

GENERAL INFORMATION, RECOMMENDATIONS & INSTRUCTIONS FOR PROTEC® SIP's

GENERAL

- Keep all panels, steel components and fasteners protected from the elements prior to installation.
- Store the panels laying flat.
- Do not drop panels.
- Remove debris from the foundation wall, slab, or floor, so that the sill channel can be connected securely thereto.
- Remove debris from sill channel area prior to the placement of a panel on the sill channel.
- Use care in placing panels on the sill channels.
- The sill channel must be installed back from the edge of the foundation wall, slab, or floor, so that the outer panel skin bears on the foundation, slab, or floor.
- The sill and top channels shall be installed so that the butt joint between channels does not occur less than 12" from any panel joint.
- The top channel shall be installed so that the butt joint between channels does not occur in the header above a window, door, or other opening in the wall.
- During the process of assembling and plumbing the panels, and prior to the use of the pneumatic nails, connect the corners of the panels to the steel components with the proprietary screws.
- It is recommended that the building of the panel wall start with the assembly and erection of a corner.
- The corner panel units and steel angles making up the corner assembly shall be plumbed and fastened together before proceeding further.
- When the next panel is installed snug to the corner, plumb the corner and the panel and fasten them to the sill channel and to each other.
- As additional panels are installed, they must be snug to the previously erected panels and plumbed prior to the installation of the fasteners.
- The T Clear proprietary fasteners and ITW Buildex GYP-FAST pneumatic nails used to connect the panels to the steel components, shall be installed 8" on center and no more than 3" from the end of any individual steel component.
- It is recommended that adequate bracing of panel walls be provided during erection.
- It is recommended that the top channel be installed and secured as the erection of the wall proceeds and only after there is sufficient length of wall to accommodate a top channel.

FOUNDATION & SLAB ON GRADE

- Foundation walls and the outer edges of slabs on grade should be level, square, have a smooth top free of irregularities, and have sides that are straight. Standard corners should be 90 degrees, Corners other than 90 degrees can be accommodated with custom made panels.
- The use of Sill Seal or equivalent material, or silicone caulking is recommended between the top of the foundation wall or slab and the steel sill channel..
- Steel sill channel shall be anchored to the foundation as per code. Where permitted by local building officials, expansion bolts and/or powder actuated fasteners can be used to anchor sill channel.
- When the steel channel is used as a sole plate attached to a wood substructure and perpendicular to the floor joists, it will be attached to each joist it crosses using either a coated 16d nail or a corrosion resistant #14 - 10 X 2 1/2" pan head screw. Where the steel sole channel is laid parallel to the floor joists, on an end or rim joist, as shown in Detail FS-4-HN, it shall be attached every 16" O.C. using the same nail or screw indicated above.

FOUNDATION & SLAB ON GRADE (continued)

- It is recommended that at the corners, the sill channels be formed and installed as shown in Detail FS-9 or FS-10.
- To prevent water infiltration at the sill channel, it is recommended that Ice & Water Guard or equivalent material be used as shown in Details FS-1, FS-2, and FS-4 through FS-8.
- In situations where the exterior wall finish is applied directly to the panel, such as a hard coat or elastomeric finish, Silicone Caulking as shown in Detail FS-1A-HN, is recommended to prevent water infiltration. In addition Silicone Caulking can be used as an alternate for an Ice & Water Guard type material
- It is recommended that THERMADRY® Insulating Drainage Panels be installed on the exterior of the foundation walls, as shown in Details FS-4-HN through FS-8-HN.

STEEL COMPONENTS & FASTENERS

- All steel components, angles, channels, splines and H-studs, used as part of the ProTEC® panel system shall be a minimum of 20 gauge, G-90 Galvanized Steel.
- All steel components not normally part of the ProTEC panel system, but used as part of the structure with the ProTEC panel system, i.e. the studs, structural C channel and structural track shown in Detail WC-11, shall be a minimum of 20 gauge G-90 Galvanized steel and sufficient to handle the loads placed upon them.
- The fasteners used to connect the ProTEC panels to the steel components shall be #14-10 X 1 5/8" T Clear Driller and 1 1/2" GYP-FAST™ knurled shank pneumatically driven nail, both spaced 8" on center.

WALLS

- Walls having corners other than 90 degrees can generally be constructed by using metal components having corresponding angles and using standard fabrication procedures. Unusually shaped corners may require specialized fabrication.
- It is recommended that at the corners, the top channel be installed as shown in Detail EWR-9-HN, or similarly using a one piece top channel shown in Detail FS-10.
- In situations where one 2" X 4" wood top plate is used in addition to the steel top channel, as shown in Detail EWR-10A-HN, the wood top plate shall be connected to the steel top channel with a corrosion resistant 2 1/4" flat or pan head screw every 24" on center, and to the outer skin of the panel using the 1 1/2" pneumatic nails every 16" on center.
- In situations where a second 2" X 4" wood top plate is used on top of a wood top plate already connected to the steel top channel, as indicated above, the second wood top plate can be connected using nails or screws, per code requirement.
- All panel joints shall be sealed with fibreglass mesh and latex modified thin set mortar. See Detail EWR – 14.
- For rough openings for standard windows, steel channels shall be inserted into the jamb, sill, and header panels. Steel splines shall also be used between the header panel and the side support panels. All panel components shall be connected to the steel components using the T Clear proprietary fasteners. See Details WD-1 and WD-3.
- For rough openings for standard doors, steel and panel components are connected in the same fashion as described above, without the sill panel or channel. See Details WD-2 and WD-3.
- For exterior rough openings, all headers, jambs and sills shall be backwrapped with T Clear Fibreglass mesh embedded in Bonsal WP 6000 liquid water proofing medium or equal. A Drip edge may be used on the header in place of the backwrapped mesh. See Detail EWR – 14.

ROOF TO EXTERIOR WALL CONNECTIONS

- Whether the roof structure is joist and rafter construction or roof truss construction, it is connected to the exterior wall steel top channel using steel connectors (Clip Angles or Ties). It is recommended that Simpson Strong-Tie® Connectors or equivalents be used. Details EWR-1-HN, EWR-2-HN and EWR-7-HN show the use of Simpson A23 Clip Angles. Details EWR-3-HN through EWR-6-HN and EWR-8-HN show the use of Simpson H1 and SH1 Ties. Details EWR-11-HN through EWR-13-HN show the use of Simpson H2.5 Tie. Other Ties such as Simpson H3, H4, H5 and H10 or equivalents can be used.
- Where the roof structure is metal, screws shall be used to connect the Simpson Ties, or equivalents, to metal roof components and the proprietary screws or pneumatic nails used to connect the Ties to the metal top channel.
- Where the roof structure is wood, nails or screws can be used to connect the Simpson Ties to wood roof components and the proprietary screws or pneumatic nails used to connect the Ties to the metal top channel.
- Where the roof structure is wood and rests on a wood top plate and no metal tie is desired or required, nails shall be used to connect the roof structure to the wood top plate, per applicable code.
- Where it is necessary to connect three metal components to the panel, i.e. a Simpson Tie to an H-stud and a top C channel, only the proprietary screw fastener shall be used.

ELECTRICAL

- Each panel has one vertical electrical chase, See Detail WC-9A. Panels with two electrical chases are available, See Detail WC-9B.
- Electrical boxes can be installed in the panel by lining up the box location with the electrical chase, cutting the panel skin to accommodate the box and removing enough panel core material to accommodate the box. A Roto Zip tool is recommended for cutting the panel skin and a Hot Knife can be used for quick and easy removal of the foam core.
- The electrical box is secured to the panel by using what is commonly called an “old work box” or by using metal “F Clips or Hold-Its”.
- Panels are available with electrical boxes already installed along the vertical electrical chase.
- Never cut the panel’s skin to provide an additional electrical chase or change the direction of the electrical chase.
- Cut, punch or saw 1 1/4” diameter holes in the top and/or bottom channels so that these holes line up with the electrical chases that will be used. A drill with a step drill bit is recommended.
- Remove the burr from these holes or install an appropriately sized grommet prior to the installation of electrical wire.
- When the electrical wires are being run from below, the 1 1/4” hole should be made in the sole channel so it lines up with the vertical electrical chase, prior to the installation of the panel on the sole channel.
- When the electrical wires are being run from above, the 1 1/4” hole should be made in the top channel so it lines up with the vertical electrical chase, prior to or during the installation of the top channel.

FIELD FABRICATION

Even on factory fabricated panels, slight modifications may be necessary to accommodate variations due to field conditions. The most common modifications include cutting the panel to reduce its width, cutting headers and window bases, and cutting panels to accommodate special situations. In most cases, modifications to panels are not difficult to make.

FIELD FABRICATION (continued)

- It is recommended that a circular saw with a carbide tip blade be used to cut the panel.
- Because of the thickness of the panel, the use of a hand held circular saw requires a cut be made on each side of the panel.
- It is important that accurate measurements be made and the cut line be marked on each side of the panel. Mark the first side and square across the panel to transfer reference points to the second side. Using the reference points, mark the second side.
- The marking of both sides of the panel should be complete before any cut is made.
- It is recommended that a pencil be used to mark the cut lines. The use of a chalk line is not generally recommended, because the chalk line can be easily wiped away in handling or blown away by the approaching saw blade. Thus, there is little or no cut line to follow.
- Metal straight edges and framing squares are helpful tools for marking lines.
- Care should be taken to follow the cut line. Where applicable, use should be made of the guide bar on the circular saw.
- Use the maximum depth of cut setting and make a straight cut following the cut line. Flip the panel over and make another straight cut following the cut line.
- For cuts close to the panel's edge, use the guide bar on the circular saw.
- The cutting of the panel will remove some or all of the factory installed slots necessary for the installation of the steel components. These will have to be replaced as follows:
 - Set the circular saw blade depth at 2 1/8".
 - If the factory install slots have not been completely removed, set the circular saw guide bar, if possible, so that the blade will cut along the slots to deepen them to 2 1/8".
 - If the factory installed slots have been removed, use the slots on both ends of the panel to set the guide bar on the circular saw, if possible. If it is not possible to use the guide bar, mark the cut lines on the panel. Then using either the guide bar or cut lines, cut the new 2 1/8" deep slots.
- When cutting a panel to reduce its width by 10" or less, make the cut on the side where there is no vertical electrical chase.
- Do not make any cuts to reduce the panel width on panels with 2 vertical electrical chases.
- Headers cut for spans greater than 3 feet should not contain an electrical chase.