

# Millennium PG-1 Pump Grade Adhesive

## Low Viscosity Insulation Adhesive

### Description

Millennium PG-1 Pump Grade Adhesive is a two component, essentially VOC free, all purpose, low rise, polyurethane foamable adhesive that contains no solvents and sets in minutes.

Application is quick and easy resulting in significant labor savings for the contractor. Millennium PG-1 Pump Grade Adhesive is dispensed through the Patented Millennium Cyclone Low Pressure Pump Cart\* (by Garlock), or an approved low pressure pump cart which equally mixes Part 1 and Part 2 of the adhesive, providing a quality, consistent application each time.

### Basic Use

Millennium PG-1 Pump Grade Adhesive is designed for use as an adhesive for bonding approved roof insulations to a building's structural roof deck, base sheets, other insulation boards, and smooth or graveled built-up roof surfaces. It is dispensed 1/2" to 3/4" (1.3cm to 1.9cm) wide liquid beads that will quickly spread to a width of 2-3 inches. Millennium PG-1 Pump Grade Adhesive will expand and rise to fill minor surface irregularities.

### Approved Insulations and Substrates

- HD wood fiber
- Polyisocyanurate
- Perlite (upon approval)
- Polystyrene
- Gypsum cover board
- HD PUR Cover Board
- Asphaltic cover boards
- Concrete
- Gypsum roof deck
- Cementitious wood fiber
- Wood or steel
- Mineral wool
- Lightweight insulating concrete
- Modified bitumen membranes and base sheets (sanded or granule surfaced)
- Approved insulations (multi-layer applications)
- Smooth or gravel surface built-up roof (re-roof applications)

For a complete list of approved substrates and insulation types, or for additional information, contact our Technical Department.

### Storage

Keep temperature of contents between 45°F to 95°F (7°C to 35°C). Bring temperature of material to approximately 70°F (21°C) before use. Do not store in direct sunlight or above 95°F (35°C). Store boxes valve side up. **KEEP FROM FREEZING!**



### Features

Replaces fasteners

Essentially VOC free

Solvent free

### Benefits

Minimizes deck corrosion and eliminates thermal bridging

Meets OTC and SCAQMD regulations

Suitable for use with XPS and EPS insulation

### Surface preparation

All work surfaces should be clean, dry, and free of dirt, dust, debris, oils, loose and/or embedded gravel, un-adhered coatings, deteriorated membrane and other contaminants that may result in a surface that is not sound or is uneven.

For re-cover applications over gravel surfaced BUR apply Millennium Universal Primer prior to the application of Millennium PG-1 Pump Grade Adhesive. For applications over fresh and/or non-oxidized asphalt, coal tar or plastic film membranes, Millennium Surface Treatment may be required prior to the application of Millennium PG-1 Pump Grade Adhesive.

### Safety

Prior to working with this or any adhesive product consult product label and Safety Data Sheet (SDS) for necessary health and safety precautions.

### Limitations

- Do not apply to wet surface.
- Not recommended for use with insulation boards larger than 4' x 4' (1.2m x 1.2m).
- Do not use warped or curled insulation boards. All insulation boards must lay flat upon the roof surface.
- **Do not apply when temperatures are below 25°F (-4°C).**

\*US 9,573,150 B2; US 9,566,594 B2

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## Application

**Note:** Millennium PG-1 Pump Grade Adhesive can be applied when both ambient and substrate surface temperatures are at 25°F (-4°C) and rising provided the adhesives are properly stored. Millennium PG-1 Pump Grade Adhesive should be stored at approximately 70°F + (21°C+) for a minimum of 48 hours prior to use and remain in a warm storage area until ready for use on the rooftop. Storing the adhesive below the recommended application temperature range prior to use can have a negative effect on product performance which may include reducing the expected coverage rates of the adhesive, delayed or extended reaction and set up times and in some cases can alter the mix of the two components.

In the event the adhesive is exposed to cooler temperatures for an extended period of time, it must be brought back up to the recommended application temperature prior to use. The adhesive should never be allowed to freeze. **Material stored and utilized at cold temperatures will be prone to crystallization of Part 1.**

1. Open the box utilizing the convenient tear strip and remove the plastic bladder from the box utilizing the easy-lift handle. Remove cap on plastic bladder and replace by attaching the quick connect fitting supplied in each box. (Connect the black fitting to the Part 1 bladder and the gray fitting to the Part 2 bladder.) Place the plastic bladder on the Patented Millennium Cyclone pump cart. **Make sure that the bladder labeled "Part 1" is placed in the Cyclone tray labeled "Part 1" and that the bladder labeled "Part 2" is placed in the tray labeled "Part 2"\*\*. For instructions on loading 15 gallon drum sets, contact your Field Service Representative.**
2. When using the Patented Millennium Cyclone low pressure pump cart, connect the black Part 1 fitting to the black feed hose fitting. Connect the gray Part 2 fitting to the gray feed hose fitting. Operate the pump according to Manufacturer's instructions (see Cyclone Operator's Manual).
3. Utilize the empty cardboard bladder container to capture adhesive pre-dispense or recycle empty cardboard containers.
4. Apply Millennium PG-1 Pump Grade Adhesive directly to the substrate using a ribbon pattern. Space the beads 12" (30cm) on center to achieve proper coverage rates for standard insulation attachment. **Note: Bead spacing requirements may vary and will be determined by the OEM Roof System Manufacturer.**
5. Once Millennium PG-1 Pump Grade Adhesive is applied, allow the foam to begin rising and place the insulation board into the adhesive before the adhesive has skinned over. Eliminate uneven surfaces to ensure positive contact between the insulation boards, adhesive, and substrates.
6. Plastic bladders are designed for easy visibility to ensure adhesive maintains a 1:1 ratio. If material is not consumed at a 1:1 ratio stop application and check for blockage in hose or dispensing manifold.
7. Unused material can be applied at a later date. Properly clean and grease the dispensing wand and pump unit according to the manufacturer's recommendations.
8. Millennium PG-1 Pump Grade Adhesive provided in 15 or 50 gallon drum sets can be used with approved pump systems. The adhesives should be placed on a drum roller or agitated prior to use.

Code #0029-0518

**WARRANTY:** Royal Adhesives and Sealants warrants its products to conform to Royal's specifications at the time of sale when tested according to Royal standards. If a product is proven to be defective when tested according to Royal standards, Royal will, at its option, refund the purchase price or replace or repair the defective product. THIS LIMITED WARRANTY IS THE BUYER'S SOLE AND EXCLUSIVE REMEDY AGAINST ROYAL ADHESIVES AND SEALANTS AND IS IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. In no event shall Royal be liable for any special, incidental, consequential, or punitive damages arising out of any claims whether based on negligence, contract, warranty, strict liability or otherwise.

## Equipment

- Patented Millennium Cyclone 1 Low Pressure Pump Cart\*
- Patented Millennium Cyclone 5/15 Low Pressure Pump Cart\*
- Graco E-10 Reactor
- Graco Predator
- Adhesives Systems Technology GMP-075
- Adhesives Systems Technology PCH GMP-500

For a complete list of approved low pressure pump carts, or additional information, contact our Technical Department.

## Color

Foamed adhesive will appear off white to light amber.

## Packaging and Coverage

Millennium PG-1 Pump Grade Adhesive is available in the following packages:

<u>Cartridge Size</u>	<u>Part #</u>	<u>Cartridges/Case</u>
1.5 Liter	PG-FA15-04	4

Covers 600 sq ft (56m<sup>2</sup>) per case. Coverage estimates indicate total square feet of insulation/membrane attachment per case.

<u>Size</u>	<u>Part #</u>	<u>Sets/Pallet</u>
5 gal (18.9L) box, Part 1 (A)	PG-IA5B-A01	18
5 gal (18.9L) box, Part 2 (B)	PG-IA5B-B01	
15 gal (58L) drum, Part 1 (A)	PG-15DR-A01	4
15 gal (58L) drum, Part 2 (B)	PG-15DR-B01	
50 gal (189L) drum, Part 1 (A)	PG-IADR-A01	2
50 gal (189L) drum, Part 2 (B)	PG-IADR-B01	

Part 1 and Part 2 mixed through an approved low pressure pump cart will produce the following coverage rates:

5 Gallon (18.9L) Kit: 2,500-3,000 sq. ft. (232m<sup>2</sup>-279m<sup>2</sup>)  
15 Gallon (56.7L) Kit: 7,500-9000 sq. ft. (697m<sup>2</sup>-836m<sup>2</sup>)  
50 Gallon (189L) Kit: 25,000-30,000 sq. ft. (2,323m<sup>2</sup>-2,787m<sup>2</sup>)

Coverage estimates indicate total square feet of insulation attachment per kit. Rates are based on an application pattern of 4 (four) 1/2" - 3/4" (1.3cm - 1.9cm) ribbons spaced 12" (30cm) o.c. per 4' x 4' (1.2m x 1.2m) insulation board. NOTE: A 1/2" - 3/4" (1.3cm - 1.9cm) wide uncured adhesive bead will produce a 2" - 3" (5.1cm - 7.6cm) wide cured adhesive bead that will rise approximately 3/4" - 1" (1.9cm - 2.5cm) above the substrate. Coverage rates may be lower when used over irregular surfaces and will vary depending on roughness.



NQA: 14-0102.01



Insulation Adhesives for roofing systems as to external fire exposure see UL Directory of products certified for Canada and UL Roofing Materials and Systems Directory. IWAS



\*Subject to the conditions of Approval when installed as described in the current edition of the FM Approval Guide.\*

\*US 9,573,150 B2; US 9,566,594 B2

\*\*US 9,174,234 B2; CA 2,806,690 C