

FEDDERLITE® PANEL SYSTEM

Prefabricated, Lightweight, Outsulation®

Exterior Wall Panels with Integrated Reinforcing Channels



DS217

Fedderlite Panel System Fabrication and Installation Instructions



FABRICATION Materials Checklist

1. Insulation board manufactured to Dryvit's specifications
2. Hot melt laminating adhesive or Dryvit AP Adhesive™
3. Steel or aluminum Fedderlite Channels
4. Fedderlite Channel Adhesive
5. Dryvit base coat
6. Type I or II Portland Cement
7. Reinforcing mesh manufactured to Dryvit's specifications
8. Dryvit Demandit® Smooth or Color Prime™
9. Dryvit finish
10. Fedderlite Wall Clips (where applicable), as designed and supplied by the Fedderlite fabricator
11. Fedderlite Cutting Machine
12. Fedderlite Channel punch
13. 1/2 in (12.7 mm) variable speed drill
14. Goldblatt Jiffler mixer
15. Hawk and trowel
16. Spray equipment – when required for spray product applications

INSTALLATION Recommended Tools Checklist

1. Screw gun
2. Hammer drill (masonry and concrete)
3. Caulking guns (for adhesive application)
4. Margin trowel (for adhesive application)
5. Minimum 50 ft (15.2 mm)
6. Template and shims (to determine and set joint sizes)
7. Chalk lines
8. Level and plumb bobs
9. Drill bits (appropriate size and type for substrate)
10. Phillips and/or hex head drivers (adequate extension to accommodate the panel thickness)
11. Clean gloves

Layout of project may be aided by the use of laser leveling and plumbing techniques. For long runs, a water level can also be used. Using the proper tools for a specific project will greatly speed the installation of Fedderlite panels.

I. ADHESIVES

A. Adhesives Required for Fabrication and Installation of Fedderlite Panels

1. Dryvit Primus[®], Primus[®] DM, Genesis[®], Genesis[®] DM, or AP Adhesive[™].

II. FABRICATION

A. Fedderlite Fabricator

1. The Fedderlite panels are fabricated per approved shop drawings. The Fabricator shall submit shop drawings to the architect for approval.
 - a. When possible, dimensions should be verified in the field before fabrication begins.
 - b. Resolve all discrepancies of field dimensions versus shop drawings.
 - c. Determine final panel sizes based on project requirements and shop drawings.
 - 1) Type of channel: aluminum or steel
 - 2) Channel spacing
 - 3) Support locations and type
 - d. Prepare shop drawings and submit to architect for approval as required.
 - e. To avoid conflicts later, shop drawings should include details for all interfaces to dissimilar materials, vertical and horizontal panel to panel joints, joint treatment with sealant type and backer rod specified. Fedderlite Panel Systems requiring a moisture drainage warranty supplied by Dryvit shall include appropriate product submittals and installation as per Dryvit systems specifications. Panels should be numbered appropriately with care given to ensure the extrusions are offset from panel to panel.

III. PREPARATION OF FEDDERLITE PANELS

A. Insulation Board

1. Obtain the appropriate size insulation board to conform with the panel module.
 - a. The minimum thickness of the insulation board is 2 in (51 mm).
 - b. Consult with your local EPS molder for length and width availability.
 - c. If more than one sheet of insulation board is issued in a panel module, these insulation board edges must be adhered together with a Fedderlite laminating adhesive such as, AP Adhesive or hot melt type.

B. Cutting Fedderlite Channels

1. Fedderlite channels are available in both aluminum and steel. Standard available lengths are as follows:
 - a. Aluminum – 10 ft -0 in and 12 ft -0 in (3.0 m -0 m and 3.7 m -0 m).
 - b. Steel - 10 ft -0 in and 12 ft -0 in (3.0 m -0 m and 3.7 m -0 m)

NOTE: Special lengths may be cut to order. Contact your Dryvit representative for specifics.

2. Fedderlite panels are cut to the appropriate length with a band or chop saw. OSHA standards are to be followed when utilizing power tools.

NOTE: When face fastening, allow a 1/2 in (12.7 mm) overhang on each end of the finished panel.

NOTE: A different burn program should be used for steel versus aluminum channel as the profiles vary slightly due to the variation in material. The Tech21 Fedderlite machine will have pre-programmed cut for each channel.

3. When wall clips are used to secure the Fedderlite panel to the substrate, slots must be punched in the channels with the channel punch and the EPS cut out to provide access to the slots.

C. Placement of Fedderlite Channels

1. Locate the proper position of the Fedderlite channels and cut grooves in the insulation board with the Fedderlite cutting machine.
 - a. Panels adjacent to each other will require the channels to be staggered minimum 3 in (76 mm) to avoid interference during erection.

IMPORTANT: When assembling panels consisting of more than one sheet of insulation, the groove must be cut perpendicular to the adhered edges.

2. When hanging clips are used, using a hot knife or similar cutting tool, remove a surrounding portion of foam to accommodate the clip. This should be done prior to inserting the Fedderlite channel. See Figure 1.
3. After cutting the grooves in the insulation board, apply the Fedderlite Channel Adhesive (Dryvit AP Adhesive) to the insulation board in a continuous bead along each side of the groove as well as the flat portion of the cut. See Figure 2.

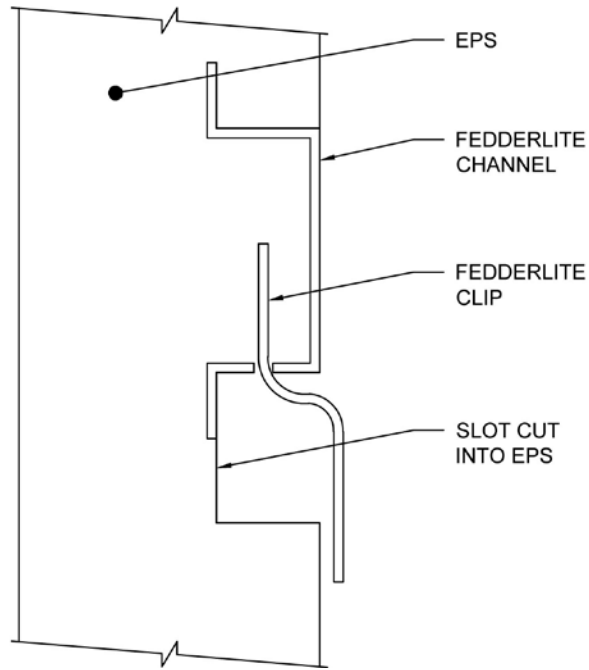
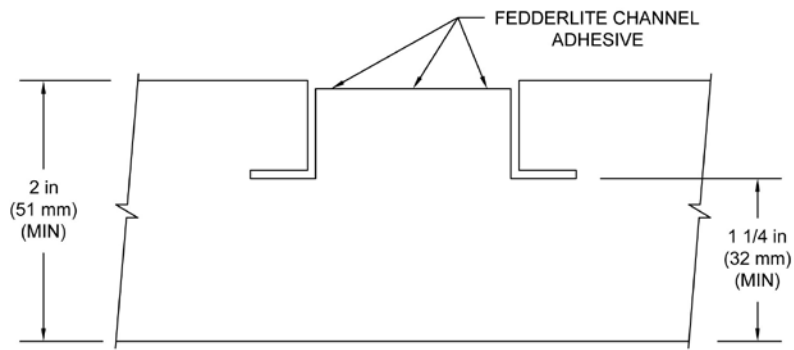


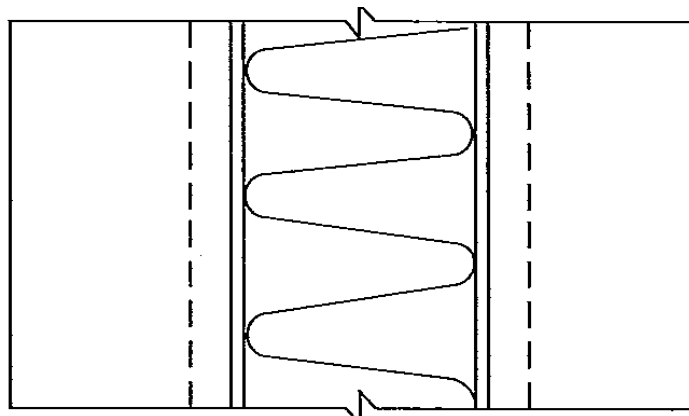
Figure 1



INSULATION BOARD SIDE VIEW

Figure 2

a. Apply a bead of AP Adhesive in a wavy pattern as shown below in Figure 3.



TOP VIEW

Figure 3

4. Slide the Fedderlite channel into each groove.
 - a. When face fastening the Fedderlite panel, extend the channel beyond the edge of the panel to accommodate the appropriate fastener. See Figure 4.
 - b. When back fastening the Fedderlite panel, the channel should be cut flush with the foam edge.
5. After sliding the channel into place, apply an additional bead of adhesive between the channel and the insulation Board along both sides of the channel. Take care not to allow excess adhesive to get onto the face of the Fedderlite panel.

IV. APPLICATION OF THE DRYVIT COATINGS

A. Inspection

1. Prior to applying the reinforcing base coat, remove any irregularities from the face of the insulation board by rasping the surface in a light circular motion. The entire surface of the panel must be rasped to minimize telegraphing of board joints and ensure maximum adhesion of the base coat.
 - a. Use Grade 36 grit sandpaper with a hand or air rasp. **TIP: Do not sand parallel to board joints.**
 - b. Remove all loose pieces of insulation board and dust from the sanding operation using a brush or compressed air.

B. Application of the Reinforced Base Coat

1. Refer to Dryvit's Outsulation® System Application Instructions, DS204, for mixing of wet materials and application techniques.
2. The reinforced base coat must be returned onto each panel edge and extend a minimum of 4 in (102 mm) onto the back of the panel.

IMPORTANT: FOR INSTALLATIONS WHICH RESULT IN AN AIR SPACE GREATER THAN 1/4 in (6.4 mm) BETWEEN THE BACK OF THE PANEL AND THE SUBSTRATE, THE FEDDERLITE PANEL MUST BE TOTALLY ENCAPSULATED WITH THE PRIMUS/ADHESIVE MIXTURE AND REINFORCING MESH.

C. Application of Finish

1. Roller or brush apply color-coordinated Demandit Smooth or Color Prime to the panel edges in preparation for receiving sealant.
2. Trowel or spray apply the Dryvit finish over the face of the panel. Techniques should be followed as outlined in Dryvit's Outsulation System Application Instructions, DS204, for the specific finish being applied.

D. Tolerances

1. Finished Fedderlite panels shall conform to the following dimensional tolerances:
 - a. Length and Width $\pm 1/8$ in (3.2 mm)
 - b. Thickness $\pm 1/8$ in (3.2 mm)
 - c. Out of plane $\pm 1/8$ in (3.2 mm)
 - d. Squareness $\pm 1/4$ in (6.4 mm)

V. FEDDERLITE PANEL HANDLING AND PACKAGING

A. Material Handling

1. When handling Fedderlite panels, we suggest that clean gloves be used by workers to ensure that the panels are kept clean.
2. Generally the panels can be lifted by two (2) workers. However, larger panels may require lifting devices. It is recommended that the panels be carried in a vertical position to prevent breakage. When lifting panels with a hoist use a tie line to control the panel while in the air and keep panel from kiting and getting damaged.
 - a. Panel weight is approximately 2 lbs per square foot (9.76 Kg/m²)

B. Delivery

1. Position the panels face to face and separated by appropriate spacers to prevent damage to the panel face.

TIP: We recommend that the panels be transported in a vertical position. Stacking the panels horizontally may result in indentations or damage to the panel face. Use of a protective padding such as DOW Ethafoam sheet material between panels works well when packaged face to face and laid flat rather than standing up. For packaging of Dryvit Reflectit finished panels, small profile bubble wrap works well to protect the finish surface and prevent sticking or adhering to the finish surface. All finishes must be completely dry prior to packaging.

2. Secure panels during transport to prevent shifting.
3. Protective covering of the panels is necessary during transport to prevent staining and damage from roadside debris. The covering must be secured and weighted to prevent wind damage. Use opaque, white protective wrap to cover and protect the panels. Avoid darker colored material as excessive heat can damage packaged panels. Panels must be completely dry prior to packaging.
4. The maximum service temperature of the EPS insulation is 165 °F (74 °C). Care must be taken to protect the panels from exposures that would cause this value to be exceeded.
5. Upon delivery, the panels shall be handled as listed in the Material Handling Section. At this time, all panels must be inspected by the panel installer. The panel installer shall ensure that all panels meet the contract documents and are proper size, color and texture. The panel installer must notify the panel manufacturer of all discrepancies. The panel installer should not accept the panels which are not in accordance with the contract documents.

C. Storage

1. Panels must be protected from weather and kept in an area free from traffic.
 - a. Temporary covering must be provided to prevent soiling of the panels and must be secured and weighted to prevent wind damage.
 2. Panels must be positioned face to face and separated by appropriate spacers to prevent damage.
- NOTE: To minimize potential for damage and contamination, panels should be installed as soon as possible and not be stored for an excessive amount of time at the job site.**
3. Place panels in close proximity to the area where they will be installed.
 4. Protect all panels from weather and other contaminants prior to installation.

VI INSTALLATION

A. Erection of Fedderlite Panels

1. General

- a. Place scaffolding or staging around the area where Fedderlite panels will be installed. Observe all scaffolding load limitations.
- b. Lifting devices, if needed, should be available on site and set up.
- c. Mark the "UP" positions on the back of the panel.
- d. Appropriate safety equipment (hard hats, shoes, etc.) in accordance with OSHA and local regulations shall be used during the panel installation.

B. Installation Sequence

1. Prior to installing the Fedderlite panels, examine the substrate to ensure it is in compliance with the contract documents. The architect, general contractor and/or owner shall be advised of all discrepancies. Work shall not proceed until all unsatisfactory conditions have been corrected.

C. Installation Using Mechanical Fasteners

1. Typical fasteners

NOTE: Fasteners are engineered by the panel fabricator to resist all design loads in accordance with accepted engineering principles and local building code requirements.

- a. Wood Substrate (face fastened and back fastened): Minimum No. 8 wood screws of sufficient length to penetrate the wood substrate a minimum of 3/4 in (19 mm).
 - b. Steel Substrate (face fastened and back fastened): Minimum No. 8 self-drilling screws of sufficient length to penetrate the steel substrate a minimum of 3/8 in (9.5 mm).
 - c. Masonry and Concrete Substrates (face fastened): Minimum No. 10 anchors of sufficient length to penetrate the masonry a minimum of 1 in (25 mm).
 - d. All fasteners must be treated for corrosion resistance.
- #### 2. Face fastening
- a. The wall attachments must be engineered by the panel fabricator for the appropriate design loads and project conditions.
 - b. Be sure that the first panel is installed straight and plumb since adjacent panels will depend on proper placement of the first panel.
 - c. Once the panel is positioned, install the appropriate fastener through the end of the channel and into the structural substrate.

- d. Provide a minimum of 3/8 in (9.5 mm) fastener edge distance as shown in Figure 4. Pre-drill holes in the factory for ease of installation in the field.

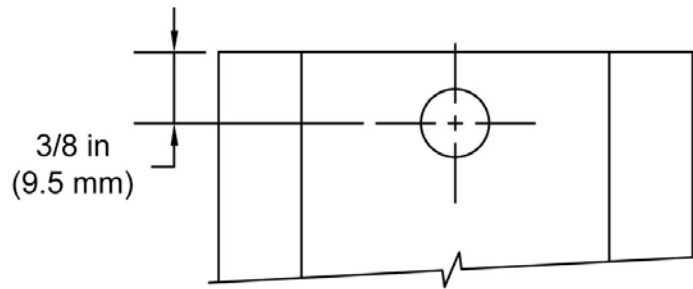


Figure 4

3. Back fastening

- a. Follow guidelines as listed in VI.C.1.a.b.c until the panel is positioned. Then fasten from the inside of the structure by fastening through the structural member and into the Fedderlite channel.

4. Clip fastening in conjunction with face fastening

- a. Locate the clips on the substrate so that they coincide with the punch-outs in the Fedderlite channels.
- b. Fasten the clips to the substrate with the appropriate fasteners per shop drawings and engineering requirements.
- c. Attach the Fedderlite panel to the clips by raising the panel such that the channels are located approximately 1 in (25 mm) above the clips.
- d. Lower the panel onto the clips until each clip is engaged in the Fedderlite channel.
- e. Ensure that the panel is straight and plumb, and install the appropriate fastener through the channel end (as shown in Figure 4) and into the substrate to secure the panel in place.

D. Installation Utilizing Adhesive and Mechanical Fasteners

1. Adhesive

- a. Either the Dryvit's Primus, Primus DM, Genesis, Genesis DM, or Dryvit's AP Adhesive can be used to adhere the panels to the substrate. (Primus, and Genesis must be mixed with Portland as described in Dryvit's Outsulation System Application Instructions, DS204.)
- b. Primus, Primus DM, Genesis, or Genesis DM adhesive is applied to the back side of the Fedderlite panel with a continuous ribbon (approximately 2 in [51 mm] wide by 3/8 [9.5 mm] thick) around the perimeter of the panel and 4 in (102 mm) dabs placed at one foot on center in the field of the panel. For panels designed for drainage, the adhesive is applied using a notched trowel applied in a vertical pattern.

NOTE: Cementitious adhesives must be applied at temperatures 40 °F (4 °C) and rising.

- c. Dryvit AP Adhesive is applied to the back side of the Fedderlite panel in vertical strips (minimum 3/8 in [9.5 mm] - 1/2 [12.7 mm] beads) spaced a minimum of 12 in (305 mm) on center. A minimum of 15 percent contact area with the wall is required.

NOTE: Dryvit AP Adhesive is designed to be applied at temperatures above 30 °F (-1 °C).

- d. Tamp the panel to insure full, intimate contact between the panel and the substrate.
- e. Ensure that the panel is straight and plumb and install the appropriate fasteners through the channel ends and into the substrate (as shown in Figure 4). **NOTE: The mechanical attachments are not optional. Fastening is required to secure the panel to the substrate while the adhesive cures.**

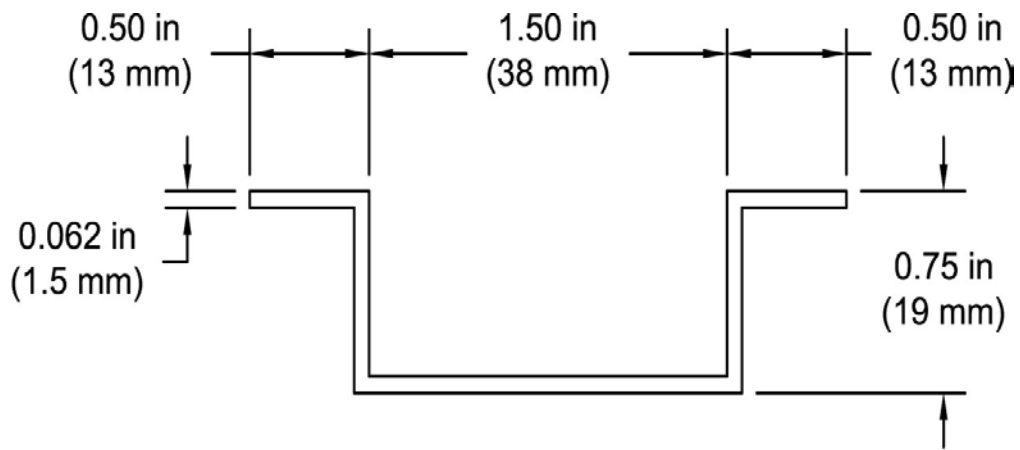
VII. Flashing and Sealant

- A. Install all flashings and sealant immediately after panel installation.
- B. Refer to Dryvit's publication DS153 for the most current listing of sealants which have been tested for compatibility with the Fedderlite Panel materials.

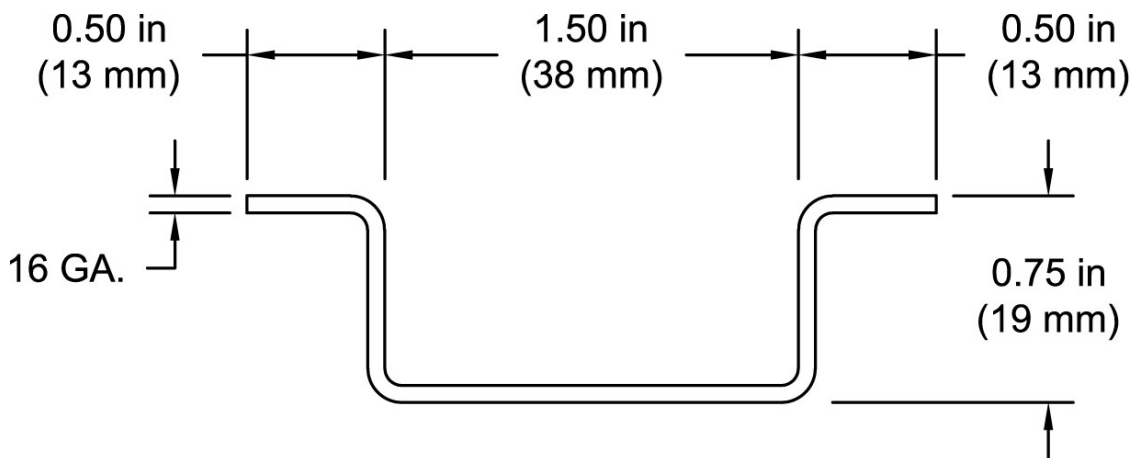
VIII. Maintenance and Repair

- A. Refer to DryvitCARE EIFS Repair Procedures, DS498.

APPENDIX A



ALUMINUM EXTRUSION



STEEL EXTRUSION

DISCLAIMER

Information contained in this document conforms to standard detail and product recommendations for the installation of the Dryvit Fedderlite Panel System products as of the date of publication of this document and is presented in good faith. Dryvit assumes no liability, expressed or implied, as to the architecture, engineering or workmanship of any project. To ensure that you are using the latest, most complete information, contact Dryvit at:

3735 Green Road
 Beachwood, OH 44122
 (401) 822-4100

Dryvit
 3735 Green Road
 Beachwood, OH 44122
 800-556-7752
 www.dryvit.com

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