TechPanel™
Installation Basics

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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 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 sqaure before the bottom plate is fastened down. 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. If electrical is specified for your project: 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.

> **PRO TIP:**
> **Predrill spline electrical holes slightly bigger than 1-1/4". This will allow for easy pass through of wiring.**

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 (SIPS screws, staples, etc)

- ✓ 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 base plate lumber and anchors. Base 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
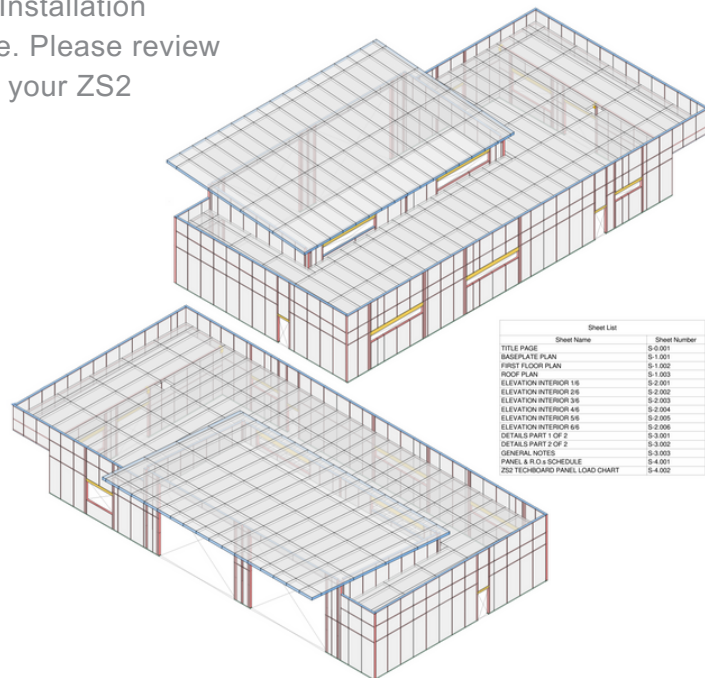- ELEVATIONS (including exploded views and install order)
- DETAILS

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	✓ Lifting hardware
✓ Fasteners	✓ Foam scoop
✓ Adhesives	✓ Site installed lumber and sheathing
✓ Foam	

Start With a Good Foundation

Confirming the bottom plate is level and within spec at this stage, regardless of the foundation type, directly effects 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™ typically use staples at 3" O.C. for the connection of splines and structural members. Staples are the typical fastener, but the project Install Drawings may note nails and screws be used. Each project should be reviewed 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.

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.**

> **PRO TIP:**
>
> **Mark TechPanel tags and dimensions on Bottom Plate prior to TechPanel installation. This ensures TechPanel placement and overall wall dimensions are correct, saving time and rework on your 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

Video Instructions:

A hands-on demonstration of TechPanel Installation is available here.

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.

> **PRO TIP:**
>
> **You want to confirm your walls are plumb, level and square before installation of all corner connection SIPS screws.**
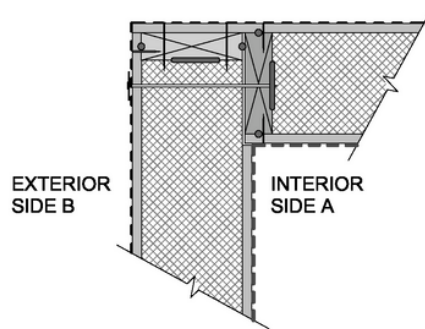
Figure 2: ZS2 Typical TechPanel Corner Connection

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 u/s 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.

Installing Roof TechPanels

1.Orientate on the ground.

2. Prep on the ground. Pre-install all SIP screws, adhesive and foam prior to lifting panel.

3. Install stop block to ensure the TechPanel stays in place on a pitched roof.

4. Follow the same process as TechPanel wall installation for the roof panel connections.

5. Complete SIP screw installation from roof panel to structure below, followed by remaining fasteners.

PRO TIP:

Lift Roof panels in the same orientation as they will be placed on the roof. This may be flat or on an angle similar to roof pitch.
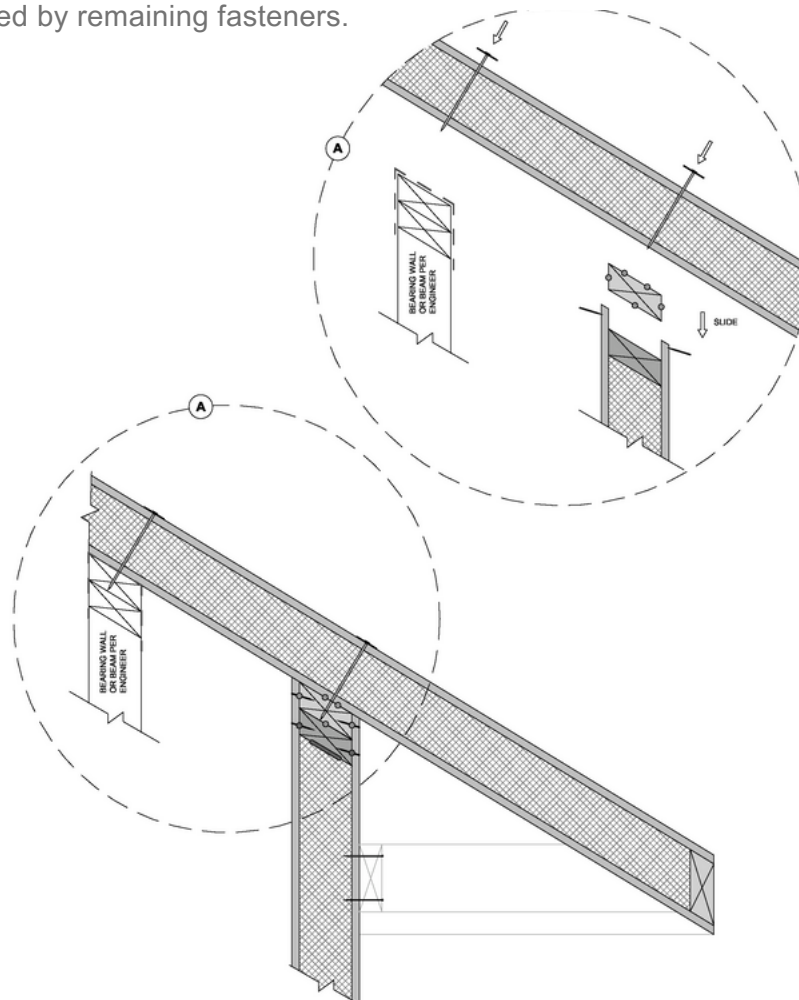
Figure 3: ZS2 TechPanel Roof

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. Roofing Panels should be weatherproofed in a timely manner if you are unsure of your timeline please consult your ZS2 contact for direction.
3. Wall panels should have a code approved weather-proof cladding applied. This is required if wall cladding application is delayed (more than three weeks) or if there is an anticipated exposure to precipitation, apply temporary breathable weatherproof cladding.
4. Confirm all fasteners are installed at each TechPanel connection.

Modifying a TechPanel on Site

Even the most thorough planning can be met with challenges on site and require that TechPanels be modified. Here is a quick overview of how to modify TechPanels on site if required.
NOTE: Please contact a ZS2 Representative before making any modifications.

1. It's easiest to modify the side with the recess (non-lumber side). If you don't see the recess you will need to remove the temporary lumber to expose the recess.
2. Using a tape measure and a chalk line, measure the required width onto the face of the TechPanel and snap a line.
3. Using a circular saw with a guide, cut the TechPanel along the chalked line. If your circular saw does not have a blade to cut through the entire width of the TechPanel in one pass, repeat this process on opposite side.

4. Now that the TechPanel Is cut to the correct width, the foam needs to be cut back to allow the necessary space for the lumber spline to be installed. In cases where there has been temporary lumber installed (end of runs) the lumber can now be permanently installed. For bottom plates or TechPanel tongues the standard recess will be 1-1/2". A foam scoop is included with each project which is intended to create the foam recess. **NOTE: Always refer to Installation drawings to ensure the foam recess dimension.**
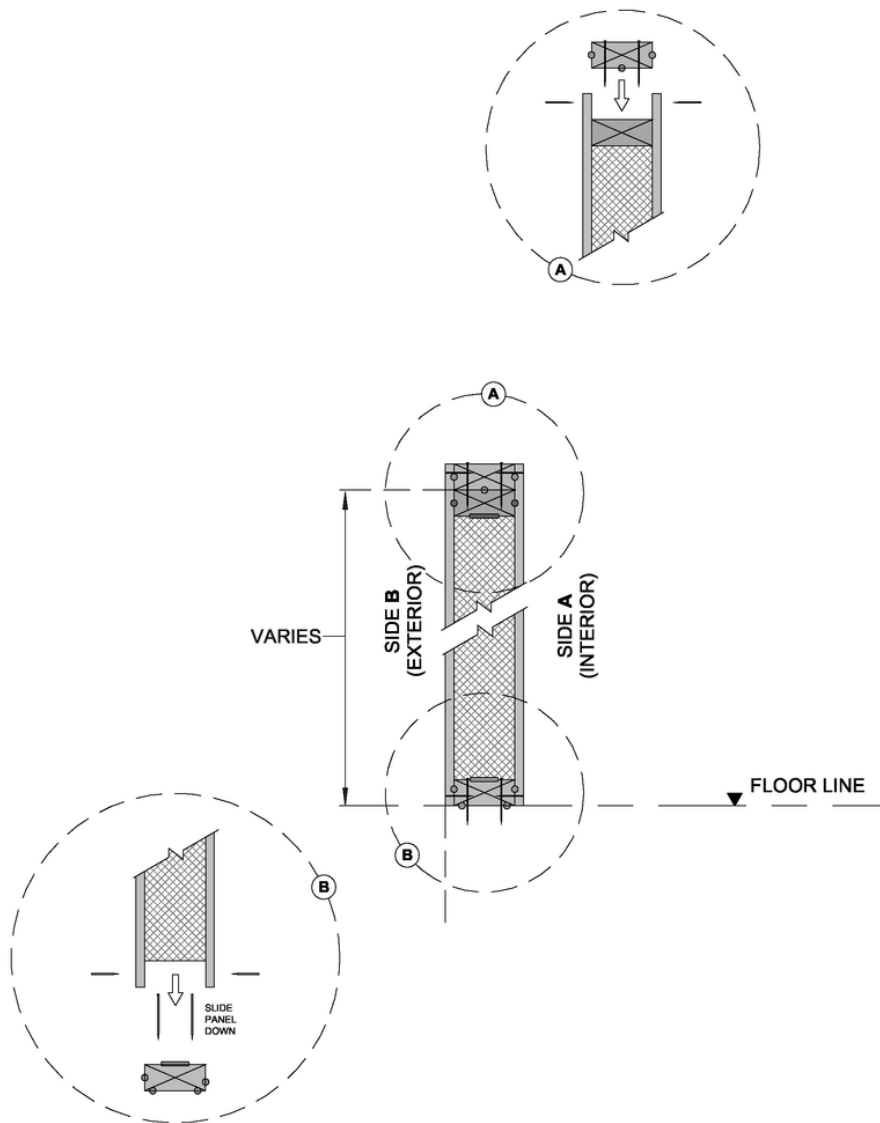
> **PRO TIP:**
> **Any dried glue must be scraped away. If there is any glue on the interior side of the sheathing, the spline installation could be impacted.**

5. Ensure the foam has created a square recess throughout. Any debris impeding the connection needs to be removed, and any areas where the depth Is too great can be filled with spray foam.

# Appendix I: Recommended Onsite Tool Checklist

☐ Wrench set

☐ Hand broom for cleaning openings

☐ Extension cords

☐ Dead blow hammer

☐ Ladders

☐ Wide Ratchet Straps – cinching TechPanels together

☐ Sawhorses/working tables

☐ Various pry bars (flat, cats paw, crow)

☐ Burk Bar or large pry bar

☐ Chalk line & chalk (2 colours recommended)

☐ Air compressor

☐ Air hoses & fittings

☐ Air nailerfor 3 1/4" nails (for top plate installation)

☐ Mitre saw - 12" preferred

☐ Circular saw for lumber & TechBoard cuts if required

☐ Grinder 5" – Able to grind cement

☐ Framing hammer

☐ Various levels (6', 8', laser)

☐ Various sizes of caulking gun

☐ Various squares (Framing, Speed, 12"-24")

☐ Tape Measure - Metric/Imperial

☐ Various quick clamp sizes (2, 4', 6')

☐ Utility knives

☐ Rolling scaffolding (applicable for projects over 8' or any TechPanel roof project)

☐ Power Planer (minimum 2")

☐ Reciprocating saw w/blades

☐ Hammer Drill and associated bits (for drilling concrete)
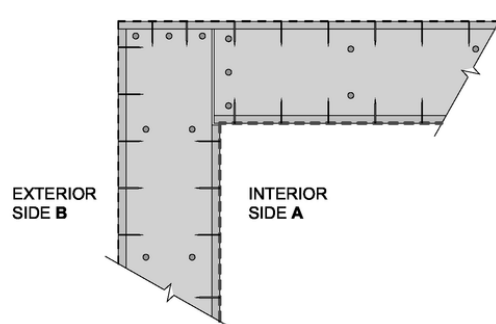
Appendix II: Common Details

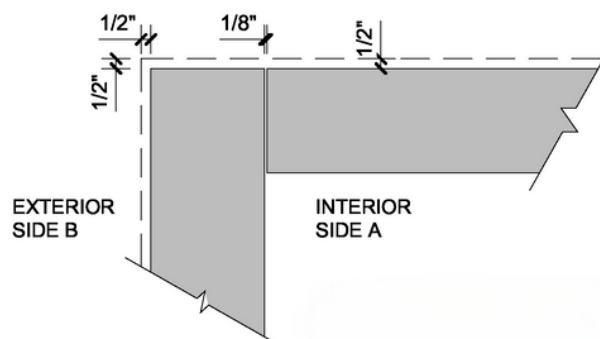**ZS2 TECHPANEL
BOTTOM/TOP PLATE
CONNECTION**

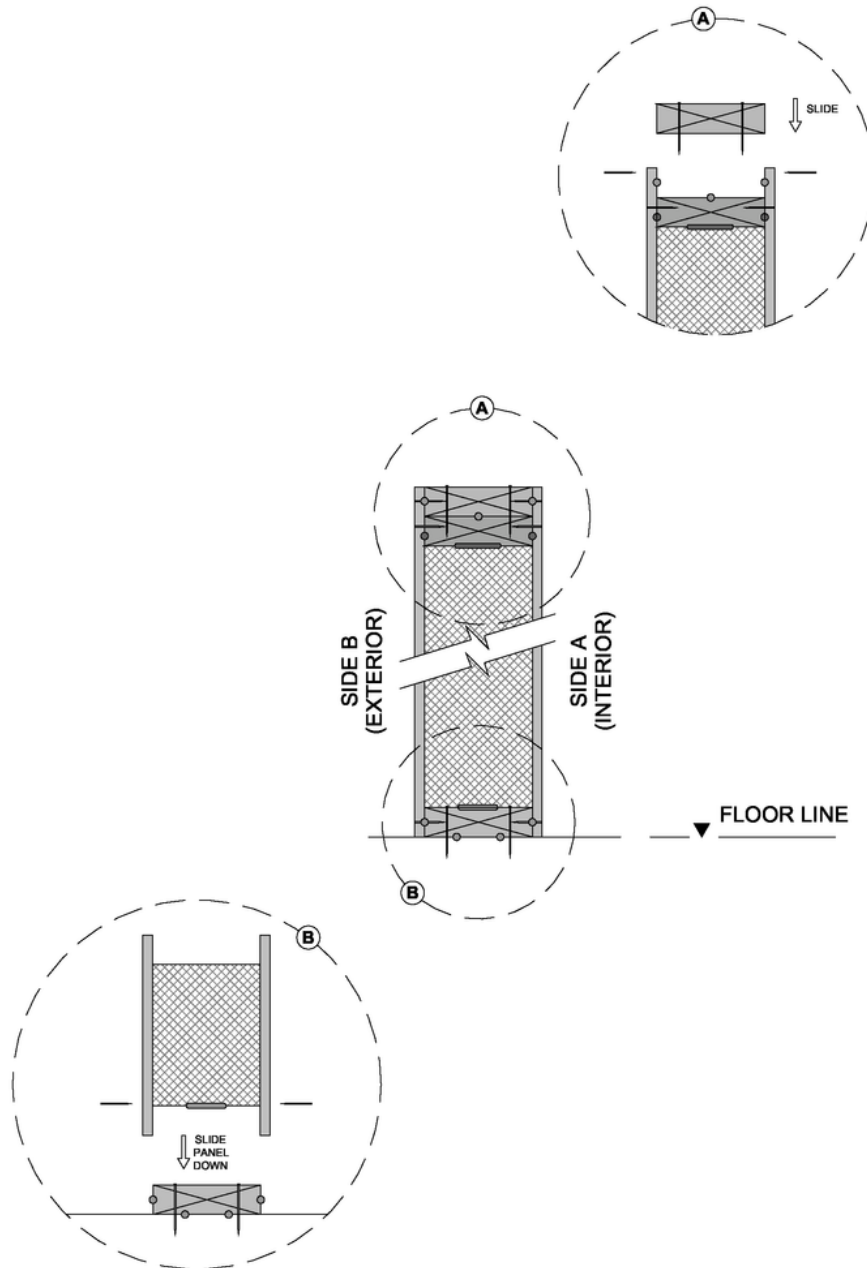# Appendix II: Common Details
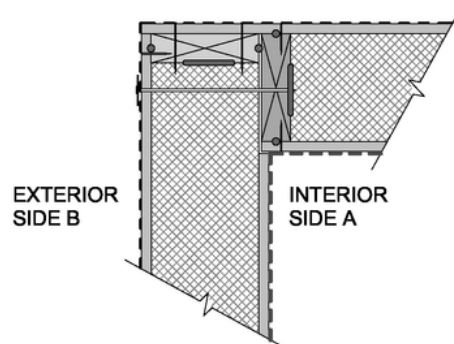
**ZS2 TECHPANEL TYP.
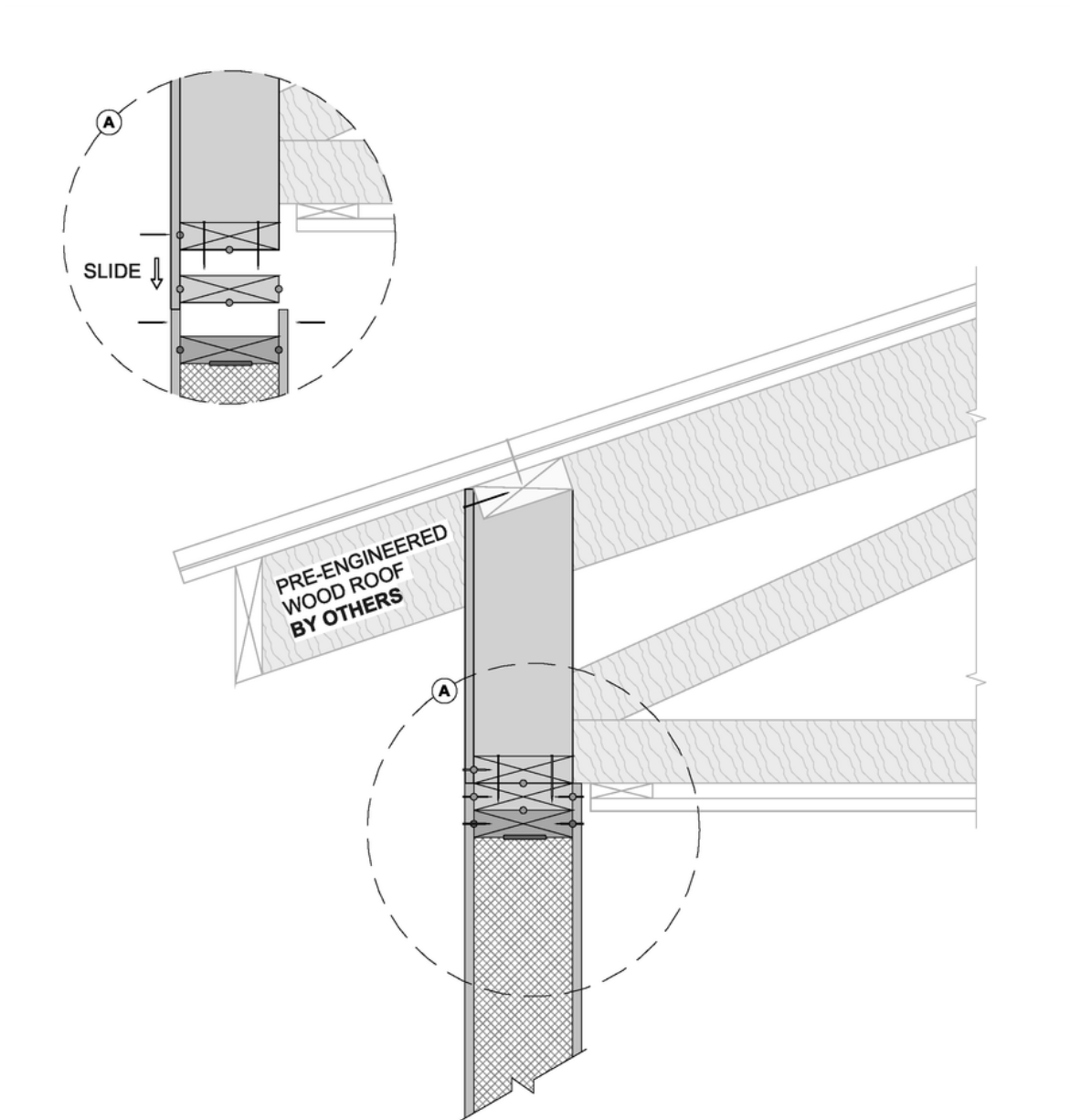CORNER CONNECTION**

**ZS2 TOP PLATE
FASTENER SCHEDULE**

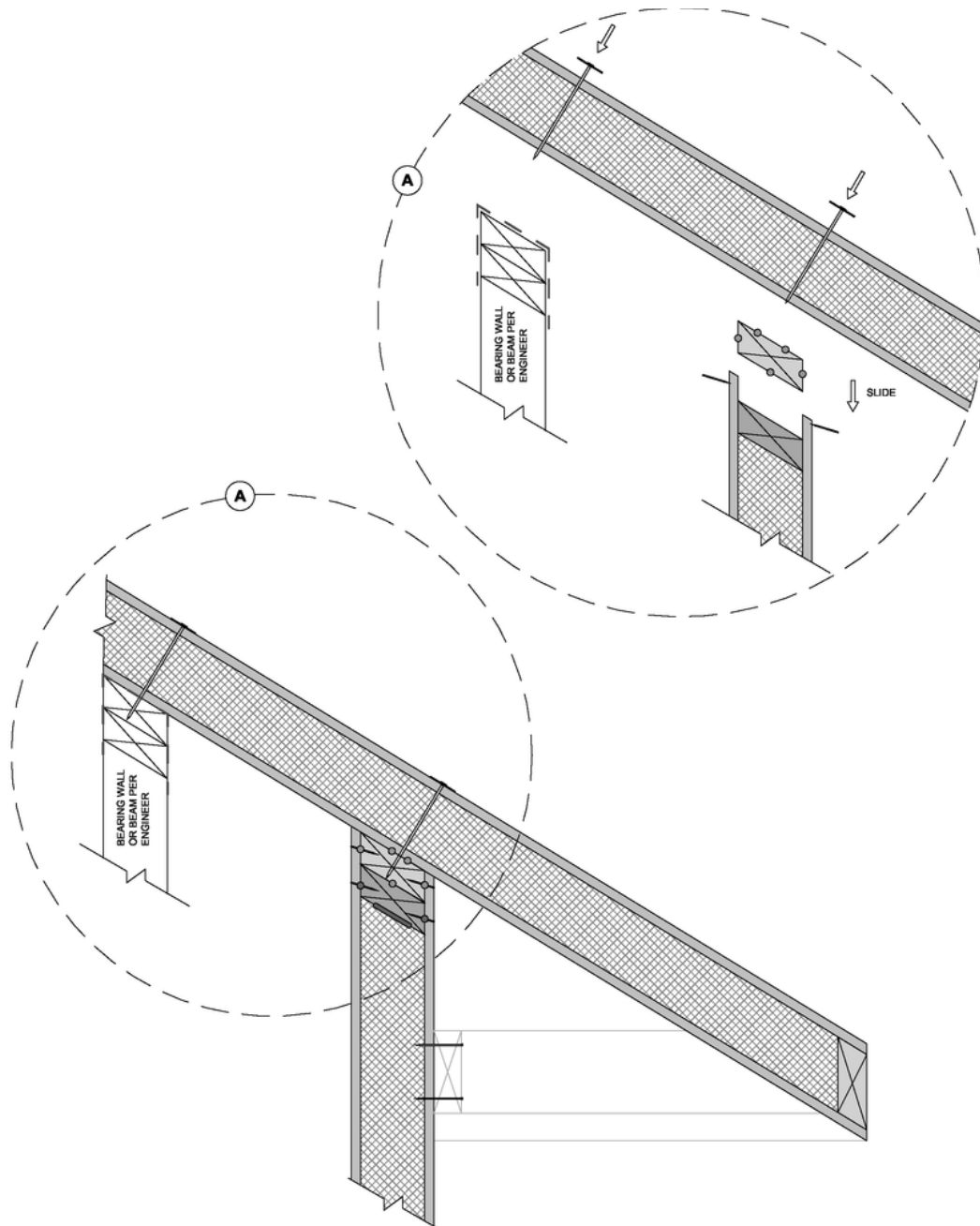**ZS2 BOTTOM PLATE(S) GAP**

Appendix II: Common Details

**ZS2 TYP. FASTENER &
ADHESIVE CONNECTIONS**
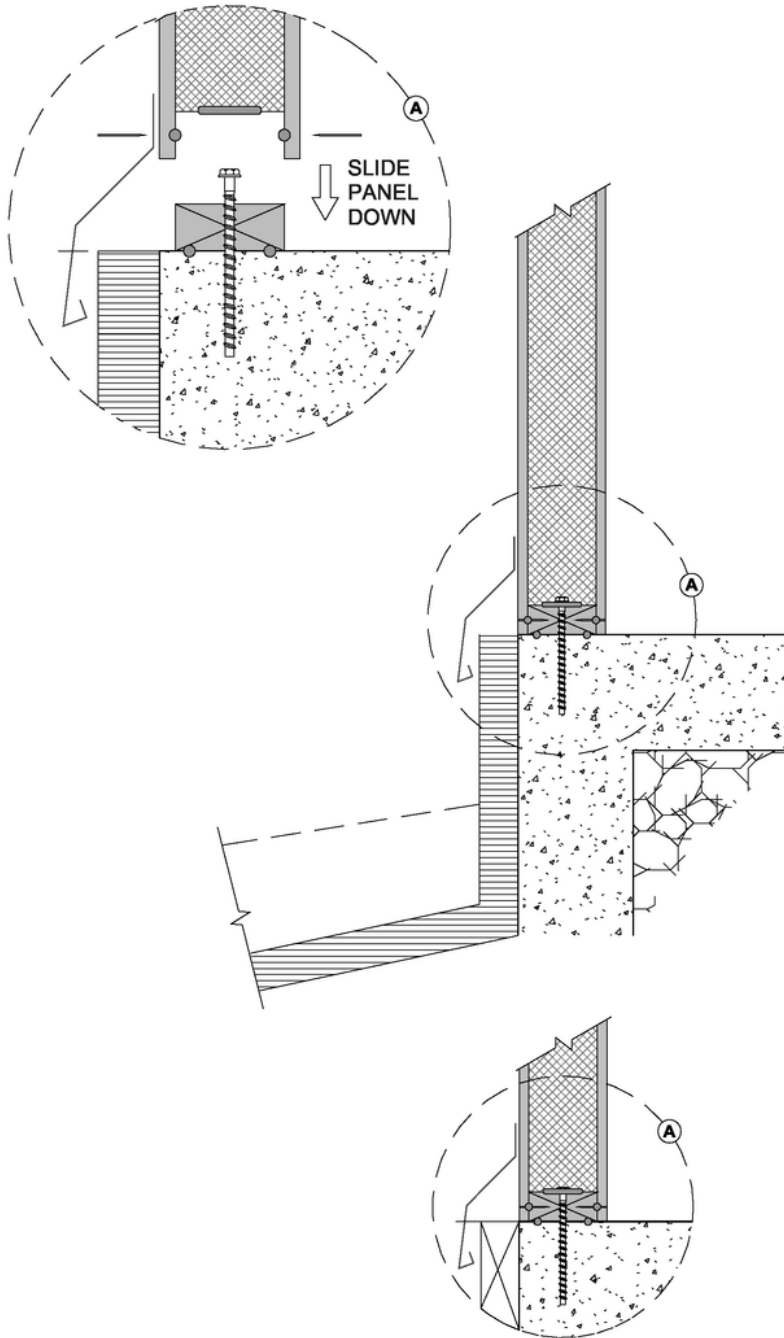
Appendix II: Common Details

SLIDE

PRE-ENGINEERED
WOOD ROOF
BY OTHERS

**ROOF TRUSSES ON ZS2
WALL TECHPANEL**

Appendix II: Common Details

BEARING WALL OR BEAM PER ENGINEER

SLIDE

A

A

BEARING WALL OR BEAM PER ENGINEER

**ZS2 TECHPANEL BEVELLED WALL
EDGE AND CANTILEVERED EAVE**

Appendix II: Common Details

**ZS2 TECHPANEL ON SLAB
FOUNDATION**

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.

ZS2 | technologies

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**CONTACT US FOR A
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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.