



Product Evaluation Reports

PER-05007

Page 1 of 3

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Progressive Engineering Inc.

Initial Listing
January, 1998

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Goshen, Indiana 46528

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Listed Product

FSI FoamNail® or FoamNail®-P Two-Part
Polyurethane Structural Adhesive

Listed For

Foam Supplies, Inc.
4387 North Rider Trail
Earth City, MO 63045

Approved Manufacturer

Foam Supplies, Inc.
590 Benjamin's Way
Lewisville, TX 75057

Progressive Engineering Inc. is an accredited Testing Laboratory and Third Party Quality Control Agency. This **Product Evaluation Report** represents a product that Pei has a follow-up service agreement with. This **Product Evaluation Report** in no way implies warranty for this product or relieves **Foam Supplies Inc.** of their liabilities for this product. Pei is accredited to ISO Standard 17020 and 17025. This **PER** is an official document if it is within one year of the initial or renewal date.

Listing Details

FSI FoamNail® or FoamNail®-P adhesive is used to attach gypsum board to nominal lumber framing in walls and ceilings without the use of mechanical fasteners.

Product Description

FSI FoamNail® or FoamNail®-P is a two-part polyurethane structural adhesive system. It is applied by pumping two components at a 1 to 1 volumetric ratio under pressure through heating equipment to produce one continuous bead. The two components are an "A ISO" and a "B Resin". The A ISO is a purchased material and the B Resin is manufactured by **Foam Supplies Inc.** This adhesive does not off-gas Formaldehyde into the air.

Containers and Storage

The A & B components are shipped in pressurized cylinders. Storage of these containers should be in an indoor dry place between 70°F. and 105°F. **FSI FoamNail® or FoamNail®-P** will have a storage life of up to six months in these conditions.

General Product Use

The gypsum board being used shall meet ASTM C 1396. The lumber is to be kiln dried and graded. Both substrate surfaces shall be clean, dry and free of dust, ice and loose particles and shall have a surface temperature above 50°F. **FSI FoamNail® or FoamNail®-P** adhesive should be applied in an ambient temperature range of 70°F. to 85°F. The adhesive is applied along the intersection of the gypsum and the lumber according to Foam Supplies Inc. application instructions. The adhesive temperature in the cylinders should be a minimum of 70°F and an optimum temperature of 80°F. to 85°F. After the last bead is applied, the structure shall not be moved for a minimum of two minutes. The structure should stay in the same ambient conditions for the first 24 hours.

FSI FoamNail® or FoamNail®-P adhesive can be used on 24" and 16"o.c. framing in the walls and ceiling. The fillet beads produced should measure a **minimum** of 1-1/8" average on the gypsum and 3/4" average on the framing. A bead should never be greater than 3" in size. The adhesive beads are applied along one side of field framing and along both sides at gypsum seams

Listing Criteria

1. The **FSI FoamNail® or FoamNail®-P** adhesive shall be installed according to Foam Supplies Inc. application instructions. A copy of these instructions must be made easily available at the assembly areas.
2. This Listing is for **FSI FoamNail® or FoamNail®-P** to be applied in an indoor manufacturing facility and is not meant to be applied in an outdoor uncontrolled environment.

- 3. FSI FoamNail® or FoamNail®-P adhesive is to be manufactured at the Foam Supplies Inc. plant in Lewisville, TX following their approved Q.C. program with unannounced inspections by Progressive Engineering Inc.
- 4. The use of FSI FoamNail® or FoamNail®-P adhesive in a fire rated assembly is not addressed in this Listing.
- 5. A vapor barrier cannot be used between the adhesive and the substrates.
- 6. FSI FoamNail® or FoamNail®-P is to be applied to the back side standard raw gypsum and is not intended for other gypsums such as foil backed, moisture resistant or water resistant gypsums.
- 7. Construction of assemblies using FSI FoamNail® or FoamNail®-P and their design values should be as described in the following test reports.

Building Code Compliance

1997 Uniform Building Code	2003 International Building Code	2006 IRC
1999 Standard Building Code	2003 International Residential Code	2009 IRC
1999 BOCA National Building Code	2006 IBC	2009 IRC

Tested to

<i>Pei</i> Standard No. 89-1	<i>Pei</i> Standard No. 99-23	UL-1715
<i>Pei</i> Standard No. 93-7	ASTM E 72	ASTM E 84
<i>Pei</i> Standard No. 93-8	ASTM C 557	

Product Documentation

A MSDS sheet for FoamNail - Dated 11/25/1997

FSI FoamNail® or FoamNail®-P Guidelines for Use, Application & Safe Handling - Dated February, 1998

A Listing and Follow-up Service agreement between *Progressive Engineering Inc.* and *Foam Supplies Inc.* dated 5/25/05

Opinion Letters dated: 11/10/1999 4/19/2002
7/17/2000 4/29/2002
10/5/2001

The following is a list of test reports for FoamNail Adhesive.

<u>Ceiling Diaphragm Tests</u>	<u>Ceiling Dead Load</u>	<u>Small Scale Tests</u>	<u>Wall Racking Tests</u>	
1997-1904 1999-1110	1997-2334	1998-2254	1999-1346A	1999-2462A
1997-1906 1999-1146	2001-0800	1999-0236	1999-1346B	1999-2462B
1997-2114 1999-1148			1999-1346C	1999-2462C
1997-2116 1999-1348			1999-1346	1999-2462D
			1999-1346	1999-2462E
			1999-1858	1999-2792

Design Values

Ceiling Diaphragm Design Load = **192 plf** (10' minimum width x 52ft. Maximum diaphragm span)
Ceiling Dead Load Resistance = **16.9 psf**

Product Labeling

Each cylinder shipped of FSI FoamNail® or FoamNail®-P that is covered by this PER must have a label attached with at least the following information:

- 1. Foam Supplies Inc.'s name and address.
- 2. Date of manufacture or Lot#
- 3. Shelf life information
- 4. This PER number & Pei info
- 5. Component name

PER-05007

