# HOT-APPLIED TWO-PLY APPLICATION GUIDELINES

## DESCRIPTION
Garland's 2-ply hot systems incorporate an SBS (Styrene-Butadiene-Styrene) base sheet, polyurethane or SBS modified cap sheets, modifiers and fire retardant compounds and scrims from fiberglass and polyester reinforcements.

## MATERIALS
The materials used in the system may include HPR® All-Temp, Garlastic® KM/KM Plus or approved hot asphalt and Flashing Bond®, Garla-Flex®, Silver-Flash® or approved mastic 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

**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 recap, here are some specific tools you'll need to install Garland's two-ply hot-applied 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
- Fiberglass mop head
- Fire extinguisher
- Seam probing tool to check for small voids

## APPLICATION CONSIDERATIONS
- Do not install in inappropriate weather when rain or snow is in the forecast of 30% or greater. If temperatures are lower than 50˚ (10˚C), refer to the cold weather guidelines applied by the NRCA or The Garland Company
- Store all roofing materials in a protected area prior to application
- Do not apply roofing materials that have been improperly stored or exposed to moisture. IF THE MATERIAL ISN'T BONDING…STOP THE APPLICATION!
- Refer to the 2-ply hot roof system's 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

## 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. Perlite, G-P Gypsum DensDeck Prime®, DensDeck DuraGuard®, SecuRock® or high density asphalt coated wood fiberboard and 1 1/2" (24 mm) min. polyisocyanurate. Sweep or blow away any dust, dirt or sand particles that could interfere with adhesion.

1. Sweep or blow away any dust, dirt or sand particles that could interfere with adhesion.
2. 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.
3. Apply a liberal amount of approved hot asphalt onto the roof at a rate of 25 lbs. per square (11.34 kg/$m^2$) for the base layer to the top insulation board.
4. Work outwards to eliminate voids. Coverage based on a smooth surface, uneven surfaces or more porous roof boards will increase the coverage rate.
5. 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 approved hot asphalt.
3. Apply a liberal amount of approved hot asphalt onto the existing base sheet at a rate of 25 lbs. per square 11.34 kg/$m^2$) for the cap sheet.
4. Note: Work outwards to eliminate voids. Coverage based on a smooth surface, uneven surfaces or more porous roof boards will increase the coverage rate.
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 Flashing Bond, Garla-Flex or approved mastic onto the existing field plies.
4. Before installing the Garland approved cap sheet to the mineral surfaced field ply, apply Flashing Bond, Garla-Flex or approved mastic 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.

5. 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 Flashing Bond, Garla-Flex or approved mastic to seal any un-bonded areas if they exist.
6. On all vertical laps, apply a minimum three course application of Silver-Flash, Flashing

## 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. Cooler temperatures will negatively impact the properties of the system. Contact your Garland Sales Representative for proper cold weather applications.

## STORAGE

Store pails, kegs and roll goods in their original packaging, indoors on pallets protected from the elements. 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.