LIQUITEC®

Partially & Fully Reinforced Modified Bitumen Restoration | Application Guidelines

DESCRIPTION

LiquiTec is an extremely low odor, fluid-applied waterproofing system designed to maintain, restore and upgrade the performance of aged modified bitumen, metal and single-ply roof systems. This two-component, 100% solids, aliphatic polyurea cures quickly to form a highly durable, impact and UV resistant roof membrane that increases the life span of the existing roof.

MATERIALS

The materials used in the LiquiTec modified bitumen restoration system include:

1. Coating: LiquiTec Base, LiquiTec, LiquiTec FG Gray, LiquiTec FG White
2. Primer: Garla-Block™ Primer, Metal Roof Primer (for priming metal components only)
3. Sealant: Green-Lock® Sealant XL or Tuff-Stuff® MS
4. Fabric Reinforcement: Grip Polyester™ Soft or UniBond ST™
5. Cleaning Solution: Simple Green® Oxy Solve

APPLICATION EQUIPMENT

1. 3/8" (10 mm) shed resistant nap roller
2. 1/4" (6.3 mm) notched squeegee
3. Heavy duty electric power drill (cordless drills are not permitted)
4. Jiffy mixer blade (ES model)
5. Wet Mil Gauge

INSTALLATION

Installation of the LiquiTec system is accomplished in the following steps: repair, preparation, priming (when required), mixing, and application.

Prior to installation, ensure that adhesion testing was conducted in accordance with Garland adhesion testing procedures to verify a minimum adhesion strength of four (4) pounds per linear inch (pli) for LiquiTec to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to applicator variance and surface texture. Gray LiquiTec Base must be used for base coat applications. For top coat applications, White LiquiTec or Gray LiquiTec Base may be used depending on desired finish coat color.

Repair

1. All necessary field and flashing repairs must be done according to good construction practices, including the removal of all wet insulation and defective materials as identified through a moisture detection survey such as an infrared scan and replacement with like materials.
2. All modified bitumen seams must be checked and any loose or damaged seams must be resealed/repaired.
3. Repair blisters, holes, cuts, cracks, splits or other modified bitumen surface defects with compatible Garland materials.
4. All roof areas must promote positive drainage.

Preparation

1. Confirm local water run-off ordinances and restrictions prior to cleaning roof.
2. Carefully power wash all roof surfaces with greater than 2,000 psi pressure to remove debris, rust, scale, dirt, dust, chalking, peeling or flaking coatings, etc. Do not force water into the roof system or damage roof surfaces.
3. Wearing personal protective clothing and equipment, remove algae, mildew or fungus with Simple Green® Oxy Solve and scrubbing with a push broom scrub brush. Rinse at least twice to be sure all cleaning agents or contaminants are completely removed to prevent adhesion issues.
4. If the roof surface becomes contaminated with dirt, dust or other particles at any time during the application of the LiquiTec system, cleaning measures must be taken to restore the surface to a suitable condition.
5. Ensure roof is dry prior to application.

Priming

On new asphaltic repairs or membrane, apply Garla-Block to prevent staining of LiquiTec coating. Allow Garla-Block to completely dry.

Mixing Procedure

1. Open LiquiTec container
2. Remove Part B jug and its plastic holding compartment out of the pail.
3. Mix Part A liquid for one (1) minute using an electric heavy-duty power drill and Jiffy mixer blade (ES model). Cordless drills are not permitted as they will not properly mix the materials.
4. While mixing, slowly pour contents of Part B jug into the Part A pail. Mix the two components together for two (2) minutes moving the Jiffy blade from top to bottom and along the sides to ensure the product is thoroughly mixed.

Always mix entire kit contents together as packaged. Do not break down into smaller quantities.

Note: Mixed product pot life is 25-35 minutes depending on ambient temperature. Rising temperatures may reduce pot life and lower the product's viscosity at a faster rate than desired. Lower product viscosity will increase flow rate making it more difficult to apply the coating at the specified coverage rate and fully saturate any fabric reinforcement.

Achieving Proper Coverage Rates

It is required for LiquiTec system applications to grid out pails on the roof surface based on the area each pail will cover based on the specified wet mil thickness. Properly sized notched squeegees and a mil gauges are useful tools, but gridding buckets on the roof top is the most effective method of achieving accurate coverage rates.

Application Of Partially Reinforced Modified Bitumen Restoration System

Modified Bitumen Field/Flashing Side Laps, End Laps and Details

(Choose Method 1 or 2)

Method 1: Application of UniBond ST

1. Always begin with flashing seams and details.
2. Verify the surface is clean and properly prepared.
3. Round corner edges of UniBond ST with scissors.
4. Remove the clear release liner from the back in workable sections.
5. Center 6" wide UniBond ST over the middle of lap. For other details requiring reinforcement such as drains, penetrations and

curbs, 12" wide UniBond ST is available.
6. Use care to install the tape uniformly. Do not stretch or cause air pockets, wrinkles or fishmouths.
7. Apply pressure to tape starting at the center and work toward outside edge with a steel roller to activate the bonding process.
8. Inspect the tape to ensure it is properly installed. Verify edges are tightly fixed to surface. If any discrepancies are present, repair before the coating is applied.
9. Saturate the tape's polyester surface with Gray LiquiTec Base coating and allow to cure before applying field coating.

Method 2: Application of Three-Course Gray LiquiTec Base

1. Always begin with flashing seams and details.
2. (Optional): To reduce the height of modified bitumen laps prior to three-course application, apply a bead of Green Lock Sealant XL, Tuff-Stuff MS sealant or LiquiTec coating into side and end laps. This will help eliminate voids or tenting under fabric reinforcement.
3. Determine where the first run of 6 in. (150 mm) wide Grip Polyester Soft reinforcement will be started and verify the surface is clean. For other details requiring reinforcement such as drains, penetrations or curbs, 6", 12", and 40" wide fabric reinforcement is available.
4. Position Grip Polyester Soft to roll out, apply coating at 3.0 gal./100 sq. ft.(1.22 l/m²) extending 4 in. (100 mm) on each side of lap to where the reinforcement is to be applied.
5. Immediately roll reinforcement into the coating and completely saturate surface, ensuring full encapsulation of fabric without pinholes, voids, openings or vertical fibers.
6. Allow to cure before applying field coating.

Modified Bitumen Flashings - Partial Reinforcement

1. Prior to coating application, the local Garland Representative needs to complete an inspection of all treated seams and details.
2. Apply a base coating of Gray LiquiTec FG coating in a uniform manner at an application rate of 2 gal./100 sq. ft. (0.82 l/m²). Use a 3/8" (10 mm) shed resistant nap roller to apply coating for uniform coverage. Allow to cure thoroughly, but no more than 72 hours.
3. Apply a top coating of LiquiTec FG coating (Gray or White) in a perpendicular direction over the base coat at 2.0 gal./100 sq. ft. (0.82 l/m²). Allow to cure thoroughly prior to field coating application.

Modified Bitumen Field Coating

1. Start with drains and flashings, including walls and curbs before proceeding to field installation
2. Apply a base coating of Gray LiquiTec Base coating in a uniform manner at minimum application rate of 2.0 gal. /100 sq. ft. (0.82 l/m²) over the entire roof surface, including all flashings. Use a ¼" notched squeegee to spread coating and roller apply for uniform minimum coverage. Allow to cure thoroughly, but no more than 72 hours.
3. Apply a top coating of LiquiTec Base or LiquiTec coating in a perpendicular direction over the base coat at 1.5 gal./100 sq. ft. (0.61 l/m²) for smooth modified bitumen or 2.0 gal./100 sq. ft. (0.82 l/m²) for granule modified bitumen.

Application Of Fully Reinforced Modified Bitumen Restoration System

1. Fully reinforced system does not require fabric reinforcement pre-treatment of modified bitumen side and end laps.
2. (Recommended): Apply a bead of Green Lock Sealant XL, Tuff-Stuff MS sealant or coating into all modified bitumen side and end laps to reduce the height of the overlap. This will help eliminate voids or tenting under fabric reinforcement.
3. LiquiTec FG should be used for all vertical coating applications at 3.0 gal./100 sq. ft. (1.22 l/m²). Start with drains and flashings, including walls and curbs before proceeding to field installation.
4. Apply a base coating of Gray LiquiTec Base Coat at 3.0 gal./100 sq. ft. (1.22 l/m²) over smooth modified bitumen or 4.0 gal./100 sq. ft. (1.64 l/m²) over granule modified bitumen. If there are surface cracks within the existing modified bitumen, increased coating coverage rate may be required beneath the fabric reinforcement to properly saturate it. Use a ¼" notched squeegee to spread coating and roller apply for uniform minimum coverage.
5. Immediately embed 40" wide Grip Polyester Soft reinforcement into wet coating by rolling over the fabric surface to fully saturate and encapsulate, ensuring there are no wrinkles, voids or vertical fibers.
6. Lap adjacent rolls of reinforcement 3 in. (75 mm) on side and end laps. Ensure the roller is fully saturated with coating when backrolling over the reinforcement surface to wet it out completely. Allow to cure thoroughly, but no more than 72 hours.
7. Apply a top coating of LiquiTec Base or LiquiTec coating over the reinforced base coat at 2.0 gal./100 sq. ft. (0.82 l/m²).

Application Of Non-Skid Surface For Walkways

1. Apply LiquiTec Base or LiquiTec coating at 1.0 gal./100 sq. ft. (0.41 l/m²) to clean and dry topcoat within 72 hours of its application.
2. Broadcast dry roofing granules or 20-40 mesh silica sand at 30 lbs./sq. into wet coating and immediately back-roll to set.

INSPECTION

Inspect entire roof area and touch-up deficient areas with additional LiquiTec as necessary to ensure complete and uniform coverage. Solvent wipe coating with acetone and let dry if it is exposed over 72 hours prior to overcoating. Special attention should be given to critical areas of roof, including roof penetrations, transitions, existing membrane seams, flashings and drains.

LIMITATIONS

These are general guidelines for application of the LiquiTec system. The material requirements may vary depending on the specific job requirements. If unusual conditions exist, contact your local Garland Representative. Garland's fluid-applied elastomeric roof systems must be applied to structurally sound substrates and properly prepared surfaces. All surfaces must be clean and dry before application of coatings. Garland's roof systems must not be applied over wet insulation or roofing materials. Failure of the substrate does not constitute failure of

the Garland coating or system. Garland's systems are designed for use on roofs with positive drainage.

1. Product application must not be done when rain or other conditions such as fog or heavy dew are possible within a 12-hour period.
2. **Ambient temperature must be at least six Fahrenheit degrees or three Celsius degrees above the dew point and rising.**
3. Surfaces must always be clean before application of product. Care must be taken to ensure that on-site manufacturing emissions or extended time intervals after original cleaning does not interfere with any stage of the coating applications. If either condition occurs, then cleaning may be required again.
4. Drying time is affected by numerous factors, including temperature, direct sunlight, relative humidity, air movement, thickness, etc. Coating skin time is between 3-4 hours and overcoat time is 6 hours at 77°F (25°C) and 50% relative humidity. Higher temperature and/or humidity will result in reduced skin and overcoat times; lower temperature and/or humidity may extend skin and overcoat times.
5. Thinning of coating materials is not permitted.
6. Adequate coating thickness is essential to performance. A controllable area should be measured and the specified material applied. The minimum coverage rate must be achieved throughout the entire fluid-applied roofing assembly and must be verified using a wet mil gauge during application. Multiple coats may be necessary on verticals to prevent sagging.
7. Solvent wipe coating with acetone and let dry if it is exposed over 72 hours prior to overcoating.
8. Deviations from these application guidelines and specific material requirements may seriously affect the fluid-applied roofing system performance and are strictly prohibited.
9. Applicator must comply with all applicable local, state and federal regulations if lead-based paint or other hazardous materials are encountered.
10. Roofing is hazardous work and coatings are very slippery when wet. Comply with fall protection rules and regulations.
11. Do not spray.

COLD WEATHER RESTRICTIONS

Do not attempt application if ice, snow, moisture or dew is present. Ambient temperature must be 50°F (10°C) and rising through the day. Restrict application when overnight temperature drops below 40°F (4.4°C) Cooler temperatures will negatively impact the properties of the system. Contact your Garland Sales Representative for proper cold weather applications.

HOT WEATHER RESTRICTIONS

Do not attempt application if moisture or dew is present. Ambient temperature must be less than 95°F (35°C). Contact Garland Sales Representative for proper hot weather application.

STORAGE

LiquiTec on the job site should be stored in a shaded ventilated area under a light-colored breathable canvas tarp. Do not store in direct sunlight. Storage temperature must range from 60-80°F (15°C to 26°C). Indoor ventilated storage is recommended when ambient temperature is below 60°F (15°C)or above 80°F (26°C).

The Garland Company, Inc.
Toll Free: 800-321-9336

Garland Canada Inc.
Toll Free: 800-387-5991