# SYNTHEON® ACCEL-E® INSTALLATION MANUAL

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INTRODUCTION

This installation manual is provided as a reference guide for the installation of the ACCEL-E wall panel system. This manual can not cover every possible job scenario and should be used in conjunction with SYNTHEON engineered drawings.

ACCEL-E WALL PANEL DESCRIPTION

- Each panel is 4’-0” wide with tongue and groove vertical edges used for interlocking.
- Panels are available in three thicknesses: 5 1/2”, 6” and 8”.
- All panels are cut to the customer’s specified length(s).

ITEMS INCLUDED

SYNTHEON, Inc. provides engineered drawings and panel lay-out for each specific project. The engineered drawings will identify member sizes, gauge thickness, anchors, screws, etc. and supersedes this installation manual. The panel lay-out drawing will identify the sequence in which the panels are to be installed. In addition to the drawings; the following items are also included as needed and pertain directly to our wall system:

- ACCEL-E Wall Panels
- Lateral Bracing
- Bridging
- Strapping
- Track
- Corner Posts
- Jamb Studs
- Headers
- Spazzer Barss
- Snap-in Grommets (where applicable)
- Splice Plates/Gusset Plates
- Additional CFS structural members as needed
- Clip Angles
- Screws
  - #12 x 4 3/4” or 6 3/4” Concealer
  - #12 x 1” HWH
  - #10 x 1” Pancake Head
- Shear Wall (X-Bracing)
- Deflection Clips
GENERAL INFORMATION

ACCEL-E wall panel

Spazzer® Bar Snap-in Grommet

Deep Leg Track

Outside Corner

Inside Corner

Concealer Screw

Corner Angle

CFS Plates

Clip Angles

Track

C-Stud

L-Header

Heavy Duty Stud

Deflection Clips

HWH Screw

Pancake Head Screw
GENERAL INFORMATION

ITEMS SUPPLIED BY OTHERS
The following items are not included with ACCEL-E panels, but may be required for installation:
- Temporary bracing
- Engineer site visit
- Anchor bolts
- Power actuated fasteners
- Tie down anchor
- Structural steel
- Flashing tape
- Expandable foam
- Caulking
- Lumber products
- Sheathing
- Weather barrier
- Window/Door flashing

PANEL DELIVERY
The panels are shipped on tarped flatbed trailers that protect them from road dirt and damage while in transit to your job-site.

RECEIVING
When the panels arrive, it is the responsibility of the customer to unload all materials delivered by SYNTHEON. It is also the responsibility of the customer, or an authorized representative of the customer, to sign the Bill of Lading, noting any and all shortages and/or physical damage to the panels. If you have access to a camera, we suggest taking pictures of any damage and to notify SYNTHEON as soon as possible.

Note: Any damage and/or shortages must be reported in writing within 24 hours of receipt of shipment. For additional information, see the Terms and Conditions Exhibit B of the contract.

HANDLING
When handling the panels, care should be taken so that the tongue and groove edges are not damaged. To avoid damage, minimize applying pressure/force to the tongue and groove edges.

SAFETY TIP:
- Gloves should be worn when handling panels.
- Extra care should be taken when handling wall panels in windy conditions; it can be unsafe and is not advised!

Carrying Horizontally
Hands should be placed as close to the metal stud as possible and carried in a flat position.

Carrying Vertically
Handle the metal studs and let the panel rest against the side of your shoulder.

Stacking
When stacking the panels, each should alternate (face up then face down) so that the metal studs interlock.

JOBSITE SAFETY
Always follow OSHA guidelines and safety requirements when they are applicable.

Wear work gloves to protect hands from cuts and injuries when working with steel.

Safety goggles are recommended at all times.

Cutting and welding galvanized steel can produce harmful fumes that can be hazardous to health and cause irritation to respiratory system. Make sure all cutting and welding is done in a well-ventilated area.
Use caution when working with wet steel. Steel members may be slippery and cause injuries if not properly handled.

**STORAGE**

Panels should be staged close to the area where they will be installed. Store panels on a solid level surface with blocking under first panel. Panels should be spaced approximately one foot in from each end, and then every four feet for support. Panels should be covered to keep them free of dirt and debris.

**SAFETY TIP:**

Panels should always be secured to prevent them from becoming airborne during windy conditions.

**TOOL RECOMMENDATIONS**

- Reciprocating saw
- Screw gun / Tek gun
- EIFS rasp (Abrasive tape available)
- Metal cutting snips (right, left, center)
- Power shears (optional)
- Metal chop saw
- Large caulking gun
- Small caulking gun
- Hammer drill
- Hilti® gun
- Small chain saw (optional)
- Drywall hand saw
- 4 or 6 foot magnetic level
- Plumb Bob or Laser
- String
- C-Clamp vise grip
- Grinder
- Tape measure
- Quick clamps
- Circular saw
- Keyhole Saw
- Gloves
- Safety glasses
- Step ladder or scaffold
GENERAL INFORMATION

BITS AND BLADES
- #2 Phillips Head
- #2 and #3 Square
- Metal Reciprocating Blade
- 5/16 Hex Head Drive Bit
- Metal Drill Bits
- Concrete Drill Bits
- Abrasive Metal Blades for Chop Saw and Grinder

FASTENERS
- Self Drilling #12 Concealer Screws
- Self Drilling #12 Hex Head Screws
- Self Drilling #10 Pancake Head Screws
- Powder Actuated Fasteners (PAF) (By Others)
- Anchor Bolts (By Others)
- Drive Pins (By Others)

Note: All fasteners related to your specific project can be found on SYNTHEON engineered drawings. The above fasteners are just some of the possible types that may be required.

ANCHORS AND CLIPS
- Tie Down Anchors
- Hurricane Ties
- Clip Angles
- Web Stiffeners
- Splice Plates

Note: All anchors and clips related to your specific project will be called out on SYNTHEON engineered drawings. The above anchors and clips are just some of the possible types that may be required.

SEALANTS, ADHESIVES, FLASHING, AND TAPES

CAUTION: Not all sealants and/or adhesives can be applied to EPS foam insulation.

Expanded Polystyrene (EPS) is a common construction insulation material. Many sealants and/or adhesives are compatible with EPS, but not all. Products containing organic solvents will dissolve EPS.

Please consult individual manufacturer’s instructions, recommendations, warnings, and limitations before application.
GENERAL INFORMATION

TOOLS OF THE TRADE

**Electric Shears:**
A hand held tool used to cut steel thicknesses up to 68-mils

**Abrasive or Dry Cut Metal Blades:**
Used in a chop saw or circular saw for field cutting

**Screw Gun:**
A torque-adjustable, clutch-activated screw gun operating from 0-2500 RPM

**Locking C Clamps:**
Often used to hold steel pieces tight during fastening

**Reciprocating Saw:**
For cutting studs and EPS

**Beam Cutter:**
For EPS only (no oil)

GENERAL NOTES

- The information in this manual is an aid in the general construction of ACCEL-E wall panel system and intends to facilitate the work that the framer, architect or the engineer of record must perform. It does not in any way imply the assumption of professional responsibility of the architect or of the engineer of record by SYNTHEON.

- Framing erector is to refer to the project contract documents for additional construction assembly requirements. All conditions shall be field verified prior to erection.

- Details shown in this manual are for common and general applications. They are for design reference only.

- For specific requirements and warranty information on systems or materials connected and appurtenant to the cold-formed steel framing including windows, caulking, and flashings, refer to manufacturer’s data. SYNTHEON assumes no responsibility for the proper construction or function of the total architectural assembly.

- The design of the cold-formed framing is performed in accordance with the latest edition of AISI “Specification for the Design of Cold Formed Steel Structural Members”.

- This Installation Manual does not take into consideration the overall stability of the structure. It is the responsibility of the Structural Engineer of Record to design and/or determine the allowable resistance of the building diaphragm to maintain overall stability of the structure.
INSTALLATION GUIDELINES

• All framing components shall be cut squarely for attachment to perpendicular members, or as required on angular fit against abutting members. Members shall be held in place until properly fastened.

• Temporary bracing shall remain in place until the structure is completely stabilized. Design of temporary bracing is not the responsibility of SYNTHEON.

• All in-field cutting of members must be done by sawing or shearing.

**WARNING:** Torch cutting of cold formed members is unacceptable.

• It is the responsibility of the contractor to install additional studs in such a way that the knock-outs align with panel stud knock-outs for mechanical runs. Knock-out should also not occur within 10 inches from the ends of load bearing studs.

• Cutting, coping, or notching the stud flanges or edge stiffeners in any manner is not permitted without an approved design from a SYNTHEON engineer or the project's engineer of record.

• No splices in studs, joists, or other load carrying members may be made without prior review and specific instructions supplied by a SYNTHEON engineer or the project's engineer of record.

• If additional holes are required, they must be centered on the web of the stud and cannot remove more than 70% of the web width. They must be a minimum distance of 10 inches away from the ends.

• For all tracks used in composite members such as beams and girders, the track must be installed as a single piece. No splicing is permitted unless otherwise noted by a SYNTHEON engineer or the project's engineer of record.

• When steel joist or track are to be used for a beam, girder, or header application, joist and track members shall have unpunched webs unless otherwise approved by a SYNTHEON engineer or the project's engineer of record.

**WARNING:** Do not weld near ACCEL-E wall panels. Welding should only be done on ancillary members in a controlled environment prior to attachment to the ACCEL-E wall panel system.

• Erect framing and panels in a plumb, level and square fashion with strict accordance to approved drawings.

• Track shall be securely anchored to the supporting structure as shown on SYNTHEON engineered drawings.

• Framed wall openings shall include headers and supporting studs as shown on SYNTHEON engineered drawings.
SPECIAL CONSIDERATIONS

• Contact between copper piping and galvanized steel will produce a galvanic reaction that will compromise the strength and performance of both. Non-conductive grommets, plastic bushings or other materials approved for separating these two materials should be used.

• Install non-conductive grommets for plastic pipes to prevent noise and possible incisions from the edges of the knock-outs.

• The National Electric Code states that non-metallic sheathed cable must be protected “by bushings or grommets securely fastened in the opening prior to the installation of the cable.” Cables running continuously through the stud knock-outs should also be stabilized at intervals required by local building codes.

• To prevent corrosion, pressure treated wood should not come in direct contact with galvanized steel. A non-moisture absorbing material, such as a closed-cell sill sealer, should be used to separate the two materials.

QUALITY ASSURANCE

• Contractor shall provide effective full-time quality control over all fabrication and erection activities.

• Full responsibility for quality control shall remain with contractor.

DESIGN STANDARDS

Work shall meet the requirements of the following standards:


• American Society for Testing and Materials (A.S.T.M.)


• All pertinent Federal, State and Local codes.

Note: The most stringent requirements shall govern in conflicts between specified codes and standards.
TOLERANCES

Floors

It is required that the the bottom track is attached to a uniform bearing surface with a maximum gap of 1/4” between surfaces to support bearing loads.

**WARNING:** If floor has low areas or is not within recommended tolerances, then a non-shrink grout should be used to level the track. Metal shims may be used, but this may create an area where air and moisture can enter into the structure.

Walls

Studs must be seated in the track with a maximum gap of 1/8” to ensure that the building loads are transferred through the studs and not through the fasteners. Tighter tolerances may be required for structures that are more than two stories.

The wall panels and any additional stud framing members must not be out of plumb more than 1/8” over 10 feet in the direction of the stud flanges and the web.

In-Line Framing Tolerances

Stud spacing on ACCEL-E panels is 24” o.c., so some consideration must be given to the layout of the floor joist and to roof trusses that do not follow 24” o.c. spacing.

Floor Joist

Wall studs should be in alignment with floor joist where walls are running perpendicular to floor joist. If the wall studs and the floor joist do not line up, then ladder blocking may be required to provide support at point loads. Contact engineer of record for installation requirements and procedures.

Roof Truss/Second Floor Joist

Roof truss/second floor joist alignment tolerances are as follows:

- When metal top track is the only member at the top of wall: 3/4” max from center of stud to center of truss/joist
- When using metal track and a single 2X at the top of wall: 1 1/2” max from center of stud to center of truss/joist.
- When using metal track and a double 2X at the top of wall: 3” max from center of stud to center of truss/joist

**Note:** These are general guidelines and do not supersede local building code requirements or engineered drawings.
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*Color coded product may or may not be available; varies by market.

PRODUCT CODES/DISEIGNATORS

Each product or system component is identified by a 3- or 4-digit alphanumeric code for ease of ordering. Corresponding SSMA member designator, where applicable, is also provided for easy reference. The Steel Stud Manufacturers Association (SSMA) has established industry standard nomenclature for steel framing members and components. The SSMA reference is identified by an easy-to-understand alphanumeric code. The alpha designation is S, T, U, or F, where S = stud or joist, T = track, U = cold rolled channel, and F = furring channel. Product identification is simplified with the SSMA standard member designation. While the letters define the section type, the numbers identify web depth, flange width and minimum steel thickness as shown in the following example.

400 S137-33

Flange Web Size: 400 = 4”

Member Type: S = Stud or Joist
Flange Width: 137 = 1-3/8” (1.37”)
Min. Steel Thickness in mils: 33 = .0329”
LOAD BEARING INSTALLATION
BOTTOM TRACK

1. Layout and mark the location of the outside edge of track with chalk lines.

2. Start at an outside corner and miter one end of track. (Figure 1)

3. A continuous bead of waterproof sealant should be applied under bottom track to seal between track and floor. (Supplied by others. See Figure 2)

4. Align outside edge of track with chalk line and anchor per SYNTHEON engineered drawings anchor call-out.

5. Place the next piece of track by butting the trailing end against the leading end of the previously installed piece. (Figure 3)

Note: Do not continue track through door openings. Do not overlap track at corners or butt joints.

6. Continue this process in one direction until all track is installed. Remember to refer to SYNTHEON engineered drawings for corner details.
WALL PANELS

1. Select any outside corner as a starting point and note the panel identification number on the drawing floor plan. The panel identification number is marked on one end of the panel. (Figure 4)

2. Slide outside corner post over the edge of the corner panel by setting panel on long edge. Align post and slide on (Figure 5). Refer to SYNTHEON floor plan drawings for corner post orientation.

   **Note:** All outside corner posts are directional. The open throat of the post will always be facing in the direction that the panels are being installed.

3. Set both pieces into track with the open stud cavity towards the inside. Refer to SYNTHEON floor plan drawing for the dimensional location of the first stud to verify that the starter panel is in the correct position. Plumb panel, brace, and screw to track on both sides of wall. (Figure 6).

   **Note:** Inside corners are set similar to outside corners. Refer to SYNTHEON engineered drawings for orientation of inside corner post.
4. Locate next panel per drawing sequence. Set in track and slide tongue and groove together. (Figure 6)

5. Insert Spazzer bar and align center of Spazzer bar at joint between panels. Rotate Spazzer bar 90 degrees to lock in place. Insert Snap-in Grommet at each stud knock-out (Figure 7) or install two Hex Head screws at each stud (Figure 8) to prevent rotation of lateral bracing.

Refer to SYNTHEON engineered drawings for location of Spazzer bar bars and the number of rows needed.

6. Repeat steps (4) and (5). Spazzer bar will overlap approximately 1”. Put two screws at this location to secure Spazzer bar together. (Figure 9)

7. Repeat steps (4), (5), and (6). Plumb panels and install bracing as required to stabilize walls. (Figure 10)
LOAD BEARING INSTALLATION

HDS DOOR AND WINDOW JAMBS

1. Refer to the Door/Window Schedule on SYNTHEON engineered drawings for header and jamb construction details and member sizes.

2. Attach anchor clip to bottom of jamb leg with #12 x 1” HWH screws. (Figure 11)

3. Set jamb legs into track and align inside edge of jamb leg with edge of window/door opening. (Figure 12)

4. Make sure jamb is square and plumb. Affix EPS with quick clamps.

5. Anchor jamb legs to floor/foundation per engineered drawings. Install top track and screw to header per SYNTHEON engineered drawings (Figure 13). See SYNTHEON engineered drawings for attachment of cripple studs.

Note: Do not splice top track over window and door headers.
‘L’ HEADER DOOR AND WINDOW JAMBS

1. Refer to the Header Schedule on SYNTHEON engineered drawings for door/window header and jamb construction details and member sizes.

2. Attach anchor clip to bottom of jamb leg with #12 x 1” HWH screws. (Figure 11)

3. Set jamb legs into track and align inside edge of jamb leg with edge of window/door opening. (Figure 14)

4. Make sure jamb is square and plumb; Affix EPS with quick clamps.

5. Anchor jamb legs to floor/foundation per SYNTHEON engineered drawings, then install top track. (Figure 15)

6. Place ‘L’ header over top track and screw to track and cripple studs per SYNTHEON engineered drawings.

Note: Do not splice top track over window and door headers.
DOOR AND WINDOW TRIM

1. Measure width of opening, then cut a piece of track to width of opening. (Figure 16)

2. Place head track into opening and check for level. Screw track legs to cripple studs with #10 X 1” pancake head screws. Repeat same process for window sill.

3. Measure height of rough opening and cut jamb track to opening height (Figure 16). Place track into opening, then slide up tight to underside of header track and check for plumb. Screw flange of track to jamb stud per screw call out on SYNTHEON engineered drawings. (Figure 17)

Note: Lumber may be used in rough opening in addition to metal by screwing directly into track.
TOP TRACK

**Note:** Top track should be installed as you progress. Keep in mind that any headers designed to be placed under the top track must be installed prior to installing the top track. ‘L’ headers, on the other hand, are installed after the top track is installed. Refer to the Door/Window Schedule on SYNTHEON engineered drawings to determine the type of header being used at each opening.

Pull a control line at the top of the wall from corner to corner before setting top track to ensure that the wall is straight. If the wall is misaligned at any point, it can be straightened while the top track is being installed.

1. Begin installing the top track at the same location in which the bottom track was started. Cut the end of the top track (at the corner of the wall) to mirror the bottom track. (Figure 18) Place track over top of wall panel and push down until panel is completely seated inside track. Screw track to wall studs on both sides of wall.

**Note:** Track should be laid out so that the splice joints are centered over a stud but not over a window or door header.

2. Butt the next piece to the first piece and repeat these steps until all of top track is installed.

3. Install splice plates over joints where track ends meet. Refer to SYNTHEON engineered drawings for splice plate detail. Splices should occur over the centerline of a C-C stud. Splices should not occur over headers. (Figure 19)
**SHEAR WALL (X-BRACING)**

- **Note:** Shear wall X-bracing should be installed after roof sheathing is installed but before temporary bracing is removed.

1. Install Hold Down anchors to bottom of HDS studs per SYNTHEON engineered drawings screw and anchor bolt call out.

2. Install HDS studs at locations identified on SYNTHEON engineered drawings.

3. Measure from lower corner of the HDS to the upper corner of the HDS on the opposing side and cut strapping to this length.

4. Screw strapping to face of HDS in an ‘X’ pattern. Be sure to pull on the strapping while screwing so that it lays taut and flat against the stud flanges. (Figure 20)

- **Note:** The following information will be called out on SYNTHEON engineered drawings:
  - Screw size, quantity, and spacing
  - Strapping size, gauge and yield strength
  - Hold Down anchors, screw size and quantity, anchor bolt size

- **Note:** Other shear wall methods can be designed and used with the ACCEL-E wall system.
INFILL CURTAIN WALL INSTALLATION
EXTERIOR SIDE BOTTOM ANGLE

1. Layout and mark the location of the angles outside edge.
2. Start at an outside corner and miter angle. (Figure 1)
3. A continuous bead of waterproof sealant should be applied under bottom of angle to seal between track and floor.
4. Align outside edge of angle with layout line and anchor per SYNTHETON engineered drawings anchor call-out.
5. Place the next piece of angle by butting the trailing end against the leading end of the previously installed piece.

Note: Do not continue angle through door openings. Refer to SYNTHETON engineered drawings floor plan for rough openings. Do not overlap angle at outside corners or at butt joints.
6. Continue this process until all exterior side angles are installed.

DEEP LEG TOP TRACK

1. Plumb up from vertical leg of exterior bottom angle at a corner and mark. Repeat this at an opposite corner. Chalk a line between the two marks.
2. Start at an outside corner and miter the deep leg track. (Figure 1)
3. Align outside edge of deep leg track with chalk line and anchor per SYNTHETON engineered drawings anchor call-out.
WALL PANELS

1. Select any outside corner as a starting point and note the panel identification number on the drawing floor plan. The panel identification numbers are marked on the ends of the panels. (Figure 2)

2. Slide outside corner post over the edge of the corner panel by laying the panel on its long edge. Line post up with backer leg towards the interior of panel and slide on. (Figure 3) Refer to SYNTHEON engineered drawings for corner post orientation.

Note: Inside corners are set similar to outside corners. Refer to SYNTHEON engineered drawings for orientation of inside corner post.

3. From the interior of the building, slip both pieces up into deep leg track with the open stud cavity towards the inside. Push bottom of panel against the exterior bottom angle. Refer to drawing floor plan for the dimensional location of the first panel stud to verify that the corner panel is in the correct position. Screw panel studs to exterior bottom angle with #10 pancake head screws.

DO NOT SCREW PANEL TO DEEP LEG TRACK. (Figure 4)
4. Locate next panel per drawing sequence, slip into track and slide tongue and groove together. (Figure 5)

5. Insert Spazzer bar into stud knockouts at joint between panels. Rotate Spazzer bar 90 degrees to lock in place. Install one Hex Head screw at each stud alternating the location (Figure 6) to prevent rotation of lateral bracing.

Refer to SYNTHEON engineered drawings for vertical spacing of Spazzer bar.

6. Repeat steps (4) and (5).
DOOR AND WINDOW JAMB STUDS

1. Refer to the Door/Window Schedule on SYNTHEON engineered drawings for header and jamb construction details and member sizes.

2. Attach anchor clip to bottom of jamb leg with #12 Hex Head screws. (Figure 7)

3. Slip deflection clip into deep leg track and attach to steel per SYNTHEON engineered drawings so that the clip’s vertical leg aligns with window/door rough opening. (Figure 8)

4. Slip jamb legs into deep leg track alongside the deflection clip and align inside edge of jamb leg with edge of window/door rough opening. (Figure 9)

5. Make sure jamb leg is plumb, then attach to deflection clip with provided deflection clip screws.
INTERIOR SIDE BOTTOM ANGLE

1. Start at an inside corner and miter angle.
2. Slide angle under panel and jamb studs from the interior side of wall. (Figure 10)

3. Hold tight against studs and anchor to floor per SYNTHEON engineered drawings anchor call-out.
4. Screw panel studs to interior bottom angle with #10 pancake head screws.
**ANCHOR JAMB LEGS**

1. Anchor jamb legs to floor/foundation per SYNTHEON engineered drawings. (Figure 11)

**DOOR AND WINDOW HEADERS**

1. Refer to the Door/Window Schedule on SYNTHEON engineered drawings for header and jamb construction details and member sizes.

2. Attach 1 1/2” angle to top of header with #12 hex head screws. Align the vertical leg of angle with the interior face of the header. (Figure 12)
3. Insert pre-cut header into notched-out panel stud and attach continuous angle to cripple studs with #10 pancake head screws. (Figure 13)

DOOR AND WINDOW TRIM

1. Measure width of opening, then cut a piece of track 1/4 inch shorter than width of opening. (Figure 14)
2. Place head track into opening and check for level. Screw track legs to cripple studs with #10 pancake head screws. (Figure 15) Repeat same process for window sill.

3. Measure height of rough opening and cut jamb track to opening height. (Figure 14) Place track into opening, slide up tightly to underside of header track and check for plumb. Screw flange of track to jamb stud per screw call out on SYNTHEON engineered drawings. (Figure 15)

Note: Lumber may be used in rough opening in addition to metal by screwing directly into track.

4. Install clip angles in all corners of opening and screw into track with #10 pancake head screws per call out on SYNTHEON engineered drawings. (Figure 16 and 17)
BYPASS CURTAIN WALL INSTALLATION
BOTTOM TRACK

1. Layout and mark the location of the outside edge of track with chalk lines.

2. Start at an outside corner and miter one end of track. (Figure 1)

3. A continuous bead of waterproof sealant should be applied under bottom track to seal between track and floor. (Supplied by others. See Figure 2)

4. Align outside edge of track with chalk line and anchor per SYNTHEON engineered drawings anchor call-out.

5. Place the next piece of track by butting the trailing end against the leading end of the previously installed piece. (Figure 3)

✓ **Note:** Do not continue track through door openings. Do not overlap track at corners or butt joints.

6. Continue this process in one direction until all track is installed. Remember to refer to SYNTHEON engineered drawings for corner details.

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**Figure 1**

**Figure 2**

**Figure 3**
**DEFORMATION CLIPS**

1. Layout and mark the location of the deflection clips for all panel studs and jamb studs so that the flat surface of the clip lies against the flat surface of the panel stud.

2. Attach deflection clips to building structure per SYNTHEON engineered drawings anchor call out. (Figure 4)

**HDS DOOR AND WINDOW JAMB STUDS**

1. Refer to the Door/Window Schedule on engineered drawings for header and jamb construction details and member sizes.

2. Attach anchor clip to bottom of jamb leg with #12 x 1” Hex Head screws. (Figure 5)

3. Set jamb legs into track and align inside edge of jamb leg with edge of window/door rough opening and attach to interior leg of track with two #10 x 1” pancake head screws. (Figure 6)

4. Make sure jamb leg is plumb in both directions, then attach to deflection clip with provided deflection clip screws.

5. Anchor jamb legs to floor/foundation per SYNTHEON engineered drawings. (Figure 7)
WALL PANELS

1. Select any outside corner as a starting point and note the panel identification number on the drawing floor plan. The panel identification numbers are marked on the ends of the panels. (Figure 8)

2. Slide outside corner post over the edge of the corner panel by laying the panel on its long edge. Line post up with backer leg towards the interior of panel and slide on. (Figure 9) Refer to SYNTHEON engineered drawings for corner post orientation.

3. Set both pieces into track with the open stud cavity towards the inside. Refer to drawing floor plan for the dimensional location of the first panel stud to verify that the starter panel is in the correct position. Screw panel studs to track on both sides of wall. (Figure 10)
4. Plumb panel and attach to deflection clips with provided deflection clip screws. (Figure 11)

**Note:** All outside corner posts are directional. The open throat of the post will always be facing in the direction that the panels are being installed.

5. Locate next panel per drawing sequence, set in track, and slide tongue and groove together. (Figure 10)

6. Insert Spazzer bar into stud knockouts at joint between panels. Rotate Spazzer bar 90 degrees to lock in place. Install one Hex Head screw at each stud alternating the location to prevent rotation of lateral bracing. (Figure 12)

    Refer to SYNTHEON engineered drawings for vertical spacing of Spazzer bar.

7. Repeat steps (4), (5), and (6).
DOOR AND WINDOW HEADERS

1. Refer to the Door/Window Schedule on SYNTHEON engineered drawings for header and jamb construction details and member sizes.

2. Attach 1 1/2” angle to top of header with #12 hex head screws. Align the vertical leg of angle with the interior face of the header. (Figure 13)

3. Insert pre-cut header into notched-out panel stud and attach continuous angle to cripple studs with #10 pancake head screws. (Figure 14)

DOOR AND WINDOW TRIM

1. Measure width of opening, then cut a piece of track 1/4 inch shorter than width of opening. (Figure 15)

2. Place head track into opening and check for level; screw track legs to cripple studs with #10 X 1” pancake head screws (Figure 16). Repeat same process for window sill.
3. Measure height of rough opening and cut jamb track to opening height (Figure 15). Place track into opening, slide up tightly to underside of header track and check for plumb. Screw flange of track to jamb stud per screw call out on SYNTHEON engineered drawings. (Figure 16)

**Note:** Lumber may be used in rough opening in addition to metal by screwing directly into track.

4. Install clip angles in all corners of opening and screw into track with #10 pancake head screws per call out on SYNTHEON engineered drawings. (Figure 17 and 18)

**TOP TRACK**

1. Cut one end of the top track (at the corner of the wall) to mirror the bottom track. (Figure 19) Place track over the top of wall panel and push down until the panel is completely seated inside the track. Screw track to wall studs on both sides of wall with #10 X 1” pancake head screws.

**Note:** Track should be laid out so that the splice joints are centered over a stud.

2. Butt the next piece to the first piece and repeat until all of the top track is installed.

3. Install splice plates over joints where the track ends meet. Refer to SYNTHEON engineered drawings for splice plate detail. Splices should occur over the centerline of a panel stud. (Figure 19 and 20)
GLOSSARY OF TERMS:

Blocking: Solid block or piece of material placed between structural members to provide lateral bracing as in bridging and/or edge support for sheathing.

Bridging: Cross bracing or blocking placed between joists to provide lateral support.

C-Shape: A basic, cold-formed steel shape used for structural framing members (such as joists). The name comes from the member’s “C” shaped cross-sectional configuration consisting of a web, flange and lip. It is also called a “C-section”. Web depth measurements are taken to the outside of the flanges. Flange width measurements also use outside dimensions.

CC-Stud: A proprietary cold-formed steel stud shape used for structural framing members in the SYNTHEON ACCEL-E panels. The name comes from the member’s double “C” shaped cross-sectional configuration consisting of two webs, three flanges, and two lips. CC-Stud measurements are taken from the outside of the outer flanges.

Clip Angle: An L-shaped short piece of metal (normally with a 90-degree bend) typically used for connections.

Cripple Stud: A stud that is between a header and a window or door head track or between a window sill and the bottom track.

EPS: Expanded Polystyrene

Flange: The part of a C-Shape or track that is perpendicular to the web.

Flat Strap: Sheet steel cut to a specified width without any bends. Typically used for bracing and transferring loads by tension.

Floor Joist: A horizontal structural framing member that supports floor loads.

Header: A horizontal structural-framing member(s) used over wall openings to transfer loads to adjacent framing members.

HDS: Heavy Duty Stud

In-Line Framing: Framing method where all vertical and horizontal load carrying members are aligned.

Jack Stud: A stud that does not span the full height of the wall and provides vertical bearing for headers.

Jamb Stud: A stud adjacent to a jack stud that spans the full height of the wall and supports vertical and lateral loads.

Knock-out: A hole or opening in the web of a steel-framing member allowing for the installation of plumbing, electrical, and other utility installation. A knock-out may be made during the manufacturing process or in the field with a hand punch, hole saw, or other suitable tool.

Lip: The part of a C-Shape that extends from the flange at the open end. The lip increases the strength characteristics of the member and acts as a stiffener to the flange.

Loads, Dead and Live: Dead loads are the weight of the walls, partitions, framing, floors, ceilings, roofs, and all other permanent construction entering into and becoming a part of a building. Live loads are transient, sustained loads usually created by people and furnishing, respectively.

Span: The clear horizontal distance between bearing supports.

Structural Sheathing: The covering (e.g., plywood or oriented strand board) used directly over structural members (e.g., joists, studs) to distribute loads, provide lateral stability to the framing members, and generally strengthen the assembly.

Track: A framing member consisting of only a web and two flanges.

Web: The part of a C-Shape or track that connects the two flanges.

Web Stiffener: Additional material that is attached to the web to strengthen the member against web crippling. Also called a bearing or transverse stiffener.
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