

# GREEN-LOCK® APPLICATION GUIDELINES



## DESCRIPTION

Garland's two-ply Green-Lock® systems incorporate both coal tar and asphalt SBS (Styrene-Butadiene-Styrene) base sheets, polyurethane or SBS modified cap sheets, modifiers and fire retardant compounds and scrim from fiberglass and polyester reinforcements. The Green-Lock system products are polyether based and 100% solids. They are moisture-cured polymers that, when reacted with moisture in the air, become a strong, tough, and resilient membrane. A system adhered with Green-Lock allows a quality roof to be installed in VOC sensitive areas like schools, hospitals and food production plants.

## MATERIALS

The materials used in the system may include Green-Lock Membrane Adhesive and Green-Lock Flashing Adhesive combined with approved ply sheets and cap sheets, which are listed below. '

### OptiMax™/StressPly®/VersiPly® Systems

Nailable Base Sheet (Optional): VersiPly 40 or StressBase® 80

Interply: FlexBase® 80, FlexBase Plus 80, FlexBase E 80, StressBase 80/120

Caps: OptiMax Membranes, StressPly Membranes or VersiPly 80 or VersiPly Mineral

Surfacings\*: Mineral, Coating or Flood & Gravel

### BiFlex® Systems

Nailable Base Sheet (Optional): VersiPly 40 or StressBase 80

Interply: FlexBase 80, FlexBase Plus 80, FlexBase E 80

Caps: BiFlex Smooth or Mineral

Surfacings\*: Mineral, Coating or Flood & Gravel

### Millennium® Systems

Nailable Base Sheet (Optional): VersiPly 40 or StressBase 80

Interply: FlexBase 80, FlexBase Plus 80, FlexBase E 80/120, StressBase 80/120, Millennium Base

Caps: Millennium Mineral or Millennium FR Mineral or Millennium

Surfacings\*: Mineral, Coating or Flood & Gravel

*\*All Garland Smooth Membranes Require Coating or Flood & Gravel*

## APPLICATION EQUIPMENT

Every professional roofer is familiar with the tools needed to complete a cold process roof installation, but just as a re-cap, here are some specific tools you'll need to install Garland's two-ply Green-Lock system:

- Suitable trowel for applying adhesive to flashing details if necessary
- Roofer's knife with hooked blade
- Long-handled (standing) roller with 1/8"-1/4" (3-6 mm) nap for applying primer 1/8" (3 mm) nap for smooth surfaces; 1/4" (6 mm) nap for more porous surfaces
- Long-handled (standing) squeegee that has a 12"-16" (304-406 mm) flat blade for applying cold adhesive
- Long-handled squeegee with 1/8" notch for colder weather
- Seam probing tool to check for small voids
- Heavy weighted roller to press membrane into adhesive
- Weights for edges or corners that potentially curl up when the sheets have not had long enough to relax

## APPLICATION CONSIDERATIONS FOR GREEN-LOCK

- Do not use solvent-based adhesives or sealants with a Green-Lock roofing system.
- Do not install in inappropriate weather - Green-Lock Membrane Adhesive is a moisture-cured product and rain or high humidity can accelerate the curing process
- Store the Green-Lock materials properly to protect it before use. Keep dry and above 70°F (21°C) for 24 hours prior to application
- Leave the lids on the product until you are ready to use that container. Open containers will skin and start to cure.
- Flip over all sealed buckets of Green-Lock Membrane Adhesive onto their lids to allow the product to mix before beginning the job. This will give you a more consistent product
- Do not apply Green-Lock Membrane Adhesive or Flashing Adhesive that has been improperly stored or exposed to moisture. IF THE MATERIAL ISN'T BONDING...STOP THE APPLICATION!
- Refer to the Green-Lock roof systems' specification for complete requirements
- Substrates must be free of dust, dirt, oil, debris and moisture
- Primer, if used, must be applied at the specified rate and must be allowed to thoroughly dry.
- Work with manageable lengths of base and cap for the particular job. Where appropriate, cut rolls into 1/3 or 1/2 roll lengths and allow material to relax prior to installation
- In cooler weather, a hand held hot air welding gun can be used to warm the side lap areas and improve adhesion (prior to application of the Green-Lock Membrane Adhesive)
- Use caution with the weighted roller at end lap areas... don't squeeze out too much adhesive

## INSTALLATION

### (a) Base Sheet Installation Over Nailable Substrate

1. Beginning at the low point of the roof, fasten one-ply of approved base sheet to the nailable substrate.
2. Start with an appropriate roll width (1/3 or 1/2 roll width) to accommodate off-setting of side laps of subsequent layers of base sheet. Install so that no side laps are against the flow of water.
3. Fasten base sheet with a fastening pattern provided through a wind uplift calculation. (check specification for exact fastening pattern)
4. Overlap base sheet side laps 4" (0.101 m) and end laps 8" (0.203 m). Offset end laps a minimum of 3' (0.914 m).
5. Additional plies of base sheet are to be installed as specified in the section below.

**Note: Do not leave fastened base exposed; cover in the same day with the base sheet and/or cap sheet.**

### (b) Installation Over Approved Roof Board

Approved Roof Boards: 1/2" (8 mm) min. G-P Gypsum DensDeck Prime®, DensDeck DuraGuard®, SecuRock®, high density asphalt coated wood fiberboard and polyisocyanurate.

1. Sweep or blow away any dust, dirt or sand particles that could interfere with adhesion.
2. Tape all insulation joints prior to applying Green-Lock Membrane Adhesive to keep material from seeping in between the boards. (duct tape can be used for taping insulation joints)
3. Relax base sheet prior to application (until sheet lies flat) and work with no more than 18' (5.5 m) lengths. This will allow the sheet to sit down into the adhesive.
4. Snap chalk lines for area of application to prevent material from skinning over in areas that material will not be applied immediately.
5. Pour a liberal amount of Green-Lock Membrane Adhesive onto the roof at a rate 2 to 2.5 gallons per square (.81 to 1.02 l/m<sup>2</sup>) for the base layer of Membrane Adhesive to the top insulation board.
6. Note: Work outwards to eliminate voids. Coverage based on a smooth surface, uneven surfaces or more porous roof boards will increase the coverage rate.
7. Start base sheet application at the low point of the roof with appropriate roll width to offset side laps 18" (457 mm) from side laps of base sheet. Install flush to roof edge if over base sheet, otherwise turn the base sheet over the fascia minimum 2" (50 mm) and nail 8" (203 mm) o.c. for perimeter flashing details you must extend the base sheet up to a minimum of 8" (203 mm). Design layout so that no side laps are against the flow of water.

**Note: On smaller roofs, cut rolls into manageable lengths.**

### (c) Cap Sheet Installation

1. Before installing the cap sheet, you must sweep or blow away any dust, dirt or debris off the base sheet, as this will interfere with adhesion.
2. Relax cap sheet prior to application no more than 18' (5.5 m) lengths. This will allow the sheet to sit down into the

adhesive.

3. Snap chalk lines for area of application to prevent material from skinning over in areas that material will not be applied immediately.
4. Pour a liberal amount of Green-Lock Membrane Adhesive onto the base sheet at a rate 2 to 2.5 gallons per square (.81 to 1.02 liters/meters square).
5. To install cap sheet, start at the low point of the roof with an appropriate roll width to offset side laps from the underlying membrane a minimum of 18" (457 mm). Work with manageable lengths for proper handling. Position cap sheet with salvage edge at high side of roof. Install in shingle fashion, with no laps against the flow of water.

**Note:** Once the membrane has had a chance to bond, check all laps and joints for full adhesion. If the membrane can be lifted at any area it is not properly adhered. A seam probing tool can be helpful to check for small voids at laps. If necessary, apply Green-Lock Flashing Adhesive to seal any small un-bonded areas if they exist.

#### **(d) Flashing Application**

**Note:** Application below is designed as a reference. Applicator needs to follow specific details contained in the approved project specifications.

1. At all vertical and other flashing details, install one of the approved base sheets followed by one of the approved smooth or mineral cap sheets over the already installed field plies.
2. Prime the horizontal surface with Garland approved (ASTM D 41) primer and allow to dry.
3. Over the existing installed field cap, apply a 3' (0.9 m) wide approved base sheet extending min. 10" (254 mm) onto the field of the roof. Apply a uniform 1/8-1/4" (3-6 mm) thick troweling of a Green-Lock Flashing Adhesive, onto the existing field plies.
4. Before installing the Garland approved cap sheet to the mineral surfaced field ply, apply Green-Lock Membrane Adhesive, wherever the membrane overlaps onto mineral surfacing. Proceed with the approved cap sheet installation. Apply a 3' (0.9 m) wide smooth or mineral extending min. 10" (254 mm) onto the field of the roof, being sure to cover the base ply.
6. On all vertical laps, apply a minimum three course application of Green-Lock Flashing Adhesive at a rate of 1/8-1/4" (3-6 mm) thick with GarMesh® reinforcement.

**Note:** Once the membrane has had a chance to bond, check all laps and joints for full adhesion. If the membrane can be lifted at any area, it is not properly adhered. A seam probing tool can be helpful to check for small voids at laps. If necessary, apply Green-Lock Flashing Adhesive to seal any un-bonded areas if they exist.

#### **(e) Flood Coat**

1. Before installing the flood coat, you must sweep or blow away any dust, dirt or debris off the cap sheet, as this will interfere with adhesion.
2. Pour a liberal amount of Green-Lock Membrane Adhesive onto the cap sheet at a rate 4 to 5 gallons per square (1.63 - 2.0 l/m<sup>2</sup>).
3. Broadcast 400 lbs. (181 kg) per 100 ft.<sup>2</sup> (9.29 m<sup>2</sup>) of gravel immediately into the Green-Lock Membrane Adhesive.
4. Do not apply Green-Lock Membrane Adhesive too far ahead without installing gravel into the adhesive, it will skin over in 20 minutes, thus not allowing gravel to adhere properly.

### **WEATHER CONDITIONS**

Do not attempt application if ice, snow, moisture or dew is present. Bonding substrates must be clean, dry and free of dust or other inhibitors of proper adhesion. Ambient temperature must be 50°F (10°C) or rising through the day. Cooler temperatures will negatively impact the properties of the system. Contact your Garland Sales Representative for proper cold weather applications.

### **STORAGE**

Store pails and roll goods in their original packaging, indoors on pallets protected from the elements. Green-Lock Adhesives needs to be kept at 70°F (21°C) for at least 24 hours prior to application. If stored on the roof, all product needs to be under a tarp at all times. Rolls and containers that are improperly stored or have been warehoused for prolonged periods of time could potentially be damaged or go beyond their shelf life.