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Initial Approval  
September, 2000

Re-Approved  
April, 2018

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### Report Owner

#### **Alpha Systems, Inc.**

5120 Beck Drive  
Elkhart, IN 46516

### Approved Manufacturing Location

#### **Alpha Systems, Inc.**

5120 Beck Drive  
Elkhart, IN 46516

### Product

#### **AlphaSeal 5200 Two-Part Polyurethane Foam Adhesive**

### For Evaluation Report Questions

[www.alphasystemsinc.com](http://www.alphasystemsinc.com)

**Alpha** Contact: Joe Merryman - V.P. of Product Development  
Phone: 574-295-5206

### General Details

**AlphaSeal 5200** adhesive is used to attach gypsum board to wood lumber framing in walls and ceilings without the use of mechanical fasteners. The manufacturing location listed above has an approved Quality Control Manual to manufacture the **AlphaSeal 5200 Two-Part Polyurethane Foam Adhesive** and is inspected quarterly by *Progressive Engineering Inc. (Pei)*.

### Product Description

**AlphaSeal 5200** is a two-part component polyurethane foam 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 component is a purchased material and the B-RESIN component is manufactured by **Alpha Systems, Inc.** The **AlphaSeal 5200** adhesive does not off-gas Formaldehyde into the air.

### Containers and Storage

The A and B components are shipped in 330 gallon caged totes or in 55 gallon steel drums. Storage of these containers should be in an indoor dry place between 40°F. and 110°F. Unopened containers will have a storage life of up to six months in these conditions.

### General Product Use and Limitations

The gypsum board being used shall meet ASTM C 1396. The lumber is to be kiln dried and graded. For proper application, both substrate surfaces shall be between a temperature of 50°F. and 105°F. Surfaces shall be clean and dry, free of dust, ice and loose particles. **AlphaSeal 5200** adhesive shall be applied in an ambient temperature range of 50°F. to 105°F. The adhesive is applied along the intersection of the gypsum and the lumber according to **Alpha Systems** Application Instructions. The adhesive temperature at the heater block shall be between 100°F. and 110°F. After the last bead is applied, the structure shall not be moved for a minimum of two minutes. The structure shall stay in the same ambient conditions for the first 24 hours.

**AlphaSeal 5200** adhesive can be used on 16-in o.c. and 24-in o.c. framing in wall and ceiling applications. The adhesive beads are applied along one side of field framing and along both sides at gypsum seams. Beads produced shall be sized per Figure 1, on page three (3) and Note 1 under Table 1 for wall shear design values. A bead should never be greater than 3-inch in size.

- The **AlphaSeal 5200** adhesive shall be applied according to **Alpha Systems** Application Instructions. A copy of these instructions must be made easily available at the assembly areas.
- This **PER** is for **AlphaSeal 5200** to be applied in an indoor manufacturing facility and is not meant to be applied in an outdoor uncontrolled environment.
- **AlphaSeal 5200** adhesive is to be manufactured at the **Alpha Systems** plant in Elkhart, Indiana following their approved Quality Control Manual with unannounced Inspections by *Progressive Engineering Inc.*
- The use of **AlphaSeal 5200** adhesive in a fire rated assembly is not addressed in this **PER**.
- A vapor barrier cannot be used between the adhesive and the substrates.
- **AlphaSeal 5200** is to be applied to the back side of standard raw gypsum and is not intended for other gypsums such as foil backed, moisture resistant or water resistant gypsums.
- Construction of assemblies using **AlphaSeal 5200** and their design values shall be as described in the following test reports on page three (3) of this **PER**.

### **Building Code Compliance**

Must be used with an approved thermal barrier not less than 1/2-inch (12.7mm) gypsum wallboard or approved material equivalent in compliance with the requirements of the 2006 IRC, Section R314.4 and the 2009, 2012, and 2015 IRC, Section R316.4.

Must be used with an approved thermal barrier not less than 1/2-inch (12.7mm) gypsum wallboard or approved material equivalent in compliance with the requirements of the 2006, 2009, 2012, and 2015 IBC, Section 2603.4

Meets or exceeds the requirements of the 2006, 2009, 2012, and 2015 IBC, Section 2603.9 based on large-scale tests and acceptance criteria of UL-1715.

August 1, 2017 - Texas Industrialized Housing and Buildings Administrative Rules - Section: 70.103. (c) (2)

NC Residential Code, 2012 Edition - Section R316.6

ASTM E-84 - Class B Fire Rating: Flame Spread Index - 30 and Smoke Development Index - 360

Meets or exceeds Acceptance Criteria of UL-1715 for use with 3/8-inch Gypsum Wallboard after 15 Minute Exposure Requirements, where flames shall not extend to the extremities or through the doorway opening of the tested specimen.

Meets or exceeds Acceptance Criteria of UL-1715 for use with 1/2-inch Gypsum Wallboard after 15 Minute Exposure Requirements, where flames shall not extend to the extremities or through the doorway opening of the tested specimen.

Meets or exceeds adhesion of gypsum panels to wood for 200°F Stability and 30 Minute Exposure Requirements of the 2012 IBC, Section 803.10 Stability.

### **Test Standards**

*Pei* Standard No. 89-1 - Simple Span Ceiling or Roof Diaphragm Shear Resistance Test Procedure for Manufactured Homes

*Pei* Standard No. 93-7 - Performance Requirements for Fastening Gypsum Board to Wood Framing using a Two-Part Urethane Adhesive

*Pei* Standard No. 94-9 Large Scale Ceiling Board Dead Load Test Procedure

ASTM C 557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing

ASTM D 5582 - Standard Test Method for Determining Formaldehyde Levels from Wood Products Using a Desiccator

ASTM E 72 - Standard Test Method of Conducting Strength Tests of Panels for Building Construction

ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials

UL 1715 - UL Standard for Safety Fire Test of Interior Finish Material

**Table 1: Wall Shear Designs with Gypsum Board<sup>1,2</sup>**

Framing				Gypsum Orientation	Gypsum Brand	Single or Double Sided	Ultimate Load PLF <sup>3</sup>	Test Report #
Top Plate	Bott. Plate	Studs	Stud Spacing					
1x3	1x3	2x3	16" o.c.	5/16" Vertical	Georgia Pacific	Single	737.5	1998-2966A
					USG Gypsum	Single	707.4	1998-2966B
					Gold Bond	Single	656.6	1998-2966C
				1/2" Horizontal	USG Gypsum	Single	750.9	1998-3236A
					Gold Bond	Single	727.4	1998-3236B
					Georgia Pacific	Single	590.4	1998-3236C
					USG MH UltraLight	Single	675.0	2012-1569M
USG MH UltraLight	Single	760.0	2012-1569O					
2x3	2x3	2x3	16" o.c.	1/2" Horizontal	USG MH UltraLight	Single	641.0	2012-1569N

**Notes:**

1. Bead sizes as described in each test report
2. Tested in Accordance to ASTM E72 - Static Wall Racking Tests
3. Ultimate load does not include any required safety factors

**Design Values**

Ceiling Diaphragm Design Load = **203 plf** (11'-9" minimum width x 48ft. Maximum diaphragm span)

Ceiling Dead Load Resistance = **15.3 psf**

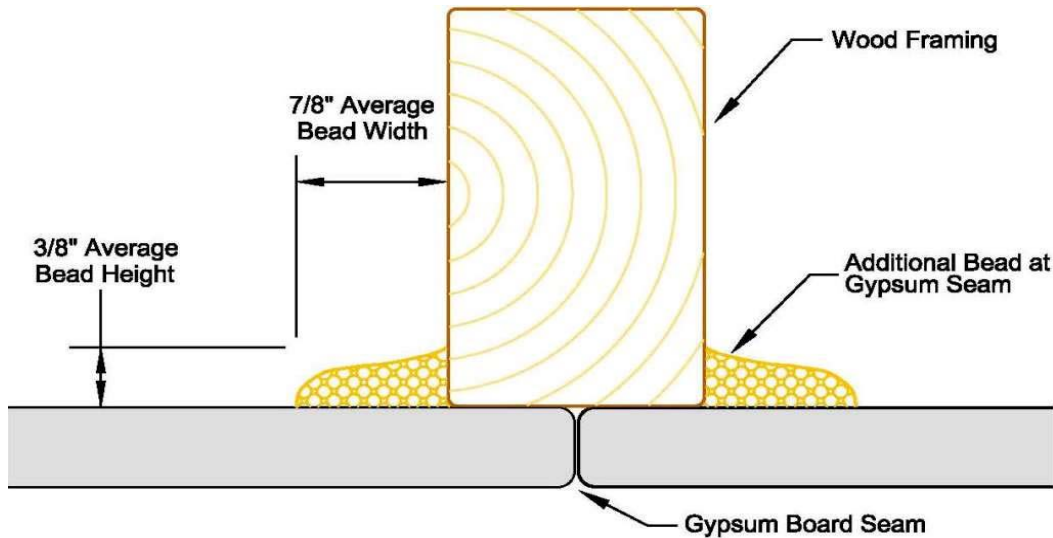
**Note:**

Ceiling Diaphragm and Dead Load Resistance testing is valid for all gypsum boards listed below, as long as the gypsum manufactured maintains a third party product listing showing compliance to ASTM C1396.

**Gypsum and Cement Board Tested for Ceiling Use**

- |   |  |
|---|--|
| 1/2" American Gypsum Ceiling Board              | 1/2" USG SHEETROCK® Brand MH UltraLight Ceiling Panels ULTRA-BASE™   |
| 1/2" CertainTeed Gypsum Easi-Lite™ Gypsum Board | 1/2" USG ULTRA-BASE™ Ceiling Board                                   |
| 1/2" CertainTeed Gypsum Interior Ceiling Board  | 5/16" Gold Bond Gypsum Board   |
| 1/2" Georgia-Pacific Gypsum Board               | 1/2" Durock® Cement Board Next Gen (Dead Load use only)              |
| 1/2" USG FibeRock Brand MH Gypsum Fiber Board   | 5/8" USG SHEETROCK® Firecode Core Type X Gypsum (Dead Load use only) |

**Adhesive Application**



**Figure 1 - Ceiling use bead sizes**

**Product Labeling**

Each container shipped of **AlphaSeal 5200**, that is covered by this **PER**, must have a label attached with at least the following information:

1. **Alpha Systems, Inc.** Name and Address.
2. Date of manufacture
3. Shelf life information
4. This **PER** Number & **Pei ES** Logo
5. Smoke and Flame Spread Ratings
6. Component name

**Acceptable Evaluation Marks****Product Documentation**

- A Product Evaluation Service Agreement between **Pei Evaluation Service®** and **Alpha Systems, Inc.**
- A Follow-up Inspection Service Agreement between **Progressive Engineering Inc.** and **Alpha Systems, Inc.**
- A signed Quality Control Manual - Dated: April 28, 2017
- Alpha Systems, Inc. AlphaSeal 5200** Technical Data Sheet - Dated: 4/25/2014
- SDS for **Alpha Systems, Inc. 5200A** - Dated: 5/19/2015
- SDS for **Alpha Systems, Inc. 5200B** - Dated: 6/25/2015
- Opinion Letter - Dated: 8/17/2000
- Opinion Letter - Dated: 10/17/2001
- Opinion Letter - Dated: 11/15/2001
- Opinion Letter - Dated: 1/5/2012
- Opinion Letter - Dated: 1/20/2014

**Ceiling Diaphragm Test Reports**

- A **PEI** test report no. 1998-1028 - Full Scale Cathedral Ceiling Diaphragm Test 11'-9" x 48'-0" Using ALPHASEAL 5200 - Dated: 6/30/1998 - Latest Revision: 5/24/2013 Addendum K
- A **PEI** test report no. 1998-1030 - Full Scale Ceiling Diaphragm Test on an 15'-6" x 48'-0" Flat Ceiling using ALPHASEAL 5200 - Dated: 7/6/1998
- A **PEI** test report no. 1998-1032 - Full Scale Ceiling Diaphragm Test 15'-6" x 48'-0" Using ALPHASEAL 5200 - Dated: 7/7/1998
- A **PEI** test report no. 1998-1558 - Full Scale Ceiling Diaphragm Test on an 11'-9" x 48'-0" Flat Ceiling using ALPHASEAL 5200 - Dated: 6/26/1998
- A **PEI** test report no. 2004-0607 - Full Scale Ceiling Diaphragm Test on a 13'-6" x 24'-0" Using Alphaseal 5200 - Dated: 5/4/2004

**Ceiling Dead Load Test Reports**

- A **PEI** test report no. 1998-0998 - Ceiling Dead Load Test using ALPHASEAL 5200 - Dated: 7/2/1998
- A **PEI** test report no. 2000-0326 - Ceiling Dead Load Tests using 1/2" Fiberock - Dated: 2/28/2000
- A **PEI** test report no. 2002-0358(A) - Ceiling Dead Load Tests using 5/16" USG Sheetrock MH - Dated: 3/1/2002
- A **PEI** test report no. 2000-0358(B) - Ceiling Dead Load Tests using 5/8" USG Sheetrock Firecode Core Type X - Dated: 3/2/2002
- A **PEI** test report no. 2013-0272 - PEI Standard No. 93-8 Ceiling Board Dead Load Test on 1/2" DUROCK® Cement Board Next Gen Parallel to 16" o.c. Lumber Framing using AlphaSeal 5200 - Dated: 2/14/2013 - Revised: 7/23/2013

**Ceiling Sag Test Report**

- A **PEI** test report no. 2001-0955(C) - Ceiling Sag Test using 1/2" American Gypsum and Alphaseal 5200 Two-Part Adhesive - Dated: 6/18/2001

**PEI Standard No. 93-7 Test Report**

- A **PEI** test report no. 2011-0675 - PEI Standard No. 93-7 Evaluation of Alphaseal 5200 With a New Polyol - Dated: 10/17/2011

**Stability at 200°F Test Report**

- A **PEI** test report no. 2012-1394 - 2012 IBC 803.10 Wall and Ceiling Finishes Stability at 200°F Using AlphaSeal 5200 - Dated: 10/25/2012



