



Product Evaluation Report

PER-05009

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Initial Listing
January, 2002

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Listed Product

Voramers MB 3099 Two-Part Polyurethane Adhesive

Listed For

The Dow Chemical Company

1881 West Oak Parkway
Marietta, GA 30062

Approved Manufacturer

The Dow Chemical Company

1881 West Oak Parkway
Marietta, GA 30062

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 **Dow Chemical Company** 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

Voramers MB 3099 adhesive is used to bond structural wood framing to gypsum in ceiling and wall construction without the use of mechanical fasteners.

Product Description

Voramers MB 3099 is a two-part foaming 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 comprised of "Voramers MB 3099 Polyol" and "Voramers ME 3044 Isocyanate". The Voramers ME 3044 ISO is a pre-mixed standard material shipped from a supplier and the Voramers MB 3099 Polyol is manufactured by The Dow Chemical Company. This adhesive does not off-gas Formaldehyde into the air.

Containers and Storage

The A & B components are shipped in 250 gallon disposable totes, 55 gallon steel drums and 350 returnable tanks. Storage of these containers should be in an indoor conditioned place between 70°F. and 90°F. Unopened containers will have a storage life of up to six months in these conditions.

General Product Use

The gypsum board being used should be clean and dry with loose dust blown off and free from liquids, oil, grease, etc. Recommended gypsum temperature is greater than 50°F. Voramers MB 3099 Polyol adhesive should be applied in an ambient temperature range of 65°F. to 75°F. The adhesive is applied along the intersection of the vertical plane of the wooden member and the horizontal plane of the gypsum board according to **The Dow Chemical Company's** application instructions. The adhesive temperature at the heater block should be between 100°F. and 115°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.

Voramers MB 3099 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" 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 Voramers MB 3099 adhesive shall be installed according to **The Dow Chemical Company's** application instructions. A copy of these instructions must be made easily available at the assembly areas.
2. This Listing is for Voramers MB 3099 to be applied in an indoor manufacturing facility and is not meant to be applied in an outdoor uncontrolled environment.

- 3. Voramer MB 3099 adhesive is to be manufactured at The Dow Chemical plant in Marietta, GA following their approved Q.C. program with unannounced inspections by Progressive Engineering Inc.
- 4. The use of Voramer MB 3099 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. Voramer MB 3099 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 Voramer MB 3099 and their design values should be as described in the following test reports.

Building Code Compliance

| | | |
|--|-----------------------------|----------|
| 2003 International Building Code(IBC) | 1997 Uniform Building Code | 2006 IBC |
| 2003 International Residential Code(IRC) | 1999 Standard Building Code | 2009 IBC |
| 1999 BOCA National Building Code | 2006 IRC | 2009 IRC |

Tested to

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

Product Documentation

A MSDS sheet for Voramer MB 3099 Polyol - Dated 1/24/2006

A MSDS sheet for Voramer ME 3044 Isocyanate - Dated 1/24/2006

Voramer™ Industrial Adhesive User Manual dated January 21, 2002

A follow-up Listing & Inspection agreement between *Progressive Engineering* & *The Dow Chemical Company*

Opinion Letter dated: 4/15/2005

The following is a categorized list of test reports for Voramer MB 3099 Adhesive.

| <u>Ceiling Diaphragm Tests</u> | <u>Ceiling Dead Load Tests</u> | <u>Fire Tests</u> | <u>Small Scale Tests</u> |
|--------------------------------|--|--------------------|--------------------------|
| 2001-1461 | 2001-1506 | FH-1317 - 5/30/02 | 2002-1291 |
| 2001-1464 | 2002-1383 | RCB0302 - 11/11/03 | |
| 2001-1504 | | RCB0304 - 11/13/03 | |
| | | RCB0501 - 5/04/05 | |
| 2001-1505 | <u>Wall Racking Tests (wood studs)</u> | | |
| | 2002-641 | 2004-924 (D) | 2008-1260 |
| | 2004-924 (A) | 2004-924 (E) | 2008-1642 |
| | 2004-924 (B) | 2004-924 (F) | 2008-1780 |
| | 2004-924 (C) | 2004-1084 | |

Design Values

Ceiling Diaphragm Design Load = **202 plf** (11' 8" minimum width x 52 ft. Maximum diaphragm span)

Ceiling Dead Load Resistance = **15.5 psf**

Product Labeling

Each container shipped of Voramer MB 3099 that is covered by this PER must have a label attached with at least the following information:

- 1. *The Dow Chemical Company*'s name and address.
- 2. Date of manufacture
- 3. Shelf life information
- 4. This PER number & *Pei*'s logo
- 5. Smoke and Flame Spread Ratings
- 6. Component name

