

Assembly No. AFM031809-18
R-Control Structural Insulated Wall Panels
for use in Seismic D, E, and F construction.

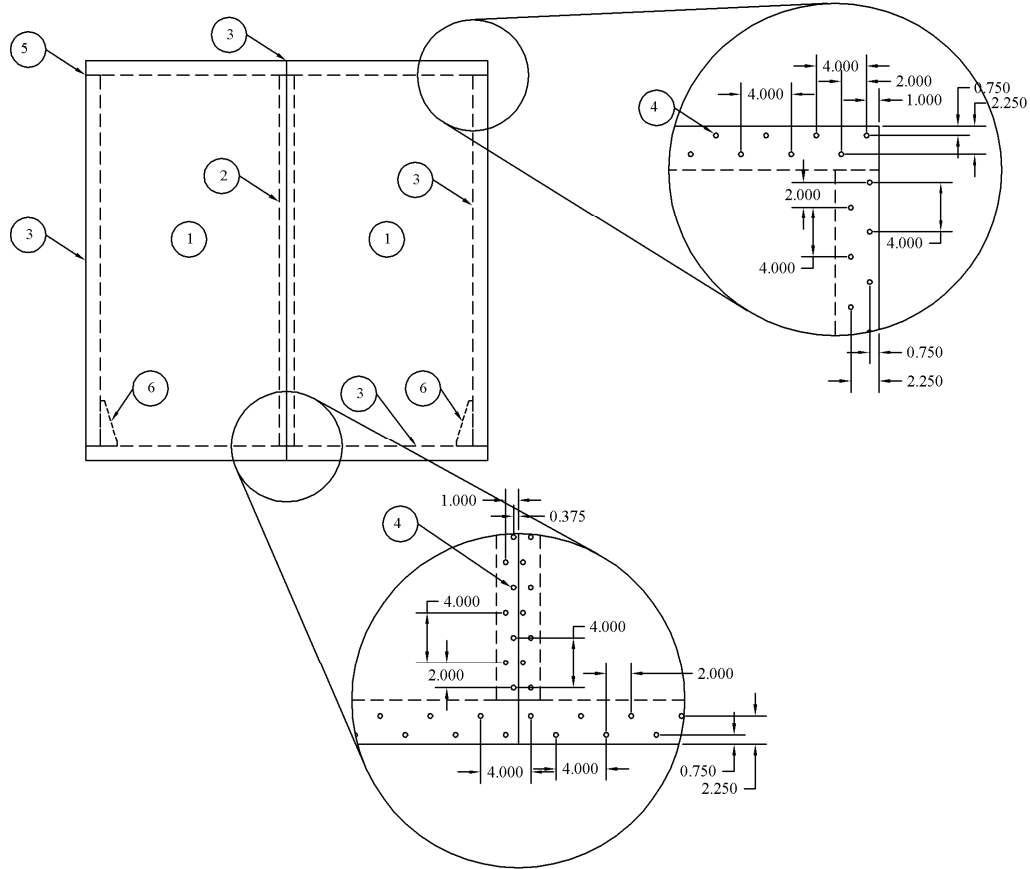


Figure 1: Assembly Drawing for Seismic Resistance

Report Holder
AFM Corporation
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Lakeville, Minnesota 55044

Big Sky Insulations, Inc.
15 Arden Drive
Belgrade, Montana 59714

Licensed To
ACH Foam Technologies, LLC
5250 North Sherman Street
Denver, Colorado 80216

SUBJECT
R-Control Structural Insulated Wall Panels for use
in Seismic D, E, and F construction.

ACH Foam Technologies, LLC
775 Waltham Way, Suite 105
McCarran, Nevada 89434

To obtain the most current NTA Certification Report
 Visit www.ntainc.com/product-certification/.

This assembly listing is intended to indicate that NTA, Inc. has evaluated data pertaining to the described assembly and has found that when constructed in accordance with this listing the data herein applies. NTA Inc. makes no warranty, either expressed or implied, regarding the product covered by this report.

**Components:**

1. **Structural Insulated Panels.** *R-Control Structural Insulated Panels* consisting of nominal 5 1/2-inch thick EPS core laminated between two sheets of minimum 7/16-inch thick oriented strand board (OSB). SIP Panels shall bear the ESR-2233 listing mark.
2. **Splines.** *R-Control Structural Insulated Panels* for use in seismic construction are interconnected with #2 Douglas Fir 4x6 splines.
3. **Chords and Top and Bottom Plates.** *R-Control Structural Insulated Panels* for use in seismic construction shall use #2 Douglas Fir 4x6 Top Plates, Bottom Plates, and Chords.

Note: *R-Control Structural Insulated Panels* shall be fastened in accordance with Figure 1.

4. **8d Cooler Nails, 0.113-in. x 2-3/8-in.** applied 2-in. o.c. staggered on the panel perimeter.
5. **10d Box Nails, 0.131 x 3-in.** (4) used to toe nail the top and bottom plates at each chord.
6. **Holdowns.** Designed in accordance with accepted engineering practice to resist design chord forces.

DESIGN

7. **Design Approval.** Where required by the authority having jurisdiction, structures using *R-Control Structural Insulated Panels* shall be designed by a registered design professional. Construction documents, including engineering calculations and drawings providing floor plans, window details, door details, and connector details, shall be submitted to the code official when application is made for a permit. The individual preparing such documents shall possess the necessary qualifications as required by the applicable code and the professional registration laws of the state where the construction is undertaken. Approved construction documents shall be available at all times on the jobsite during installation.^(NACU4)

8. **Connection to Structure.** Designed in accordance with accepted engineering practice to transfer racking forces into the wall at the top and out of the wall at the base.
9. **Design Loads.** Design loads to be resisted by the SIP panels shall be as required under the applicable building code. Loads on the panels shall not exceed the loads noted in this report.
10. **In-Plane Shear Design.** Shear walls shall be sized to resist all code required wind and seismic loads without exceeding the allowable loads provided in Table 1. Shearwall chords, holdowns, and connections to transfer shear forces between the wall and surrounding structure shall be designed in accordance with accepted engineering practice.
11. **Seismic Design Categories.** The shear wall configurations in Table 1 are permitted in Seismic Design Categories D, E and F. Such walls shall be designed using the seismic design coefficients and limitations provided in ASCE 7-05 for light-framed walls sheathed with wood structural panels rated for shear resistance (SFRS A13). These SIP panels shall use the following factors for design: Response Modification Coefficient, $R = 6.5$; System Overstrength Factor, $\Omega_0 = 3.0$; Deflection Amplification Factor, $C_d = 4.0$.^(ACU17)
12. **Adhesives and Sealants.** Adhesives and sealants shall not be applied at wood-to-wood or spline-to-facing interfaces in shearwalls in Seismic Design Categories D, E and F. Adhesives and sealants may be applied to wood-to-foam or facing-to-foam interfaces. Flexible SIP tape may be applied over panel joints.

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**Table 1: Allowable In-Plane Shear Strength (Pounds per Foot)
for SIP Shear Walls (Seismic Loads in Seismic Design Categories D, E and F)^{1,2}**

Spline Type	Framing Minimum SG ³	Minimum Facing Connections ²			Shear Strength (plf)
		Chord ²	Plate ²	Spline	
#2 D-F 4x6	0.50	0.113" x 2-3/8" nails, 2" o.c. Staggered (3/4" edge distance and 2-1/4" edge distance)	0.113" x 2-3/8" nails, 2" o.c. Staggered (3/4" edge distance and 2-1/4" edge distance)	(#2 DF 4x6) 0.113" x 2-3/8" nails, 2" o.c. Staggered (3/8" edge distance and 1" edge distance)	920

¹ Allowable seismic design coefficients are defined in Section 11.

² Chords, holdowns, and connections to other structural elements must be designed by a registered design professional in accordance with accepted engineering practice.

³ Required connections must be made on each side of the panel. Dimensional or engineered lumber shall have an equivalent specific gravity not less than specified.

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