

# **TechPanel™**

## Installation Basics: Florida Product Number (FPN)

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# Getting Started: Pre-Installation

The following is a general overview and should be reviewed prior to your project shipping. Please refer to ZS2 Install Drawings, Specifications, and Instructions for installation of your individual project.

**Note:** For any discrepancies, the ZS2 Installation Drawing set takes precedence.

## Important Safety Note:

Practicing SAFE work procedures are vital to preventing injury. SAFE work procedures should always be accompanied by proper training. If you have questions about the safe work procedures or practices used in your workplace, don't be afraid to speak up and ask questions. Remember, workplace injuries are preventable. Training and Safety Procedures are the responsibility of the builder/installer of the TechPanels.

## Preparing for TechPanels to Arrive

1. Ensure you know the contact information for the ZS2 TechPartner Project Manager (PM) for your project.
2. Review your ZS2 Installation Drawing set in detail before starting construction. If there are any discrepancies or questions, contact your ZS2 TechPartner PM.
3. The footings/slab and floor system **MUST BE** level and square before the bottom plate is secured. Bottom Plate to be installed on existing structure with anchors as designed by the specialty engineer for each project. Squareness and proper alignment of the bottom plates are critical to the TechPanel system. (See sheet "BOTTOM PLATE" in the ZS2 Installation Drawings) Double check foundation dimensions as soon as it is completed and communicate any discrepancies with your ZS2 PM.
4. All straps and hold downs must be installed as specified by floor and roof manufacturers.
5. It is the installer's responsibility to follow the ZS2 Installation Drawings as specified as they have been created from approved engineered drawings.

6. Follow all recommended connection details and fastener spacing listed on ZS2 Installation Drawing Package.
7. For electrical: EPS core has a minimum 1-¼ inch diameter horizontal chases located at 16 inches and 48 inches from bottom of panel and 1 vertical chase located at the center line of the panel. Confirm electrical chase placement with ZS2 Installation drawings and panel markings. Predrill electrical chase in corresponding bottom plate, top plate, and splines as per electrical drawings by others. (if required)
8. Installer must continually check to make sure that all centerline dimensions are maintained.
9. Top plate and adequate bracing must be considered during construction.
10. TechPanels to be installed as manufactured. Any alterations or modifications need to be approved in writing by a ZS2 PM.

## **What's Included in a Typical ZS2 Package?**

- ✓ SIPS Panels
- ✓ ZS2 Installation Drawing Set
- ✓ All mechanical fasteners for TechPanel connections
- ✓ Construction adhesive and low expansion spray foam
- ✓ Top plate lumber
- ✓ Lifting sling. Note: bolts will be included in the panel if required
- ✓ Hot wire tool for modifying panels if required

**Anything not listed above is the responsibility of the installer and includes but is not limited to bottom plate lumber and anchors. Bottom plate anchors are specified in the ZS2 Installation Drawing Set.**

## Understanding your ZS2 Installation Drawing Set

It's imperative that you understand the Installation Drawing set prior to panels arriving. ZS2 Installation Drawings take precedence over this guide. Please review the following drawings in detail located in your ZS2 Installation Drawing set:

- DO'S AND DON'T'S
- BOTTOM PLATE PLAN
- ELEVATIONS  
(including exploded views and install order)
- DETAILS

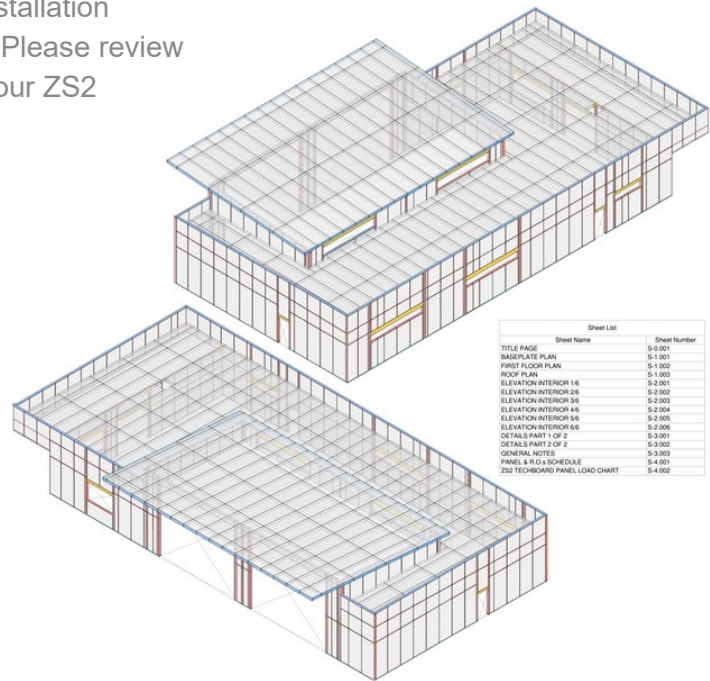


Figure 1: ZS2 Installation Drawings

## Review the ZS2 Delivery Checklist

It is the responsibility of the on-site installation team to review the shipped contents and report any discrepancies to the ZS2 TechPartner Project Manager asap.

- ☐ Confirm all panels are accounted for.
- ☐ Check for damage. Report all damage with photos and description to your ZS2 TechPartner Project Manager within 48 hrs.
- ☐ Confirm and inventory ship loose items:
  - ✓ Install drawings
  - ✓ Fastener
  - ✓ Adhesive
  - ✓ Foam
  - ✓ Lifting Hardware
  - ✓ Foam Scoop
  - ✓ Site installed lumber and sheathing

## Start With a Good Foundation

Confirming the bottom plate is level and within the specifications outlined in this guide and the drawings at this stage, regardless of the foundation type, directly affects the efficiency of the install. Taking the time upfront reduces costly onsite modification.

Refer to Appendix III for details.

## Storage and Handling

ZS2 TechPanels must be fully supported and protected from the weather elements if storing them prior to install.

### Quick Tips for Storing TechPanels:

1. Store panels on a flat surface with supports placed at least 4'-0" on center.
2. Cover stored panels with tarps or similar protective wraps.

## Fasteners

### Adhesive and Spray Foam

Both construction adhesive and spray foam are applied in continuous beads along all TechPanel connection locations. (Ex. Panel to Panel, Panel to Bottom Plate, Panel to Top Plate, etc)

### Fasteners

1. ZS2 Techpanels™ uses nails at 3" O.C. for the connection of splines and structural members. Each project should be reviewed by the SIP Engineer to make sure that the minimum fastener patterns satisfy design conditions.
2. SIP screws and washers, typically 8"-12" OC are used at corner connections and roof connections. Refer to Install Drawing Set for exact locations.

## **TechPanel Assembly**

- ½ inch thick TechBoard
- 2x6 SPF No.2 or Better Lumber Splines at maximum 48 inches on centre spacing
- 2x6 SPF No.2 or Better Lumber Top and Bottom Plates
- 5-½ inch thick Expanded Polystyrene Core (EPS)
- ½ inch thick TechBoard

TechPanel is shipped to site as a complete assembly as follows:

Splines are 2 plies assembled with the use of 2 rows of 3/8 inch beads of Titebond Subfloor Adhesive and 2 rows of 3 inch by 0.120 smooth shank coil nails at 8 inches on centre spacing.

TechBoard is adhered to EPS with Henkle Loctite UR S119 on both faces and pressed according to Manufacturer recommendations.

Spline is installed within pressed panel at maximum 48 inches on centre spacing with 1 row of 2-½ inch x 0.094 Ring Shank Nails, Hot Dip Galvanized Coil Nails at 3 inches on centre spacing.

Top Plate installed as single ply with 1 row of 2-½ inch x 0.094 Ring Shank Nails, Hot Dip Galvanized Coil Nails at 3 inch on centre spacing. Temporary Lumber installed within remaining top void to accommodate shipping. Temporary Lumber is removed on site and permanent lumber is installed following installation of adjacent TechPanels to provide continuity between TechPanels.

Bottom Plate is installed as double ply and assembled same as splines. Installation into pressed panel same as spline installation with 2 rows of 2-½ inch x 0.094 Ring Shank Nails, Hot Dip Galvanized Coil Nails at 3 inches on centre spacing.

# Installation Basics

## Bottom Plate Layout

1. Reference Bottom Plate Plan in the Installation Drawing Set.

**NOTE:** Bottom Plates need to be installed on level surface. Tech Panels require both the interior and exterior sheathing to be in contact with the subfloor. For discrepancies of +/- 1/4" shimming of bottom plate may be needed. When in doubt call your ZS2 PM.

2. Install using project specific fasteners.
3. **ALL BOTTOM PLATES SHOULD BE INSTALLED AND VERIFIED PRIOR TO ANY TECHPANEL INSTALLATION.**

## TechPanel Install

Before you can install your TechPanels, you need to ensure that you are prepared. The following are some quick tips PRIOR TO installing TechPanels:

1. Clean out the connections of the TechPanels. Both the tongue and groove need to be clean and smooth.
2. Double check you have the appropriate lifting methods for installation - lifting eyes, lifting sling, crane, zoom boom
3. Assign your team. Typical install teams include:
  - (1 ) Site lead (Foreman)
  - (1-2) Prep team
  - (2) Install team
  - (1) Equipment operator



## Placing the First TechPanel: Start with a Corner

1. Typically starting at a corner connection, begin with Wall 1 TechPanel A. (Noted as W1-A on TechPanel).
2. Orient the TechPanel (know your A Side and your B side) **NOTE:** Side A is the side with the panel TAG/Label. It is typically the inside face of a panel.
3. Find the corresponding corner panel to Wall 1 TechPanel A (W1-A).
4. Apply adhesive and spray foam to bottom plate and vertical spline, and then stand TechPanels in place. **NOTE:** It's best practice to not over apply the adhesive and foam beyond the panel being installed.

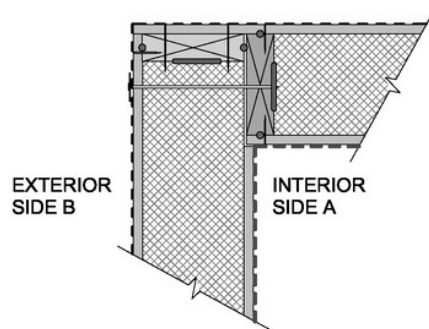


Figure 2: ZS2 Typical TechPanel Corner Connection

5. Ensure both Tech Panels are plumb, level and square.
6. Using specified fasteners, tack both TechPanels to the corresponding bottom plate. Once plumb, level and square, all fasteners can be secured.
7. Continue with TechPanel installation as per drawings. Optimal spacing between TechPanels is 1/8".
8. Once 3-4 panels are installed, best practice is to install the top plate for wall stability. Ensure the lifting bolt is hammered down, then install continuous top plate across the TechPanels using 4 beads of construction adhesive along each side of the TechPanel and 2 on the underside of the plate.  
**NOTE:** The last panel to be installed needs to run past the adjoining wall to avoid conflict, so ensure to plan for this ahead of time.

## Finishing Up

1. Seal all penetrations in the panels after plumbing and electrical are in place with expanding foam sealant, including electrical, plumbing and HVAC.
2. Wall panels should have a code approved weather-resistant barrier applied as required by the local applicable code. All exterior cladding solutions are to be reviewed and designed by the project engineer and designed in accordance with local applicable codes.
3. Confirm all fasteners are installed at each TechPanel connection.

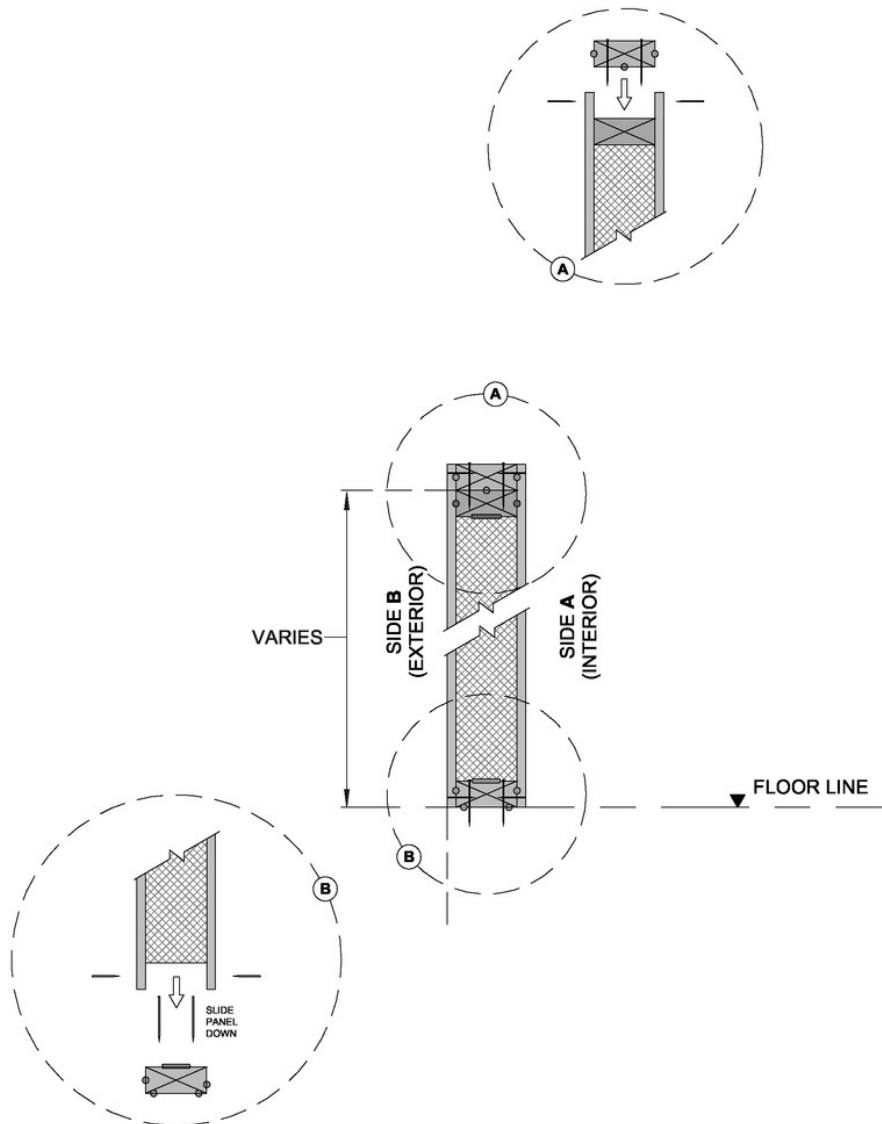
**Concurrent with the ZS2 installation manual and installation drawing requirements, all TechPanel projects require a full structural engineered design to accommodate design loads in accordance with the 2023 Florida Building code for the use in High Velocity Hurricane Zones (HVHZ). Load charts for axial, racking shear, and transverse loading have been produced based on third-party testing. All load charts are also third-party engineer reviewed and are available for design use.**

**The outlined TechPanel assembly has been tested successfully in accordance with the testing standards and requirements set out in TAS 201, 202 and 203 for a maximum design pressure of 110 PSF.**

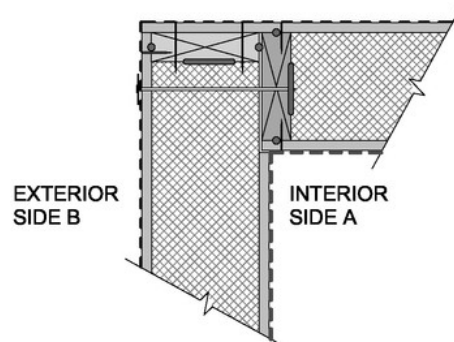
## Appendix I: Recommended Onsite Tool Checklist

- |   |  |
|---|--|
| <input type="checkbox"/> Wrench set   | <input type="checkbox"/> Grinder 5" – Able to grind cement   |
| <input type="checkbox"/> Hand broom for cleaning openings                         | <input type="checkbox"/> Framing hammer  |
| <input type="checkbox"/> Extension cords  | <input type="checkbox"/> Various levels (6', 8', laser)  |
| <input type="checkbox"/> Dead blow hammer   | <input type="checkbox"/> Various sizes of caulking gun   |
| <input type="checkbox"/> Ladders  | <input type="checkbox"/> Various squares (Framing, Speed, 12"-24" )  |
| <input type="checkbox"/> Wide Ratchet Straps – cinching TechPanels together       | <input type="checkbox"/> Tape Measure - Metric/Imperial  |
| <input type="checkbox"/> Sawhorses/working tables                                 | <input type="checkbox"/> Various quick clamp sizes (2, 4', 6')   |
| <input type="checkbox"/> Various pry bars (flat, cats paw, crow)                  | <input type="checkbox"/> Utility knives  |
| <input type="checkbox"/> Burk Bar or large pry bar                                | <input type="checkbox"/> Rolling scaffolding (applicable for projects over 8' or any TechPanel roof project) |
| <input type="checkbox"/> Chalk line & chalk (2 colours recommended)               | <input type="checkbox"/> Power Planer (minimum 2")   |
| <input type="checkbox"/> Air compressor   | <input type="checkbox"/> Reciprocating saw w/blades  |
| <input type="checkbox"/> Air hoses & fittings                                     | <input type="checkbox"/> Hammer Drill and associated bits ( for drilling concrete)                           |
| <input type="checkbox"/> Air nailer for 3 1/4" nails (for top plate installation) |  |
| <input type="checkbox"/> Mitre saw - 12" preferred                                |  |
| <input type="checkbox"/> Circular saw for lumber & TechBoard cuts if required     |  |

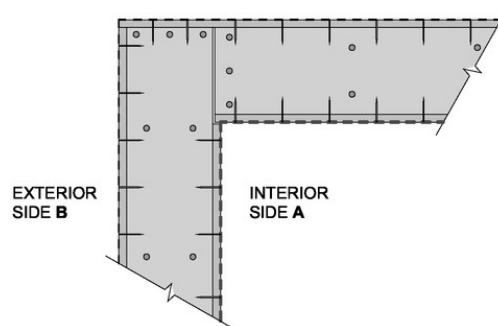
## Appendix II: Common Details



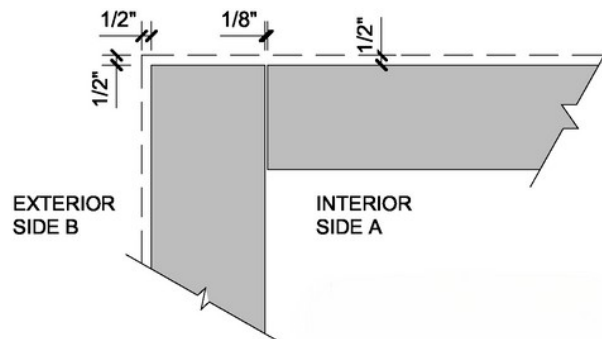
**ZS2 TECHPANEL BOTTOM/TOP PLATE CONNECTION**



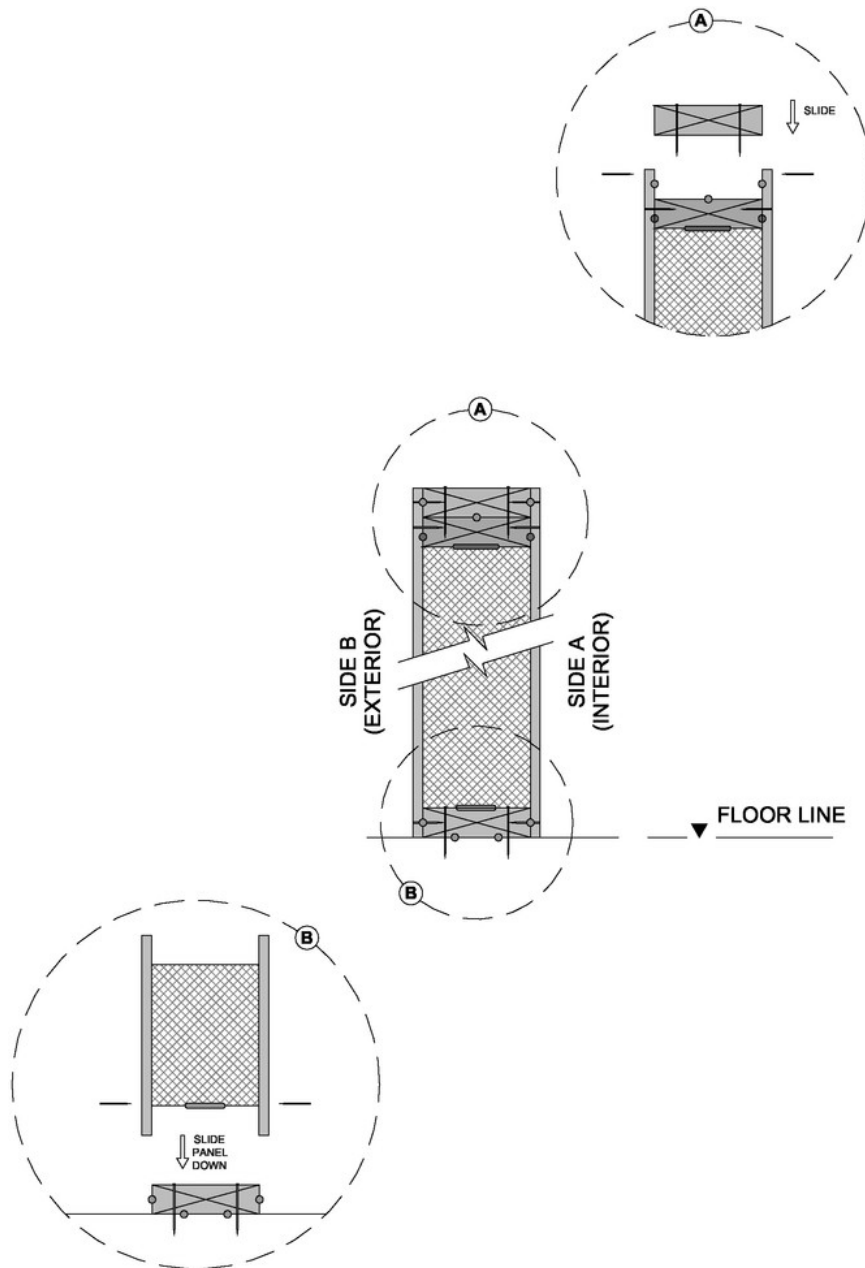
**ZS2 TECHPANEL TYP.  
CORNER CONNECTION**



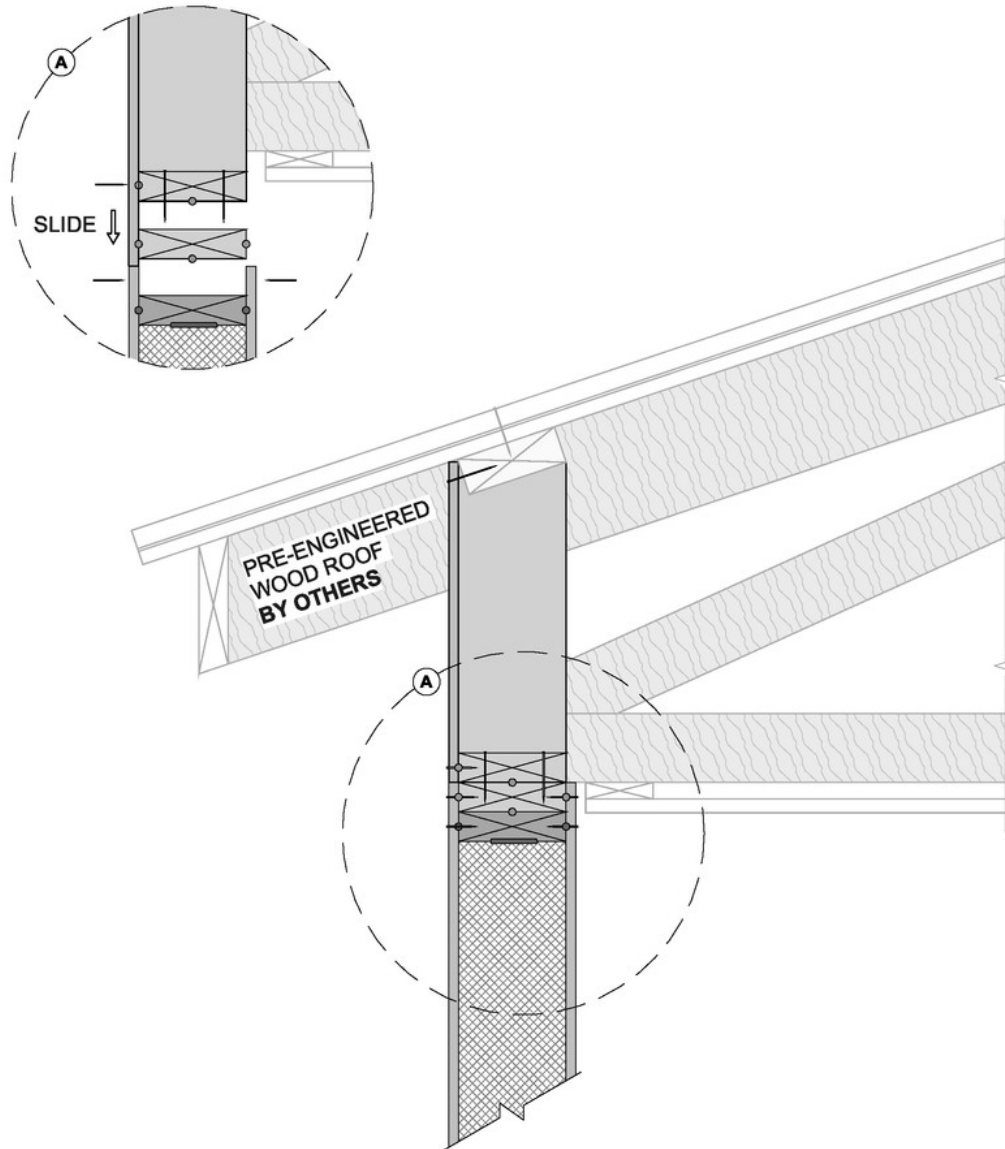
**ZS2 TOP PLATE FASTENER SCHEDULE**



**ZS2 BOTTOM PLATE(S) GAP**

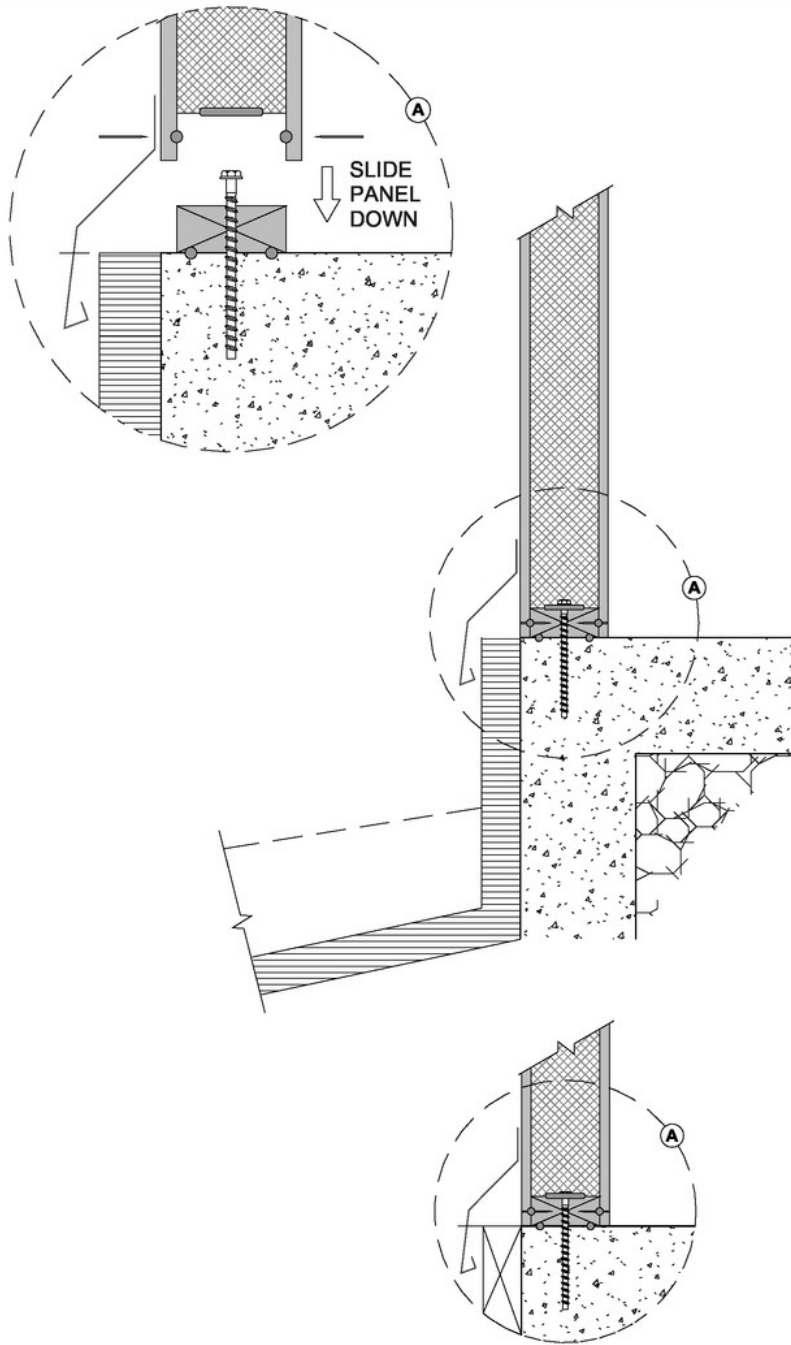


**ZS2 TYP. FASTENER & ADHESIVE CONNECTIONS**



### ROOF TRUSSES ON ZS2 WALL TECHPANEL

*\*Attachment of Panel to Roof to be designed by ZS2 Project Engineer for site specific requirements.*



### ZS2 TECHPANEL ON SLAB FOUNDATION

*\*Attachment of Panel to Foundation to be designed by ZS2 Project Engineer for site specific requirements.*



## Appendix III: The Importance of Foundation Preparation

The foundation is of paramount importance when installing ZS2 TechPanels. It's imperative that the foundation be as **level as possible**. The build will be exponentially expedited if the foundation is level prior to starting, and it is integral that it is strong enough to withstand the entire weight of the build.

Take your time. Time spent ensuring foundation is ready will greatly increase efficiency once the TechPanels arrive on site.

The benefits of a level foundation are:

- ✓ It provides a level surface for TechPanel installation.
- ✓ Provide overall stability for the structure.
- ✓ Install time will decrease significantly.
- ✓ Superior TechPanel fit and finish.



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Through prefabricated construction technologies, combined with advances in material science, it's time to improve safety, close the productivity gap, increase building performance, and build for the future.