

TechPanel®

Installation Guide

3-in-1 MgO Structural Assembly



MANUFACTURED IN
NORTH AMERICA

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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 is 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 TechPanel®.

Preparing for **TechPanel® to Arrive**

1. Ensure you know the contact information for the ZS2 TechPartner regarding your project.
2. Review your ZS2 Installation Drawing set in detail before starting construction. If there are any discrepancies or questions contact your ZS2 PM.
3. The footings/slab and floor system **MUST BE** level and square 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 the Engineer or manufacturer.
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 the 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 the 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:

For any electrical chase holes not pre-drilled (bottom plate, top plate, around corners) drill prior to panel install with 1-1/4"-1-1/2" spade bit.

9. Top plate and adequate bracing must be considered during construction.

10. TechPanel® 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?**

- ✓ ZS2 TechPanel® product(s)
- ✓ 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
- ✓ Hotwire 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

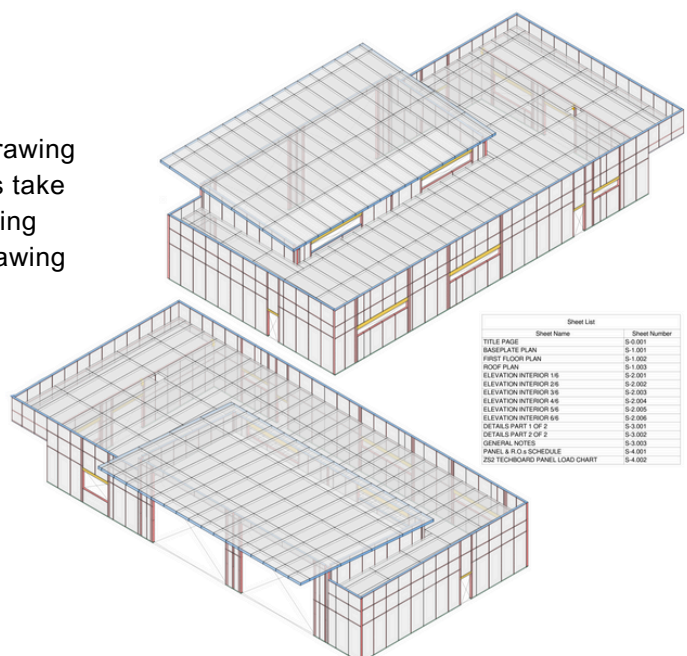


Figure 1: ZS2 Installation Drawings

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 any damage with photos and description to your ZS2 TechPartner Project Manager within 48 hrs.
- Confirm and inventory ship loose items:
 - ✓ Install drawings
 - ✓ Fasteners
 - ✓ Adhesives
 - ✓ Foam
 - ✓ Lifting hardware
 - ✓ Foam scoop
 - ✓ Site installed lumber and sheathing

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**

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

Quick Tips for Storing TechPanel®:

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

TechPanel™ **Connections**

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. TechPanel® 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. TechPanel® 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 TechPanel®, you need to ensure that you are prepared. The following are some quick tips PRIOR TO installing TechPanel®:

1. Clean out the connections of the TechPanel®. 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:



Watch Here

TechPanel Installation
ZS2 Technologies
14 videos • 1,802 views • Last updated on May 1, 2023

Play all Shuffle

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3. Referencing the ZS2 Drawing Package
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4. What Is Included in the ZS2 SIP Package
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5. Start with the Corner Panels
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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 TechPanel® in place. **NOTE:** It's best practice to not over apply the adhesive and foam beyond the panel being installed.
5. Ensure both TechPanel® are plumb, level and square.
6. Using specified fasteners, tack two TechPanel® 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 each TechPanel® is 1/8".
8. Once three or four of the TechPanel® 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 TechPanel® using two beads adhesive and two beads of spray foam along each side of the TechPanel® and two 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.

PRO TIP:
You want to confirm your walls are plumb, level and square before installation of all corner connection SIPS screws.

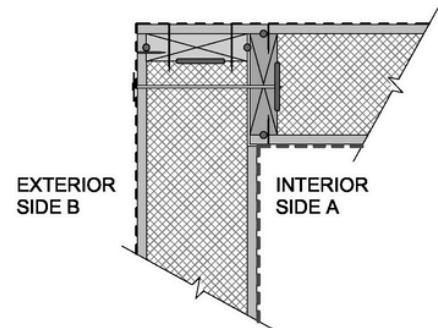


Figure 2: ZS2 Typical TechPanel® Corner Connection

Installing **Roof TechPanel®**

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 TechPanel® in the same orientation as they will be placed on the roof. This may be flat or on an angle similar to roof pitch.

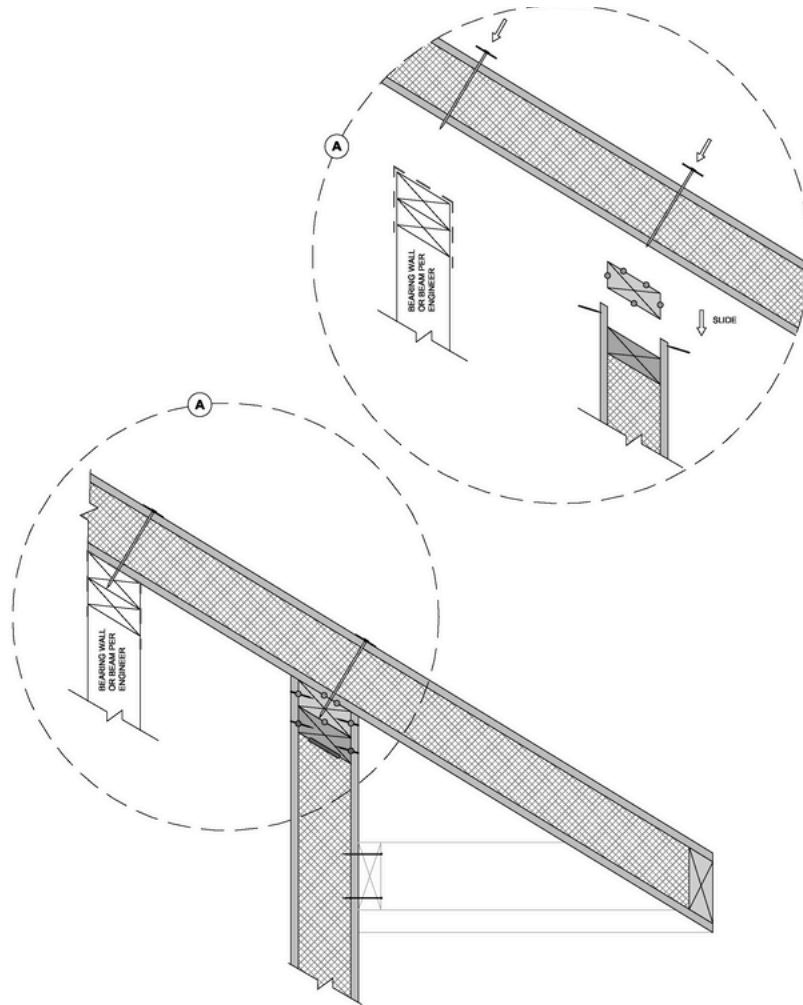


Figure 3: ZS2 TechPanel® Roof

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. Roof TechPanel® should be weatherproofed in a timely manner if you are unsure of your timeline please consult your ZS2 contact for direction.
3. TechPanel® 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 TechPanel® be modified. Here is a quick overview of how to modify TechPanel® 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.

Warranty

10 Year Limited – Prorated – Non Transferable Warranty.

Visit www.zs2technologies.com/warranty or contact a ZS2 representative for details.



ICC-ES Evaluated
ESR-5346



EPD #SCS-EPD-08294
Compliant with ISO 21930:2017
Sustainability in buildings and
civil engineering works



CERUS-1009
Meets
Requirements

Recommended Onsite **Tool Checklist**

- | | |
|---|--|
| <input type="checkbox"/> Wrench set | <input type="checkbox"/> Mitre saw - 12" preferred |
| <input type="checkbox"/> Hand broom for cleaning openings | <input type="checkbox"/> Circular saw for lumber & TechBoard cuts if required |
| <input type="checkbox"/> Extension cords | <input type="checkbox"/> Grinder 5" – Able to grind cement |
| <input type="checkbox"/> Dead blow hammer | <input type="checkbox"/> Framing hammer |
| <input type="checkbox"/> Ladders | <input type="checkbox"/> Various levels (6', 8', laser) |
| <input type="checkbox"/> Wide Ratchet Straps – cinching TechPanels together | <input type="checkbox"/> Various sizes of caulking gun |
| <input type="checkbox"/> Sawhorses/working tables | <input type="checkbox"/> Various squares (Framing, Speed, 12"-24") |
| <input type="checkbox"/> Various pry bars (flat, cats paw, crow) | <input type="checkbox"/> Tape Measure - Metric/Imperial |
| <input type="checkbox"/> Burk Bar or large pry bar | <input type="checkbox"/> Various quick clamp sizes (2, 4', 6') |
| <input type="checkbox"/> Chalk line & chalk (2 colours recommended) | <input type="checkbox"/> Utility knives |
| <input type="checkbox"/> Air compressor | <input type="checkbox"/> Rolling scaffolding (applicable for projects over 8' or any TechPanel roof project) |
| <input type="checkbox"/> Air hoses & fittings | <input type="checkbox"/> Power Planer (minimum 2") |
| <input type="checkbox"/> Stapler (pneumatic) 7/16" crown capable of 1-½" long staples | <input type="checkbox"/> Reciprocating saw w/blades |
| | <input type="checkbox"/> Hammer Drill and associated bits (for drilling concrete) |

The Importance of **Foundation Preparation**

The foundation is of paramount importance when installing TechPanel®. 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 TechPanel® arrives 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.