White-Knight® Plus/White-Stallion® Plus & White-Knight Plus WC

Partially or Fully Reinforced Modified Bitumen Restoration Application Guidelines

since 1895

DESCRIPTION

The White-Knight® Plus/White-Stallion® Plus system is a fluid-applied, moisture-triggered polyurethane, monolithic membrane system for weatherproofing properly prepared aged modified bitumen, metal and single-ply substrates. By combining multiple coats of White-Knight Plus/White-Stallion Plus, the system cures to a durable, weatherproof, and fully-adhered elastomeric membrane.

MATERIALS

The materials used in the White-Knight Plus/White-Stallion Plus modified bitumen restoration system may include:

1. Coating: White-Knight Plus, White-Stallion Plus, White-Knight Plus Base Coat, White-Stallion Plus Base Coat, White Knight Plus WC, White-Knight Plus WC Base Coat
2. Primer: Garla-Block Primer, Rust-Go® Primer (for priming metal components only)
3. Sealant: Green-Lock® Sealant XL or Tuff-Stuff MS
4. Fabric Reinforcement: Grip Polyester Soft™, UniBond ST™
5. Cleaning Solution: Garland D7 or Simple Green™ Oxy Solve

APPLICATION EQUIPMENT

1. 3/8" (10 mm) shed resistant nap roller
2. 1/4" (6.3 mm) notched squeegee
3. Wet mil gauge
4. (Optional) Spray Equipment (Graco GH 933 or equivalent). See White-Knight Plus/White-Stallion Plus Spray Application Guidelines for more details

INSTALLATION

Installation of the White-Knight Plus/White-Stallion Plus system is accomplished in the following steps: repair, preparation , priming (when required), 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 4 pounds per linear inch (pli) for White-Knight Plus/White-Stallion Plus to the applicable substrates. When calculating material requirements for a particular project, consideration must be given to overspray and applicator variance. Any of the White-Knight Plus/White-Stallion Plus coatings may be used interchangeably as base or top coating layers. Best practice is to use a different coating color for each subsequent layer of coating (e.g. gray & white).

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 MB 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 Garland D7 or 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. On new asphaltic repairs or membrane, apply Garla-Block to prevent staining of White-Knight Plus/White-Stallion Plus coating. Allow Garla-Block to completely dry.
5. If the roof surface becomes contaminated with dirt, dust or other contaminants at any time during the application of the White-Knight Plus/White-Stallion Plus system, then cleaning measures must be taken to restore the surface to a suitable condition.
6. Ensure roof is dry prior to product application.

Application Of Partially Reinforced White-Knight Plus/White-Stallion Plus Modified Bitumen Restoration System

A. 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 that 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 that 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 White-Knight Plus/White-Stallion Plus coating and allow to cure before applying field coating.

Method 2: Application of 3-course White-Knight Plus/White-Stallion Plus

1. Always begin with flashing laps and details.
2. (Optional): To reduce the height of MB laps prior to 3-course application, apply a bead of Green-Lock Sealant XL, Tuff-Stuff MS sealant or White-Knight Plus/White-Stallion Plus 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, 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. (100mm) 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.

B. Modified Bitumen Field Coating

1. Prior to field coating application, the local Garland Representative needs to complete an inspection of all treated seams and details.
2. Apply a base coating of White-Knight Plus/White-Stallion Plus 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 White-Knight Plus/White-Stallion Plus in a perpendicular direction over 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 White-Knight Plus/White-Stallion Plus System Modified Bitumen Restoration System

1. Fully reinforced system does not require fabric reinforcement pre-treatment of MB side and end laps.
2. (Optional): Apply a bead of Green Lock Sealant XL, Tuff-Stuff MS sealant or coating into all MB side and end laps to reduce the height of the overlap. This will help eliminate voids or tenting under fabric reinforcement.
3. Start with drains and flashings, including walls and curbs before proceeding to field installation. Apply a base coating of White-Knight Plus/White-Stallion Plus 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.
4. 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.
5. 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.
6. Apply a top coating of White-Knight Plus/White-Stallion Plus over the reinforced base coat at 2.0 gallons/100 sq. ft. (0.82 l/m²).

Application of Non-Skid Surface for Walkways

1. Apply White-Knight Plus/White-Stallion Plus at 1.0 gal./100 sq. ft. (0.41 l/m²) to clean and dry top coat 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 White-Knight Plus/White-Stallion Plus as necessary to ensure complete and uniform coverage. Solvent wipe coating with acetone or MEK 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 White-Knight Plus/White-Stallion Plus 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 roofing 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 roofing 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. White-Knight Plus/White-Stallion Plus coatings are moisture-triggered polyurethanes. Consequently, application of these materials must not be done when rain or other conditions such as fog or heavy dew are possible within a 24 hour period. Increased curing from too much moisture caused by rain or dew can cause the product to blister and pinhole.
2. Roof surface 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 6 hours and overcoat time at 10 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 can 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 or MEK 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.

COLD WEATHER RESTRICTIONS

Do not attempt application if ice, snow, moisture or dew is present. Restrict application when overnight temperature drops below 40°F (4.4°C). Ambient temperature must be 50°F (10°C) and rising through the day. 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

White-Knight Plus/White-Stallion Plus on the job site should be stored in a shaded ventilated area under a light-colored breathable reflective 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).

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