

AUGUST 2009



## Part 1 General

### 1.01 DESCRIPTION

OlyBond500 is a dual-component polyurethane adhesive used to adhere a variety of board stocks to most roof substrates in both new and re-roof applications. It can also be used to adhere insulation board to insulation board. OlyBond500 is dispensed in a semi-liquid bead that spreads to several inches while rising ¾ to 1 inch above the substrate. Place the board stock into the adhesive and walk into place. A chemical cure takes place securing the board in approximately 4 to 8 minutes after application, depending on temperature and weather conditions.

### 1.02 TYPICAL PHYSICAL PROPERTIES

PHYSICAL PROPERTY	TEST METHOD	TYPICAL VALUES
Density	ASTM D-1622	3.2 lb./cf
Compressive Strength	ASTM D-1621	38 psi @ 6% deflection
Tensile Strength	ASTM D-1623	35 psi
Water Absorption	ASTM D-2842	5.1%
Closed Cell Content	ASTM D-6226	90% min.
R-Value	ASTM C-518	3.8/inch (new)
VOC Content	ASTM D-2369	< 5 g/L
Weight/Gallon	Part 1 Component Part 2 Component	10.32 lbs. 8.54 lbs.

### 1.03 PACKAGING

- Package Sizes:
  - 10 gallon Bag-in-Box sets for use with the PaceCart 2® (5 gal. Part 1; 5 gal. Part 2).
  - 1500 ml SpotShot cartridge sets for use in specially designed applicators.

- Formulas\* (Part 2 component, 5 gallon Bag-in-Box):
  - Winter (40°F–60°F)
  - Regular (60°F–90°F)
  - Summer (90°F +)

\*Part 1 component, 5 gallon Bag-in-Box is required for all applications and is not temperature dependent.

- Formulas (1500 ml SpotShot cartridges):
  - Regular (40°F +)
  - Winter (0°F–40°F)

### 1.04 QUALITY ASSURANCE

The OlyBond500 adhesive must be installed in compliance with the information outlined on the OlyBond500 Request for Warranty form and approved in writing by an authorized representative of OMG, Inc.

### 1.05 SUBMITTALS

To insure compliance with the OMG warranty requirements, the following information must be submitted to OMG for review prior to installation, and preferably prior to bid:

- Request for Warranty form filled out with the correct project information.
- Unusual projects such as air pressurized buildings, cold storage buildings, buildings that have large openings (e.g. where the total wall openings exceed 10% of the total wall area on which the openings are located), may require additional review time.

### 1.06 JOB CONDITIONS

- Insure that you have the correct OlyBond500 formulation (i.e. Regular, Winter or Summer) for the surface and ambient temperature.
- On retrofit-recover projects, the existing roofing material must be investigated to insure adequate attachment of existing system. All wet material must be identified and removed prior to the application of the OlyBond500 adhesive.

3. Existing Phenolic Insulation must be removed.
4. Coordination between trades is essential to avoid unnecessary rooftop traffic.

### 1.07 STORAGE AND HANDLING

1. Store in a cool, dry location at temperatures between 55°F and 85°F. Protect from freezing at all times. If properly stored, the shelf life for unopened product is 18 months from the date of manufacture.
2. Keep containers closed. Contamination by moisture or basic compounds can cause dangerous pressure build-up in a closed container.
3. The minimum product temperature before application should be 72°F. The minimum ambient and surface temperatures should be 40°F and rising unless the SpotShot winter formulation is being used.

### 1.08 APPROVALS

OlyBond500 is approved by most roof system manufacturers and is Factory Mutual, Florida Building Code, Miami Dade and UL approved.

### 1.09 FIRST AID

In case of contact with eyes, immediately flush eyes with running water for at least 15 minutes. Call a physician immediately. In case of contact with skin, wash affected area with soap and water. Remove all contaminated clothing and shoes and clean before re-use. If swallowed, give large amounts of water to dilute. If vomiting occurs, give more water. Call a physician immediately.

### 1.10 DISPOSAL

PMDI in Part 1 component may cause pollution. Do not discharge into lakes, streams, ponds or public waters. Spilled material, unused contents and empty containers should be neutralized and disposed of in accordance with local, state and federal regulations.

### 1.11 WARRANTY

OMG issues a 10 year limited material warranty on all OlyBond500 purchases. A full adhesion warranty is available by contacting OMG prior to starting the project and submitting a completed Request for Warranty form.

## Part 2 Product

### 2.01 COMPOSITION AND MATERIALS

OlyBond500 is a dual-component, reaction cure polyurethane adhesive. The blowing agent is water. OlyBond500 does not contain HCFC and has low VOCs.

OlyBond500 is available in 10 gallon sets of Part 1 (diisocyanate, 5 gallons), and Part 2 (resin, 5 gallons). OlyBond500 is also available in 1500 ml SpotShot cartridge sets (4 cartridges/case).

### 2.02 COMPATIBILITY

#### 1. Roof Decks and Substrates:

- Structural concrete
- Gypsum
- Cementitious wood fiber plank
- Lightweight insulating concrete
- Steel (22 gauge or thicker with approved cross section)
- Plywood (5/8-inch thick min.)
- Smooth surface BUR
- Smooth and granular surface modified bitumen
- Existing sprayed in place polyurethane foam
- Base sheets
- Most vapor barriers (including asphaltic and fleece-top)

#### 2. Roof Insulation and Cover Board:

- Expanded Polystyrene
- Polyisocyanurate
- High Density Wood Fiber
- DensDeck®
- Perlite
- Securock®
- Certain Extruded Polystyrene

Any substrate or insulation not listed must be reviewed by OMG. Call 800-633-3800.

### 2.03 LIMITATIONS

1. OlyBond500 is not recommended for use with isocyanurate board stock larger than 4 feet x 4 feet.
2. OlyBond500 is not recommended for application when ambient or substrate temperatures are below 40°F.

3. SpotShot winter formulation is specifically designed to be applied between 0°F and 40°F.
4. OlyBond500 is not recommended for use during wet weather.
5. OlyBond500 cannot be used on wet surfaces.
6. OlyBond500 cannot be used on dirty or grease-laden surfaces.
7. OlyBond500 is not recommended for use on any roof deck that shows signs of deterioration or loss of structural integrity.
8. OlyBond500 is not recommended for use after the expiration date. Contact OMG at 800-633-3800 for options and instructions.

## Part 3 Execution

### 3.01 ROOF DECK CRITERIA

1. The building owner or general contractor shall provide a proper substrate. The structure shall be sufficient to withstand normal construction load and live loads.
2. Defects in the deck must be documented and reported to the specifier, general contractor, roof cover manufacturer and OMG, Inc. The application of OlyBond500 shall not proceed unless the defects are corrected.
3. It is the responsibility of the roofing contractor to ensure that the existing roof is adequately attached to the building and meets all the requirements for an acceptable surface.
4. Acceptable decks are structural concrete, gypsum, cementitious wood fiber plank, lightweight insulating concrete, minimum 22-gauge steel, minimum 5/8-inch plywood.

### 3.02 SURFACE PREPARATION

1. **General.** All surfaces must be dry and free of any debris, dirt, oil or grease before applying OlyBond500.
2. **Specific Conditions**
  - a. **Steel.** The bonding surface of steel decks must be dry and free of debris, dirt, grease and oil. On new steel, the shop coating/mill oil must be removed. The bonding surface must be free of any cleaner before applying OlyBond500.
  - b. **Existing Smooth Asphaltic Surfaces.** The surface must be dry and free of debris, dirt, grease and oil.

**c. Existing Polyurethane Foam.** The surface of the polyurethane roof, including the coating, should be removed with a scarifier (minimum 1/2 inch). The bonding surface should be blown clean before applying OlyBond500.

**d. Metal.** OlyBond500 has excellent adhesion to clean metal. It is recommended that all non-ferrous metals (aluminum, copper, stainless, etc.) be primed to further increase adhesion. Accepted primers include epoxy, chlorinated rubber, and wash primer.

**e. Other.** For other substrates not listed, contact OMG at 800-633-3800.

### 3.03 INSULATION

Review the roofing insulation plan. Polyisocyanurate insulation boards cannot be larger than 4 feet x 4 feet. Multiple layers of boards should use the staggered joint method of application. Compatible insulation other than polyisocyanurate can be 4 feet x 8 feet maximum size.

### 3.04 PRODUCT INSTALLATION

#### 1. Using PaceCart 2™

- a. Install Part 1 and Part 2 components following instruction on Bag-in-Box package.
- b. Open flow valves on the dispenser completely and turn machine on. This allows adhesive to be pumped at a 1:1 ratio through the disposable mix tip and onto the substrate in a semi-liquid state.
- c. Apply fluid mixture in 3/4 to 1 inch wide wet beads spaced maximum of 12 inches on center that spreads in excess of 2 inches wide while rising 3/4 to 1 inch.
- d. Lay insulation board into place and walk-in to assure complete adhesion. Curing typically occurs in 4 to 8 minutes depending on temperature and weather conditions.
- e. Check with roof system manufacturer for project-specific spacing requirements.

#### 2. Using SpotShot Applicator

- a. Attach the disposable mix tip to the top of the SpotShot tube. Insert the tube into SpotShot dispensing tool and dispense onto the substrate. Apply fluid mixture in rows spaced maximum of 12 inches on center that spread to several inches wide while rising 3/4 to 1 inch.

- b. Lay insulation board into place and walk-in to assure complete adhesion. Curing typically occurs in 4 to 8 minutes depending on temperature and weather conditions.
- c. Check with roof system manufacturer for project-specific spacing requirements.

### 3.05 TYPICAL APPLICATION RATES

Application rates vary depending on surface roughness and absorption rate of the substrate. Typical coverage rates for OlyBond500 dispensed through the PaceCart 2 are 10–20 squares per 10 gallon Bag-in-Box sets. Typical coverage rates for OlyBond500 SpotShot dispensed through applicators is 4–6 squares per case (4 sets of 1500 ml cartridges). All coverage rates are based on 12 inch on center maximum spacing. See chart below for typical application rates on specific substrates.

APPLICATION RATES (Bag-in-Box Dispensed from PaceCart 2)	TYPICAL COVERAGE Squares/Gallon
Insulation to Concrete	1.7 to 2
Insulation to Insulation	1.7 to 2
Insulation to Smooth BUR	1.5 to 1.7
Insulation to Modified Bitumen	1.5 to 1.7
Insulation to Gypsum	1 to 1.2
Insulation to Lightweight Concrete*	1 to 1.7
Insulation to Wood	1.7 to 2
Insulation to Cementitious Wood Fiber	1 to 1.2
Insulation to Steel	1 to 1.2

\*Coverage rate may vary substantially based on the absorption rate and/or the surface conditions of the LWC.

### 3.06 REACTION TIME

It is important to monitor the speed of the reaction in relation to the temperature (substrate and ambient) at time of application to ensure a complete reaction. Note the charts below for correct 'Part 2' component selection:

## TYPICAL REACTION TIME CHARACTERISTICS

### A. 5 Gallon Bag-in-Box Packaging

TEMPERATURE	PART 2 FORMULA	TACK FREE TIME (minutes)	SET UP TIME (minutes)
40°F–60°F	W	3–5	10–12
60°F–90°F	R	3–5	10–12
90°F+	S	3–5	10–12



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### B. 1500 ml SpotShot Cartridges

TEMPERATURE	PART 2 FORMULA	TACK FREE TIME (minutes)	SET UP TIME (minutes)
0°F–40°F	W	3–4	10–12
40°F+	R	3–5	10–12

**Important:** When applying OlyBond500, board stock must be placed into the adhesive shortly after it has reached its maximum rise while it is still wet and tacky and before it reaches its tack free state.

### 3.07 AVAILABILITY AND COST

OlyBond500 is available throughout the USA and Canada. For availability and pricing contact OMG, Inc. at 800-633-3800. Deliveries directly to job sites and to specific locations are available.

### 3.08 PRECAUTIONS

- IN CASE OF FIRE:** Use water spray, foam or CO<sub>2</sub>. Firefighters should be equipped with self-contained breathing apparatus and turnout gear for protection against PMDI vapors and toxic decomposition products. Avoid water contamination in closed container or confined areas.
- DO NOT LEAVE ADHESIVE EXPOSED OR UNPROTECTED.** Polyurethane foam or isocyanurate foam products may present a serious fire hazard if exposed or unprotected. Each person, firm or corporation engaged in the manufacture, production, application, installation or use of any of these materials should carefully determine whether there is a potential fire hazard associated with such product in a specific usage and utilize all appropriate precautionary and safety measures as outline in local, state and federal regulations. When not in use keep stored containers closed.



Florida Building Code

