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Innova Panel Technical Bulletin: Proper Sealing of SIP Panel Joints

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Overview – “Seal It Right, Seal It Tight”

Structural Insulated Panels (SIPs) are high-performance building components that provide exceptional thermal insulation, structural integrity, and air-sealing. However, these benefits can only be fully realized when SIP joints are properly sealed during installation. This technical bulletin provides the best practices and requirements for joint sealing to ensure long-term durability, moisture resistance, and energy performance.

Why Joint Sealing Matters - "Build Tight, Breathe Right"

Improperly sealed joints between SIP panels can lead to:

- **Air Infiltration:** Compromising energy efficiency and increasing HVAC load.
 - **Moisture Intrusion:** Resulting in condensation, mold, and long-term deterioration of the building finishes.
 - **Structural Integrity Issues:** Moisture can weaken the panel connection points over time.
 - **Code Compliance Failures:** Many jurisdictions require SIPs to meet specific air loss and vapor barrier standards.
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Types of SIP Joint Seals - "If It's Not Sealed, It's Not Finished."

1. **Sealant Adhesives:** Applied during panel joining to bond and seal simultaneously.
 2. **Expanding Foam Sealants:** Used for gap-filling and air sealing between panel edges, at the bottom of the panel between the base plate and around any accessories or other voids or penetrations in the system.
 3. **Vapor Tape:** Vapor tape is required at all wall panels seams. Vapor tape is to be installed on the winter-warm side of the panel. For warm climates like Florida, this is the exterior wall joints.
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Installation Guidelines - "Sealed Tight, Weather Right."

1. Surface Preparation

- Confirm all mating surfaces are clean, dry, and free from dust, debris, or contaminants.
- Inspect panel edges and facing, for any damage prior to applying sealant; repair or replace as needed.

2. Sealant Application Procedure

- Apply a continuous uniform bead, of approved InnovaPanel sealant to both mating edges of the SIP joint.
- Apply a bead of sealant to the outside face of the spline and insert the panel spline or lumber member, pressing it firmly to ensure proper sealant distribution.
- Fasten panels in accordance with **Innova Panel Installation Specifications**, using recommended hardware.
- Immediately remove excess sealant from panel surfaces before curing occurs.

3. Critical Sealing Areas - "Seal It Tight. Build It Right."

Give special attention to:

- Roof-to-wall intersections
- Ridge and eave connections
- All openings, including windows, doors, and mechanical penetrations

Approved Sealant Products

Use only Innova Panel-approved sealants that meet the following criteria:

- Elastomeric flexibility (for expansion and contraction)
- Low-VOC and SIP-compatible chemistry
- Tested for adhesion to Plywood and EPS or MgO and EPS foam core

Contact Innova Panel Technical Support for the most current list of approved low VOC sealants.



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Inspection and Quality Assurance - "Seal It Tight or Do It Twice!"

- **Visual Check:** Ensure continuous bead and squeeze-out is present at all seams. Install vapor tape at all seams as recommended to ensure a near air tight seal.
 - **Field Testing:** Blower door tests or thermographic imaging to verify air tightness can be used to verify airtightness and to qualify for green building certifications. Most Building jurisdictions do not require a blower door on SIP building envelopes due to the air tightness of the structures. SIP structures that are Blower Door Tested should have 3" or less air loss.
 - **Documentation:** Check the expiration date of all sealants before sealing the structure with outdated materials.
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Final Notes – "Tight Is Right"

Proper joint sealing is critical for SIP performance. Builders, contractors, and installers must follow Innova Panel's installation guidelines and local codes to ensure successful results. Failure to properly seal panel joints during the installation may void the panel warranties and lead to costly corrective repairs.

For additional information or training on SIP joint sealing, contact Innova Panel Technical Services at info@innovapanel.com or visit www.innovapanel.com.