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**Initial Approval**  
October, 2013

**Re-Approved**  
October, 2018

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**Report Owner**  
**The Dow Chemical Company**  
1881 West Oak Parkway  
Marietta, GA 30062

**Approved Manufacturing Locations**  
**The Dow Chemical Company**  
1881 West Oak Parkway  
Marietta, GA 30062

**Product**  
**Voramer ME 3513** One-Part Polyurethane Adhesive

**Evaluation Report Information**  
[www.dow.com](http://www.dow.com)  
**DOW** Contact: Rebekah Patton - (678) 269-1392

**General Details**

**Voramer ME 3513** adhesive is used to bond structural wood framing to gypsum wall construction by applying adhesive beads between these materials and using mechanical fasteners.

**Product Description**

**Voramer ME 3513** is a one-part MDI polyurethane adhesive system meant to be used in an indoor manufacturing facility. This adhesive is not to be applied in an outdoor uncontrolled environment. This adhesive may be used in high temperature and humidity conditions and does not off-gas Formaldehyde into the air.

**Containers and Storage**

The one-part adhesive is shipped in 2500 lb. disposable totes and 475 lb. steel drums. Storage of these containers should be in an indoor conditioned place between 59°F. and 86°F. Unopened containers 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 substrates shall be clean and dry with loose dust blown off and free from liquids, oil, grease, etc. **Voramer ME 3513** polyurethane adhesive shall be applied in an ambient temperature range of 50°F and higher. The adhesive is applied along the framing member according to [The Dow Chemical Company](#) Application Instructions. After the last bead has been applied, the structure shall not be moved for a minimum of fifteen to twenty (15-20) minutes and shall remain in the same ambient conditions for a minimum of twelve (12) hours.

**Voramer ME 3513** adhesive is approved for use in shear wall assemblies. Two (2) beads shall measure a minimum of 1/16" to 1/8" on 2x3 dimension lumber and one (1) bead measuring at a minimum of 1/16" to 1/8" on 1x3 dimension lumber. See Table 1 for tested assembly requirements and shear wall capacities.

**Evaluation Criteria**

1. The **Voramer ME 3513** adhesive shall be applied according to [The Dow Chemical Company](#) Application Instructions in an indoor manufacturing facility. A copy of these instructions must be made easily available at the assembly areas.
2. **Voramer ME 3513** adhesive is to be manufactured at [The Dow Chemical Company](#) plant in Marietta, GA following their approved Q.C. program with unannounced inspections by *Progressive Engineering Inc.*
3. The use of **Voramer ME 3513** polyurethane adhesive in a fire rated assembly is not addressed in this Evaluation.
4. A vapor barrier cannot be used between the adhesive and the substrates.
5. **Voramer ME 3513** is to be adhered to the back side standard raw gypsum and is not intended for other gypsums such as foil backed, moisture resistant or water resistant gypsums.
6. Construction of assemblies using **Voramer ME 3513** and their design values shall be in accordance with the assemblies listed in Table 1 and the applicable test reports.

**Building Code Compliance**

2012 / 2015 International Building Code	2012 / 2015 International Residential Code
Section 104.11 Section 1709	Section 104.11

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

**Tested to**

**ASTM E 72-05** - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction

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

**CA 25-4** - Standard for the Evaluation of Adhesives for Structural Use in Multi-Unit Manufactured Housing and Commercial Coach Construction

**ASTM D 905-03** - Standard Test Method for Strength Properties of Adhesive Bonds in Shear by Compression Loading

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

**Shear Wall Designs with Gypsum Board**

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

Framing				Gypsum Orientation	Gypsum Brand	Single or Double Sided	Ultimate Load	Test Report #
Top Plate	Bott. Plate	Studs	Stud Spacing				lb/ft	
1x3	1x3	2x3	16" o.c.	5/16" Vertical	AG - EagleRoc	Single	655.9	2008-1526(A)
					National Gyp	Single	643.2	2008-1110(A)
					USG Gyp	Single	624.6	2008-1110(B)
					National Gyp	Double	907.9	2008-1110(C)
					USG Gyp	Double	972.1	2008-1110(D)
				1/2" Vertical	AG - EagleRoc	Double	966.9	2008-1526(B)
					USG MH UL-TB	Single	529.0	2014-1223(A)
					USG MH UL-TB	Double	885.0	2014-1223(B)
				1/2" Horizontal	ProRoc	Single	565.1	2008-1634(A)
					ProRoc	Double	944.4	2008-1634(B)
USG MH UL-TB	Double	950	2012-1569(AA)					
2x3	2x3	2x3	16" o.c.	1/2" Horizontal	USG MH UL-TB	Single	785	2012-1569(W)
					USG MH UL-TB	Double	1125	2012-1569(R)

**Notes:**

1. Bead sizes as described in each test report

2. Ultimate load does not include any required safety factors. Applicable safety factors shall be determined and applied by the designer of record. The 2012 & 2015 IBC requirement for tested assemblies (See Section 1709) may be used for guidance on safety factor requirements.

**Product Labeling**

Each cylinder shipped of **Voramer ME 3513** that is covered by this **PER** must have a label attached with at least the following information:

1. [The Dow Chemical Company](#) Name and Address
2. Date of manufacture or Lot No.
3. Shelf life information
4. This **PER** Number & *Pei* **ES** Logo
5. Component name

**Acceptable Evaluation Marks**



## Product Documentation

- A Product Evaluation Service Agreement between **Pei Evaluation Service®** and [The Dow Chemical Company](#)
- A Follow-up Inspection Service Agreement between [Progressive Engineering Inc.](#) and [The Dow Chemical Company](#)
- ISO 9001:2008 Quality Management System Certificate Registration No. 055759 QM08 - DQS GmbH Accreditation Body - Dated: 11/21/2014
- A Technical Data Sheet for **Voramers ME 3513** Adhesive - Form No. 756-09401-01/13
- A SDS for **Voramers ME 3513** Isocyanate - Dated: 4/24/2015
- Pei** test report no. 2007-1302 (A) - Evaluation of Sheathing Materials Racking Load - Single Sided Wall Using 1x3 Plates and USG Gypsum and Voramer ME-3805 ISO Adhesive - Dated: 10/1/2007
- Pei** test report no. 2007-1302 (B) - Evaluation of Sheathing Materials Racking Load - Double Sided Wall Using 1x3 Plates and USG Gypsum and Voramer ME-3805 ISO Adhesive - Dated: 10/8/2007
- Pei** test report no. 2008-1110 (A) - Evaluation of Sheathing Materials Racking Load - Single Sided Wall Using 1x3 Plates and National Gypsum Company Gypsum and Voramer ME 3513 Adhesive - Dated: 8/26/2008
- Pei** test report no. 2008-1110 (B) - Evaluation of Sheathing Materials Racking Load - Single Sided Wall Using 1x3 Plates and USG Gypsum and Voramer ME 3513 Adhesive - Dated: 8/27/2008
- Pei** test report no. 2008-1110 (C) - Evaluation of Sheathing Materials Racking Load - Double Sided Wall Using 1x3 Plates and National Gypsum Company Gypsum and Voramer ME 3513 Adhesive - Dated: 9/9/2008
- Pei** test report no. 2008-1110 (D) - Evaluation of Sheathing Materials Racking Load - Double Sided Wall Using 1x3 Plates and USG Gypsum and Voramer ME 3513 Adhesive - Dated: 9/3/2008
- Pei** test report no. 2008-1421 - Adhesive Tests following California CA 25-4 Tests using Voramer ME 3513 Adhesive - Dated:
- Pei** test report no. 2008-1526 (A) - Evaluation of Sheathing Materials Racking Load - Single Sided Wall Using 1x3 Plates and 5/16" Eagleroc Gypsum and Voramer ME 3513 Adhesive - Dated: 10/30/2008
- Pei** test report no. 2008-1526 (B) - Evaluation of Sheathing Materials Racking Load - Double Sided Wall Using 1x3 Plates and 5/16" Eagleroc Gypsum and Voramer ME 3513 Adhesive - Dated: 10/29/2008
- Pei** test report no. 2008-1634 (A) - Evaluation of Sheathing Materials Racking Load - Single Sided Wall Using 1x3 Plates and 1/2" ProRoc Gypsum and Voramer ME 3513 Adhesive - Dated: 10/30/2008
- Pei** test report no. 2008-1634 (B) - Evaluation of Sheathing Materials Racking Load - Double Sided Wall Using 1x3 Plates and 1/2" ProRoc Gypsum and Voramer ME 3513 Adhesive - Dated: 10/29/2008
- Pei** test report no. 2009-1424 - ASTM D 5582 Determining Formaldehyde Levels from Adhesive Products using a Desiccator - Dated: 2/10/2010
- Pei** test report no. 2012-1569 (AA) - ASTM E72 Evaluation of Sheathing Materials - Double Sided Racking Load Using 1/2" SHEETROCK Brand MH UltraLight Panels Tuf-Base (Horizontal) using DOW Chemical Voramer ME 3513 One-Part Adhesive and 1x3 Frame Plates - Dated: 3/13/2013
- Pei** test report no. 2012-1569 (R) - ASTM E72 Evaluation of Sheathing Materials - Double Sided Racking Load Using 1/2" SHEETROCK Brand MH UltraLight Panels Tuf-Base (Horizontal) using DOW Chemical Voramer ME 3513 One-Part Adhesive and 2x3 Frame Plates - Dated: 3/7/2013
- Pei** test report no. 2012-1569 (W) - ASTM E72 Evaluation of Sheathing Materials - Single Sided Racking Load Using 1/2" SHEETROCK Brand MH UltraLight Panels Tuf-Base (Horizontal) using DOW Chemical Voramer ME 3513 One-Part Adhesive and 2x3 Frame Plates - Dated: 3/12/2013
- Pei** test report no. 2014-1223 (A) - ASTM E72 Evaluation of Sheathing Materials - Single Sided Racking Load Using 1/2" SHEETROCK Brand MH UltraLight Panels Tuf-Base (Vertical) using DOW Chemical Voramer ME 3513 One-Part Adhesive and 1x3 Frame Plates - Dated: 8/27/2014
- Pei** test report no. 2014-1223 (B) - ASTM E72 Evaluation of Sheathing Materials - Double Sided Racking Load Using 1/2" SHEETROCK Brand MH UltraLight Panels Tuf-Base (Vertical) using DOW Chemical Voramer ME 3513 One-Part Adhesive and 1x3 Frame Plates - Dated: 8/27/2014
- Pei** test report no. 2018-6060(A) - ASTM C557 Test on Voramer™ ME 3513 Isocyanate Adhesive - Dated: 8/7/2018