ARE INSTALLED AT THE SAME TIME.
15. GENERAL DETAILS

CI-CF-VE-01
EAVE - CONVENTIONAL ROOF

CI-CF-ESJ-01
STACK JOINT W/EXTRUSION

NOTE:
THIS DETAIL IS FOR INFORMATIONAL PURPOSES ONLY. ALL ROOF COMPONENTS, PERIMETER FLASHING AND SEALANTS ARE NOT BY PANEL MANUFACTURER.
15. GENERAL DETAILS

CI-CF-EP-02
PARAPET (SUPPORTED W/EXTRUSION)

CONTINUOUS BUTYL SEALANT WITH MARRIAGE BEAD TO VERTICAL PANEL JOINT SEALANT
PARAPET BLOCKING (NOT BY PANEL MANUFACTURER)
FASTENER (NOT BY PANEL MANUFACTURER)

PARAPET EXTRUSION (NOT BY PANEL MANUFACTURER)
ROOF MEMBRANE & PARAPET CAP (NOT BY PANEL MANUFACTURER)
1/4" HWH FASTENERS
14 GA. PANEL CLIP

CI-CF-TP-01
PARAPET (SUPPORTED) W/TRIM

CONTINUOUS BUTYL SEALANT WITH MARRIAGE BEAD TO VERTICAL PANEL JOINT SEALANT
PARAPET BLOCKING (NOT BY PANEL MANUFACTURER)
FASTENER (NOT BY PANEL MANUFACTURER)

ROOF MEMBRANE & PARAPET CAP (NOT BY PANEL MANUFACTURER)
1/4" HWH FASTENERS
14 GA. PANEL CLIP

FLASHING SEALANT TAPE
FLUTE PLUG STRIP (1) PER PANEL (IF REQUIRED)
METAL CLEAT AND FORM OF ATTACHMENT (NOT BY PANEL MANUFACTURER)
1/4" HWH FASTENERS
14 GA. PANEL CLIP

CI-CF-EP-02
PARAPET (SUPPORTED W/EXTRUSION)
GENERAL DETAILS

CI-CF-FP 1 FASTENING PATTERN #1

DIMENSION IS FROM FEMALE EDGE +/- 1.5"

CI-CF-FP 2 FASTENING PATTERN #2

SIDE JOINT FASTENING AND ONE DOME HEAD BULB-TITE® RIVET

INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL

CI-CF-FP 3 FASTENING PATTERN #3

SIDE JOINT FASTENING AND TWO DOME HEAD BULB-TITE® RIVETS

INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL
**GENERAL DETAILS**

**CF Series - Vertical**

**CI-CF-FP 4 FASTENING PATTERN #4**

- **DIMENSION IS FROM FEMALE EDGE +/- 1.5"**
- SIDE JOINT FASTENING WITH THREE DOME HEAD BULB-TITE® RIVETS
- INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL

**CI-CF-FP 5 FASTENING PATTERN #5**

- **DIMENSION IS FROM FEMALE EDGE +/- 1.5"**
- SIDE JOINT FASTENING AND BACK FASTENING WITH FOUR DOME HEAD BULB-TITE® RIVETS
- INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL

**CI-CF-FP 6 FASTENING PATTERN #6**

- **DIMENSION IS FROM FEMALE EDGE +/- 1.5"**
- SIDE JOINT FASTENING AND ONE GIRT CLIP WITH TWO DOME HEAD BULB-TITE® RIVETS
- INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL
CF Series - Vertical

GENERAL DETAILS

DIMENSION IS FROM FEMALE EDGE +/- 1.5"

(FP7) SIDE JOINT FASTENING AND TWO GIRT CLIPS WITH FOUR DOME HEAD BULB-TITE® RIVETS
INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL

CI-CF-FP 7 FASTENING PATTERN #7

(FP8) SIDE JOINT FASTENING WITH THREE GIRT CLIPS WITH SIX DOME HEAD BULB-TITE® RIVETS
INSTALL RIVET THROUGH GIRT FLANGE INTO MESA WHERE THE SKIN MAKES CONTACT WITH THE STEEL

CI-CF-FP 8 FASTENING PATTERN #8
GENERAL DETAILS

CI-CF-FP 9 FASTENING PATTERN #9

FASTENING PATTERN 9
WITH FOUR SELF-TAPPING
SCREWS WITH MIN. 20 GA.
NEOPRENE BONDED WASHER

CI-CF-FP 10 FASTENING PATTERN #10

FASTENING PATTERN 10
WITH FIVE SELF-TAPPING
SCREWS WITH MIN. 20 GA.
NEOPRENE BONDED WASHER
16. PENETRATIONS - PIPE

16.1 Locate penetration(s) on wall panel and cut hole with 1/2” minimum clearance. (Refer to Chapter 7 for panel cutting instructions).

- Penetration through field of panel

16.2 For penetrations at panel joints or edges:
- plug interior joint above and below opening with butyl sealant (figure 16.2a)
- fill exterior reveal above penetration with color matched urethane sealant (not by panel manufacturer) to top of panel (figure 16.2b)
16. PENETRATIONS - PIPE

16.3 Fill gap around penetration(s) with expandable foam.

16.4 Apply urethane sealant around penetration(s). Cut sheet metal trims for lower and upper halves of opening and attach using 1/8” painted stainless steel pop rivets.

16.5 Apply 3/8” minimum bead of color matched urethane sealant around penetration(s).

16.6 Repeat steps 16.4 and 16.5 for interior side.
16. PENETRATIONS - BEAM

16.7 Locate penetration(s) on wall panel and cut hole with 1/2” minimum clearance. (Refer to Chapter 7 for panel cutting instructions).

- Penetration through middle of panel
- Penetration at panel joint
- Penetration at panel edge

16.8 For penetrations at panel joints or edges:
- plug interior joint above and below opening with butyl sealant (figure 16.8a)
- fill exterior reveal above penetration with color matched urethane sealant (not by panel manufacturer) to top of panel (figure 16.8b)
16. PENETRATIONS - BEAM

16.9 Fill gap around penetrations(s) with expandable foam.

16.10 Apply urethane sealant around penetration(s). Cut sheet metal trims for lower and upper halves of opening and attach using 1/8” painted stainless steel pop rivets.

16.11 Apply 3/8” minimum bead of color matched urethane sealant around penetration(s).

16.12 Repeat steps 16.10 and 16.11 for interior side.
17. EXTRUSIONS

CHECK W/MBCI FOR AVAILABILITY: NOT ALL EXTRUSIONS ARE AVAILABLE FOR ALL PANEL THICKNESSES.

Base

Soffit

Stack Joint

Inside Corner

Outside Corner

Sill

Jamb/Head

Vertical H Joint

OPTIONAL WIPER GASKETS AND SPLICE BARS

WIPER GASKET

EXTRUDED ALUMINUM SPLICE BAR
17. EXTRUSIONS

ALUMINUM SPLICE BARS ARE USED TO ALIGN THESE EXTRUSIONS AT LAP JOINTS.

LAP STRIPS ARE MADE FROM FLAT STOCK, COLOR TO MATCH EXTRUSIONS. LAP STRIPS ARE USED:
1. FOR IMPROVED APPEARANCE AT SPLICES
2. TO PROTECT AGAINST LEAKS AT SPLICES

WARNING: FOR FRAMED OPENING HEAD CONDITIONS WITH SPLICES, SET EACH END OF LAP STRIP IN 2 ROWS OF URETHANE SEALANT. DRILL WEEP HOLES IN EXTRUSIONS WITHIN 2" OF SPLICE.
17. EXTRUSIONS - LAP STRIPS

WARNING: LEAVE 1/8” - 3/16” GAPS AT ENDOINTS OF EXTRUSIONS TO ALLOW FOR THERMAL EXPANSION.
17. EXTRUSIONS - WINDOW ASSEMBLY

17.1 Notch interior and exterior head and sill extrusions as required.

17.2 Attach extrusions to structure with #12 pancake fasteners - see Chapter 15 Installation Details.

17.3 Drill 3/8" weep holes less than or equal to 24" on center.

WARNING: DO NOT INSTALL WINDOW WITHIN EXTRUSION AREA. WINDOW SHOULD BE FLUSH WITH STRUCTURAL LINE.
TOOLS, HARDWARE AND SUPPLIES

CUTTING AND BENDING TOOLS
- Circular saw w/carbide tip blade
- Panel saw
- Serrated
- Dremel kit
- Power shears
- Nibbler
- Snips
- Seamer/bender
- Duckbills

FASTENERS, CLIPS
- TEK (self-drilling, self-tapping fastener)
- B point fastener
- Pancake fastener
- Stitch screw
- Pop rivets
- Panel clip
- Beam clip

SEALANTS
- Butyl Caulk
- Urthane Caulk
- Butyl tape

MISCELLANEOUS
- Level
- Caulking gun (electric)
- Power drill
- Philips head bit
- #2, #3 square drive bits
- Hex head socket set
- Deburring tool
- Scraper
- Tape measure
- Rivet tool
- Rivet tool (electric)