HPR® Torch Base Sheet

PRODUCT DESCRIPTION

HPR Torch Base Sheet is a Styrene-Butadiene-Styrene (SBS) membrane specially formulated to accept the high heat from a torch.

HPR Torch Base Sheet has a burnable polypropylene backer that melts when the proper torching temperature has been reached. The HPR Torch Base Sheet eliminates the use of a kettle and also allows the torch applied system to be installed with a one ply underlayment.

PRODUCT ADVANTAGES

High Tech Base Sheet - The HPR Torch Base Sheet has a high percentage of SBS rubber that when fused together with the torch applied membrane gives the system superior puncture and abrasion resistance. It also has high tensile and elongation characteristics.

Eliminates the Use of the 2 Ply Underlayment - Because the HPR Torch Base Sheet is 110 mils (2,794 microns) thick (as thick as 2 plies of Type IV glass in hot asphalt), one ply will be sufficient as the underlayment for torch applied membrane.

Superior Strength - The HPR Torch Base membrane is reinforced with a dual fiberglass scrim. The superior strength provided by this reinforcement resists the movement created by today's modern buildings. In addition, HPR Torch Base Sheet provides tensile strength in excess of 200 pounds per inch in the machine direction. This translates to long-term resistance to splits and tears in the completed HPR torch applied roof system.

Advanced Rubber Technology - The modifier utilized in HPR Torch Base Sheet is SBS. When the SBS rubber is properly dispersed throughout the high penetration asphalt, the rubber provides increased thermal shock resistance, UV protection, heat resistance, elongation, and low temperature flexibility. To ensure proper dispersion, a special high shear mixer is used in manufacturing.

USES

HPR Torch Base Sheet is used as the underlayment ply for any of Garland's torch-applied membranes. It is fully compatible with both APP or SBS modified membranes. However, DO NOT USE the HPR Torch Base Sheet with hot asphalt or cold adhesives.

APPLICATION

The HPR Torch Base Sheet must be used for heat fusing or mechanical fastening applications only. Heat the HPR Torch Base Sheet until the burnable backer is melted. As this occurs, the SBS coating becomes tacky and is ready to roll in place.

HPR Torch Base Sheet

Technical Data	HPR Torch Base Sheet
***Tensile Strength**	MD 210 lbf./in. (36.75 kN/m) XD 210 lbf./in. (36.75 kN/m)
***Tear Strength**	MD 300 lbf. (1334 N) XD 300 lbf. (1334 N)
***Elongation**	MD 6.0% XD 6.0%
Low Temperature Flexibility	-30°F (-34°C)

Eco-Facts	HPR Torch Base Sheet
Recycled Content	
Pre-Consumer	N/A
Post-Consumer	6%

Finished membrane meets and/or exceeds ASTM D 6163, TYPE III

* Test Method ASTM D 5147 is tested at 2 in/min @ 73.4 ± 3.6°F (50 mm/min @ 23 ± 2°C)

Roll Dimensions	HPR Torch Base Sheet
Width	3 ft. 3 in. (1 m)
Length	34 ft. 8 in. (10.57 m)
Weight	76 lbs. (34.5 kg)
Nominal Thickness	110 mil (2,794 microns)
Net Coverage	100 sq. ft. (9.29 m^2)
Packaging	25 rolls/pallet

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.

Installation of this product with hot asphalt may result in exposure to hazardous chemicals. For specific details refer DHHS (NIOSH) Publication No. 2003-107, entitled "Reducing Roofers' Exposure to Asphalt Fumes", as well as OSHA standard 1910.134 for further exposure precautions.

VALIDATED
√ HPR® TORCH BASE SHEET CONTAINS AN AVERAGE OF 6% POST-CONSUMER RECYCLED CONTENT

since 1895

For more information, visit us at: www.garlandco.com

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**Test verified by independent laboratories. Actual roof performance specifications will vary depending on test speed and temperature. Data reflects samples randomly collected. ± 10% variation may be experienced. The above data supersedes all previously published information. Consult your local Garland Representative or the home office for more information.*

since 1895

StressPly® IV Membranes

StressPly IV • StressPly IV Mineral • StressPly IV UV Mineral

PRODUCT DESCRIPTION

StressPly IV membranes are a high strength, fiberglass reinforced, rubber modified roofing membrane designed to be used in torching applications. The 195 mil membrane offers not only high strength, but also a high percentage of quality blended Styrene-Butadiene-Styrene (SBS) rubber compound. StressPly IV membranes incorporate a burn-off backer to indicate when proper heat is obtained during application.

PRODUCT ADVANTAGES

Unmatched Reflectivity - The StressPly IV UV Mineral membrane incorporates the unique Sunburst™ mineral which provides long-term protection and added energy savings. The superior reflectivity of this mineral protects the StressPly IV UV Mineral membrane from UV damage and decreases under roof temperatures. As a result, the workload on the building's air conditioning system is reduced and proper interior temperatures can be maintained at a lower cost. Sunburst mineral membranes exceed the minimum requirement for LEED SS 7.2 Heat Island Effect (Roof) with an SRI of 90 as tested by the Cool Roof Rating Council (CRRC).

Rubber Technology - StressPly IV membranes are formulated with a high quality SBS rubber polymer offering unmatched low temperature flexibility, weathering and elastomeric properties. Adequate mixing of the polymer ensures proper phase inversion which optimizes the rubber's performance.

Security in Multi-Ply Applications - StressPly IV membranes are the top component of a multi-ply system. They combine the inherent advantages and proven performance of multi-ply protection with the strength, flexibility and elongation of elastomeric systems. This unique combination minimizes dependence on perfect workmanship, contact adhesive seaming, etc.

USES

StressPly IV membranes can be used in conjunction with other HPR products and with conventional glass base sheets or fiberglass felt underlayment. In addition, StressPly IV membranes can be used as the top ply in a two ply flashing system. They can also be used to repair splits, cracks or other deteriorated areas of existing built-up roofs.

APPLICATION

StressPly IV membranes are the torchable top layer of a modified roof system. Two plies of ASTM D 2178, Type IV or VI fiberglass felt are solidly bonded to the approved substrate. The StressPly IV membrane is then solidly adhered to these base layers by torching.

StressPly IV membranes can also be applied in a two ply torch-applied modified system. Garland's HPR Torch Base Sheet is applied to the approved substrate and the StressPly IV membrane is solidly adhered to the torch base sheet by torch.

StressPly IV Membranes

Technical Data	StressPly IV	StressPly IV Mineral	StressPly IV UV Mineral
Tensile Strength	*MD 210 lbf./in. (36.75 kN/m) *XD 210 lbf./in. (36.75 kN/m) **MD 250 lbf./in. (44 kN/m) **XD 250 lbf./in. (44 kN/m)	*MD 210 lbf./in. (36.75 kN/m) *XD 210 lbf./in. (36.75 kN/m) **MD 250 lbf./in. (44 kN/m) **XD 250 lbf./in. (44 kN/m)	*MD 210 lbf./in. (36.75 kN/m) *XD 210 lbf./in. (36.75 kN/m) **MD 250 lbf./in. (44 kN/m) **XD 250 lbf./in. (44 kN/m)
***Tear Strength**	MD 250 lbf. (1112 N) XD 250 lbf. (1112 N)	MD 250 lbf. (1112 N) XD 250 lbf. (1112 N)	MD 250 lbf. (1112 N) XD 250 lbf. (1112 N)
***Elongation**	MD 6.0% XD 6.0%	MD 6.0% XD 6.0%	MD 6.0% XD 6.0%
***Low Temperature Flex**	-40°F (-40°C)	-40°F (-40°C)	-40°F (-40°C)

Finished membrane meets and/or exceeds ASTM D 6163, TYPE III Test Method ASTM D 5147 is tested at:
**0.08 in/min @ 0 ± 3.6°F (2.0 mm/min @ -18 ± -3°C) *2 in/min @ 73.4 ± 3.6°F (50 mm/min @ 23 ± 3°C)

Roll Dimensions	StressPly IV	StressPly IV Mineral	StressPly IV UV Mineral
Width	3 ft. 3 in. (1 m)	3 ft. 3 in. (1 m)	3 ft. 3 in. (1 m)
Length	26 ft. 2 in. (7.98 m)	26 ft. 2 in. (7.98 m)	26 ft. 2 in. (7.98 m)
Weight	110 lbs. (49.9 kg)	125 lbs. (56.7 kg)	125 lbs. (56.7 kg)
Nominal Thickness	180 mils (4,572 microns)	195 mils (4,953 microns)	195 mils (4,953 microns)
Net Coverage	75 sq. ft. (6.97 m^2)	75 sq. ft. 6.97 m^2)	75 sq. ft. (6.97 m^2)
Packaging	20 rolls/pallet	20 rolls/pallet	20 rolls/pallet

Eco-Facts	StressPly IV	StressPly IV Mineral	StressPly IV UV Mineral
Recycled Content Pre-Consumer	15%	N/A	N/A
Post-Consumer	0.5%	N/A	N/A
Reflectance	N/A	0.263	0.73
Emittance	N/A	0.91	0.89
SRI	N/A	28	90

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.

Installation of this product with hot asphalt may result in exposure to hazardous chemicals. For specific details refer DHHS (NIOSH) Publication No. 2003-107, entitled "Reducing Roofers' Exposure to Asphalt Fumes", as well as OSHA standard 1910.134 for further exposure precautions.

UL VALIDATED
✓ STRESSPLY® IV CONTAINS AN AVERAGE OF 15% PRE-CONSUMER AND 0.5% POST-CONSUMER RECYCLED CONTENT

GARLAND since 1895

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StressBase®

StressBase 80 • StressBase 120

since 1895

OVERVIEW & FEATURES

StressBase sheets are high-strength, puncture and fatigue resistant, rubber modified roofing membranes that consist of fiberglass reinforcement sandwiched by Styrene-Butadiene-Styrene (SBS) rubber in a high penetration index asphalt mixture.

StressBase sheets can be used as a nailable base sheet over approved substrates, as a base flashing for hot- and cold-applied roof systems or as an interply in Garland's hot or cold applied systems. StressBase is typically used in two (2) or three (3) ply modified systems and also can be used in three (3) or four (4) ply BUR's.

Advanced Rubber Technology - The modifier utilized inStressBase sheets is SBS (Styrene-Butadiene-Styrene). When the SBS rubber is properly dispersed throughout the high penetration asphalt, the rubber provides increased thermal shock resistance, UV protection, heat resistance, elongation, and low temperature flexibility. To ensure proper dispersion, a special high shear mixer is used in manufacturing.

High Strength - The StressBase membranes are reinforced with fiberglass. The high-strength provided by the fiberglass scrim resists the movement created by today's modern buildings. In addition, the fiberglass scrim in StressBase membranes provide adequate tensile strength in the machine and cross machine direction. This translates to long-term resistance to splits and tears in the modified roof system.

Security in Multi-Ply Construction - StressBase sheets are the base component of a multi-ply roof system. They combine the inherent advantages and proven performance of multi-ply protection with the strength, flexibility and elongation of elastomeric systems. This unique combination minimizes dependence on perfect workmanship, contact adhesive seaming, etc.

APPLICATION

Garland's StressBase sheets can be used in conjunction with Weatherking® and Green-Lock® to make up a cold-applied system. StressBase sheets can also be used with hot asphalt or Garlastic® as a multi-ply BUR, as the underlayment for Garland's HPR® roof systems or as a base flashing ply for hot-and-cold applied roof systems. Specifications for nailing to various decks are also available.

NOTE: All rolls must be cut in 18 ft. (5.5 m) lengths and allowed to relax prior to application.

StressBase®

Technical Data	StressBase 80	StressBase 120
Tensile Strength	MD 100 lbf./in. (17.5 kN/m) XD 100 lbf./in. (17.5 kN/m)	MD 100 lbf./in. (17.5 kN/m) XD 100 lbf./in. (17.5 kN/m)
Tear Strength	MD 110 lbf. (489 N) XD 100 lbf. (444 N)	MD 100 lbf. (444 N) XD 85 lbf. (378 N)
Elongation	MD 4% XD 4%	MD 4% XD 4%
Low Temperature Flex	passes -40°F (-40°C)	passes -40°F (-40°C)

Finished membrane meets and/or exceeds the performance criteria of ASTM D 6163, TYPE I.
Test Method ASTM D 5147 is tested at:
0.08 in/min @ 0 ± 3.6°F
(2.0 mm/min @ -18 ± -3°C)

Roll Dimensions	StressBase 80	StressBase 120
Width	3 ft. 3 in. (1m)	3 ft. 3 in. (1m)
Length	52 ft. (15.85 m)	34 ft. 8 in. (10.60 m)
Weight	100 lbs. (45.36 kg)	85 lbs. (38.55 kg)
Nominal Thickness	80 mils (2,032 microns)	120 mils (3,048 microns)
Net Coverage	150 sq. ft. (13.93 m^2)	100 sq. ft. (9.29 m^2)
Packaging	24 rolls/pallet	24 rolls/pallet

Eco-Facts	StressBase 80	StressBase 120
Recycled Content		
Pre-Consumer	27%	24%
Post-Consumer	–	–

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.

Installation of this product with hot oxidized asphalt may result in exposure to hazardous chemicals. Special care and attention for proper product installation must be followed in all cases. For specific details refer to the NIOSH safe handling practices in publication No. 2003-107, as well as OSHA standard 1910.134 for further exposure precautions.

Garland Greenhouse

VALIDATED
✓ STRESSBASE® 80 CONTAINS AN AVERAGE OF 27% PRE-CONSUMER RECYCLED CONTENT

VALIDATED
✓ STRESSBASE® 120 CONTAINS AN AVERAGE OF 24% PRE-CONSUMER RECYCLED CONTENT

MIAMI-DADE COUNTY APPROVED

FM APPROVED

This product meets the requirements of CSA 123.23.

For more information, visit us at: www.garlandco.com

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Tests verified by independent laboratories. Actual roof performance specifications will vary depending on test speed and temperature. Data reflects samples randomly collected. ± 10% variation may be experienced. The above data supersedes all previously published information. Consult your local Garland Representative or the home office for more information.

SB 80/120 0622

StressPly® Plus Membranes

StressPly Plus • StressPly Plus FR Mineral

since 1895

OVERVIEW & FEATURES

StressPly Plus membranes feature a high strength, mineral surfaced, UV resistant, rubber modified roof membrane designed for use as the waterproofing and reinforcement layer of a modified built-up roofing system. The sheets consist of a fiberglass/polyester reinforcement sandwiched by a unique Styrene-Butadiene-Styrene (SBS) in a high penetration index asphalt mixture containing post-consumer recycled rubber from scrap tires.

StressPly Plus membranes are designed for use as the top component in a roofing system where fire retardancy is required. It can also be used in conjunction with Garland's HPR® products as well as with conventional glass base sheets or fiberglass roofing felts. In addition, StressPly Plus membranes can be used as the top ply in a two-ply flashing system. It can also be used to repair splits, cracks, and other deteriorated areas in existing asphalt based roofing systems. Specifications are available for either hot or cold applied systems.

Environmentally Friendly - StressPly Plus membranes utilize post-consumer scrap from waste tires. With absolutely no sacrifice in quality, StressPly Plus membranes maintain Garland's reputation as a manufacturer of high performance roofing systems while benefitting the environment.

Superior Strength - StressPly Plus membranes are reinforced with a fiberglass/polyester scrim that provides tensile strength in excess of 300 pounds per inch in the machine and cross machine direction. The superior strength provided by the fiberglass/polyester scrim resists the movement created by today's modern buildings. This translates to long-term resistance to splits and tears in the roof system.

Factory Formulation Reduces Labor Expense - StressPly Plus FR Mineral is coated with reflective mineral granules. Consequently, there's no need to flood coat and gravel or aluminize the membrane's surface. Roof projects can be completed on a more timely basis. The end result is substantial savings in labor expense.

Superior Fire Resistance - StressPly Plus FR Mineral contains a fire retardant that is added to the compound during the manufacturing process. As a result, it will maintain its fire rating for the life of the membrane. StressPly Plus FR Mineral has a Class A fire rating over a combustible roof deck.

APPLICATION

Hot-Applied

StressPly Plus membranes can be used with ASTM D 312, Type III or IV asphalt, Garland's HPR All-Temp Asphalt or modified asphalt. One or two plies of ASTM D 2178, Type IV or VI fiberglass felt are solidly bonded to the approved substrate. The StressPly Plus membrane is then solidly adhered to these base layers with mopping asphalt.

Cold-Applied

StressPly Plus membranes can also be applied in Garland's cold applied Weatherking® or Green-Lock® membrane adhesive. One or two layers of heavy duty Garland approved ASTM D 4601, Type II base sheets are applied in Weatherking or Green-Lock membrane adhesive to the approved substrate. The StressPly Plus membrane is then adhered to these base layers with Weatherking or Green-Lock membrane adhesive.

StressPly® Plus Membranes

Technical Data	StressPly Plus	StressPly Plus FR Mineral
Tensile Strength	*MD 310 lbf./in. (54.25 kN/m) *XD 310 lbf./in. (54.25 kN/m) **MD 325 lbf./in. (57 kN/m) **XD 325 lbf./in. (57 kN/m)	*MD 310 lbf./in. (54.25 kN/m) *XD 310 lbf./in. (54.25 kN/m) **MD 325 lbf./in. (57 kN/m) **XD 325 lbf./in. (57 kN/m)
***Tear Strength**	MD 500 lbf. (2224 N) XD 500 lbf. (2224 N)	MD 500 lbf. (2224 N) XD 500 lbf. (2224 N)
***Elongation**	MD 8.0% XD 8.0%	MD 8.0% XD 8.0%
***Low Temperature Flex**	-30° F (-34° C)	-30° F (-34° C)

Finished membrane meets and/or exceeds ASTM D 6162, TYPE III.
Test Method ASTM D 5147 is tested at:
* 2 in./min @ 73.4 ± 3.6°F (50 mm/min @ 23 ± 2°C)
** 0.08 in/min @ 0 ± 3.6°F (2.0 mm/min @ -18 ± -3°C)

Roll Dimensions	StressPly Plus	StressPly Plus FR Mineral
Width	3 ft. 3 in. (1m)	3 ft. 3 in. (1m)
Length	34 ft. 8 in. (10.57 m)	26 ft. 2 in. (7.98 m)
Weight	85 lbs. (39 kg)	90 lbs.(40.8 kg)
Nominal Thickness	105 mils (2,667 microns)	155 mils (3,937 microns)
Net Coverage	100 sq. ft. (9.29 m^2)	75 sq. ft. (6.96 m^2)
Packaging	25 rolls/pallet	25 rolls/pallet

Eco-Facts	StressPly Plus	StressPly Plus FR Mineral
Recycled Content		
Pre-Consumer	22%	11%
Post-Consumer	0.4%	0.3%
Reflectance	–	***0.72
Emittance	–	***0.90
SRI	–	***89

***With upgrade option Sunburst Minerals (0700-0029a) CRRC results.

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.

Installation of this product with hot oxidized asphalt may result in exposure to hazardous chemicals. Special care and attention for proper product installation must be followed in all cases. For specific details refer to the NIOSH safe handling practices in publication No. 2003-107, as well as OSHA standard 1910.134 for further exposure precautions.

Garland Greenhouse

VALIDATED ✓ STRESSPLY® PLUS CONTAINS AN AVERAGE OF 22% PRE-CONSUMER AND 0.4% POST-CONSUMER RECYCLED CONTENT

VALIDATED ✓ STRESSPLY® PLUS FR MINERAL CONTAINS AN AVERAGE OF 11% PRE-CONSUMER AND 0.3% POST-CONSUMER RECYCLED CONTENT

This product meets the requirements of CSA 123.23.

For more information, visit us at: www.garlandco.com

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SP P/SP P FR Min 0518

since 1895

Black-Knight®/Black-Stallion® Cold

PRODUCT DESCRIPTION

Black-Knight/Black-Stallion Cold is a specially formulated polymer modified, cold-process roofing bitumen. It is a unique blend of refined tars, solvents, rubberized polymers, fibers and fillers that offer improved performance and superior sag resistance. Black-Knight/Black-Stallion Cold is modified with advanced polymers, enabling improved flexibility and impact resistance over conventional coal tar. Black-Knight/Black-Stallion Cold is designed to be used as an interply adhesive for Garland's cold-applied Millennium® roof systems; as a flood coat over new and existing hot asphalt and coal tar built up roofs and modified bitumen roofs; or as a premium restoration material for previously graveled roofs.

PRODUCT ADVANTAGES

Coal Tar Based - Coal tar pitch provides natural resistance to moisture, chemicals, ultraviolet radiation, and aging. Black-Knight/Black-Stallion Cold's polymer-enhanced coal tar combines the water-resistance of coal tar with the strength and flexibility of advanced polymers for unmatched durability.

Cost Effective - Black-Knight/Black-Stallion Cold offers superior long-term performance and low maintenance costs. This significantly reduces the life cycle costs associated with the roofing system. The high quality and performance of Black-Knight/Black-Stallion Cold will save building owners money year after year.

Cold Process Formulation - Black-Knight/Black-Stallion Cold eliminates many of the emissions of conventional coal tar due to its cold-applied nature.

Resistance to Weathering - A tight molecular structure allows Black-Knight/Black-Stallion Cold to maintain a natural resistance to water and air. Also, many common chemicals that cause oxidation to the roof's surface are blocked by Black-Knight/Black-Stallion Cold's unique capabilities.

Self-Healing - Black-Knight/Black-Stallion Cold has cold-flow properties that allow it to slowly heal hairline cracks and alligatoring with elevated rooftop temperatures. Over the years, this process will continue, thus providing the owner with a long-term roofing solution by extending the life of the roofing system.

APPLICATION

When used in conjunction with Millennium Base and a Millennium modified membrane, Black-Knight/Black-Stallion Cold should be applied at 1.5-2.0 gal./100 sq. ft. (0.61-0.82 l/). For specific information on a cold applied Millennium roof system, please contact a local Garland representative.

Application for a flood coat on a new roof should be 4-5 gal./100 sq. ft. (1.63-2.04 l/m²); application on an existing roof where gravel has been removed should be 6-8 gal./100 sq. ft. (2.45 - 3.26 l/m²). Four hundred pounds (400 lbs.) of gravel per 100 sq. ft. should be applied following the application of Black-Knight/Black-Stallion Cold.

As a cold applied product, it can be applied by brush, spray, or squeegee as any other conventional, high-performance roof coating.

Black-Knight/Black-Stallion Cold should not be applied on roofs with a slope exceeding 1-1/2:12. Cold applied Millennium roof systems should not be installed above a 1:12 slope. Backnailing is required for slopes over 1/2:12. Please contact a local Garland representative for specifics.

Black-Knight/Black-Stallion Cold

Technical Data	Black-Knight/ Black-Stallion Cold
Viscosity (seconds) Stormer Viscometer, 600 g	125-175 sec.
Flash Point (ASTM D 93)	105°F (40°C)
Non-Volatile (ASTM D 4479)	Typical 77%
Weight per gallon Typical	9.4 lbs./gal (1.126 g/cm^3)
Drying Time to touch @ 70°F (21.1°C)	4-6 Hours
Shelf Life	1 Year
Wet Film Thickness	
Interply @ 2 gal. (7.6 l)	32 mils (812.8 mircons)
New Flood Coat @ 4-5 gal. (15-19 l)	64-80 mils (1,625.6-2,032 microns)
Restoration @ 6-8 gal. (22.7-30.3 l)	96-128 mils (2,438.4-3,251.2 microns)
Coverage	
Interply	1.5-2.0 gal/100 sq. ft. (.61-.82 l/m^2)
New Flood Coat	4-5 gal/100 sq. ft. (1.63-2.04 l/m^2)
Restoration	6-8 gal/100 sq. ft. (2.45-3.26 l/m^2)
Packaging	5 gallon (18.9 l) pail 55 gallon (208.2 l) drum

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.

Eco-Facts	Black-Knight/Black-Stallion Cold
VOC	**250 g/l**
Recycled Content	**70%**

PRECAUTIONS

- Do not use Black-Knight/Black-Stallion Cold over rubber or plastic substrates
- Make sure to have adequate ventilation
- Keep away from open flame
- In depth safety information can be obtained from Garland's Contractor Safety Guide, MSDS Sheet or the NRCA's Safety Awareness video
- Do not thin this product
- Do not use where product may come in contact with potable water
- Keep material warm prior to application when at or below 50°F (10°C). Store in a heated warehouse between 70°F-80°F at least 24 hours.
- As with all cold process materials, full cure is dependent on application rate, time and temperatures. Lingering odors are expected until product achieves full cure.
- Exterior use only
- Do not install as a flood coat over the StressPly SA system.

Please refer to the product information, Material Safety Data Sheet, and labeling for the potential risks and benefits. Exposure to this product may cause skin and respiratory tract irritation; prolonged skin exposure may result in skin cancer; inhalation of vapors may cause central nervous system effects and long term exposure has been associated with kidney, bladder, scrotum, and lung cancer.

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since 1895

Insul-Lock® HR

PRODUCT DESCRIPTION

Insul-Lock HR is a highly elastomeric, one step, VOC compliant, high rise roof insulation adhesive that contains no solvents and sets in minutes. Insul-Lock HR is designed to give you the benefits of a two component insulation adhesive without the errors of improper mixing. Insul-Lock HR was designed for bonding approved roof insulations to a building's structural roof deck, base sheets, other insulation boards, smooth and mineral roof systems or properly prepared coal tar and asphalt graveled built-up roof surfaces.

PRODUCT ADVANTAGES

Ease of Installation - Insul-Lock HR is an easy-to-apply, self contained, two-component insulation adhesive that does not require manual or mechanical mixing. Mixing is done through a static mixing tip. Simply apply Insul-Lock HR in 1/4 in. – 1/2 in. (0.64 cm – 1.27cm) wide beads 12 in. o.c. per 4 ft. X 4 ft. insulation board. Simply place, do not slide, the boards into the adhesive.

High-Rise - Insul-Lock HR provides an alternate attachment method for the application over gravel roofs. Insul-Lock HR will rise to adhere insulation board to properly prepared gravel roof systems, eliminating the labor cost involved in fastening to all types of decks.

Low Odor - The low odor nature of this product makes it a perfect fit for sensitive environments, such as schools and hospitals and a must for all environmentally conscious facilities. Insul-Lock HR is a VOC compliant solution that will not disrupt building occupants.

No Deck Penetration/No Fastener Backout - Leaving the deck completely intact lessens the possibility of structural damage and moisture entry while preventing the disruption of interior operations. Eliminating fasteners not only prolongs the life of the waterproofing system, but it also eliminates the potential for thermal bridging and a future cause of leaks.

Versatile - Insul-Lock HR is compatible with a variety of insulation types that are listed on the back. It provides a fast set in a variety of temperatures.

APPLICATION

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

Prior to the application of Insul-Lock HR over gravel or mineral re-cover applications, be sure to remove all gravel or debris prior to applying Insul-Lock HR Universal Primer at a rate of 150 – 250 sq. ft. (13.94 – 23.22 m^2) per gallon.

Insul-Lock HR in new construction or mineral re-cover applications is applied at a rate of 600 sq. ft. (55.74 m^2) per case. Over irregular surfaces, the coverage rate will vary and may be reduced to 300 – 400 sq. ft. (27.87 – 37.16 m^2) per case. Perimeters and corners require more adhesive, see application guide.

Snap off the molded cap on the top of the adhesive cartridge and screw on the mixing tip. Attach a mixing tip to the threaded mixing head. Place the cartridge into the appropriate Insul-Lock HR applicator. Apply Insul-Lock HR adhesive directly to the substrate, using a ribbon pattern. Space 1/4 in. – 1/2 in. (0.64 cm – 1.27cm) wide beads, 12 in. o.c. (30.5 cm), to achieve proper coverage rates for insulation attachment. As Insul-Lock HR adhesive is applied, immediately place insulation board into wet adhesive. Do not allow the adhesive to skin over. Eliminate uneven surfaces to ensure positive contact between the insulation board and substrate. Unused material can be applied at a later date by simply plugging the cartridges (with provided half moon plugs) and using a new Insul-Lock HR cartridge tip.

STORAGE

Insul-Lock HR Insulation Adhesive has a shelf life of 12 months. Insul-Lock HR should be stored at room temperature 65°F to 85°F (18°C to 29°C) for at least 24 hours prior to using the product.

LIMITATIONS

Do not apply to a wet surface.

Not recommended for use with insulation boards larger than 4 ft. x 4 ft. (1.22 m x 1.22 m).

Do not use warped or curled insulation boards. All insulation boards must lay flat upon the roof surface.

Do not apply Insul-Lock HR Adhesive over a smooth or sanded APP or single-ply roof surface.

Insul-Lock HR

Technical Data	Insul-Lock HR
Tensile Strength (ASTM D 412)	250 psi
Density (ASTM D 1875)	8.5 lbs./gal.
Viscosity (ASTM D 2556)	22,000 – 60,000 cP
Peel Strength (ASTM D 903)	17 lb./in.
Flexibility (ASTM D 816)	Pass @ -70°F (-56.7°C)
Shelf Life	12 months
Packaging	4 – 50.7oz.(1.5 l) Cartridges/ Case 600 sq. ft. (55.74 m^2) case

COVERAGE

Existing Roof Surface	Board Size	Bead Size
Smooth 600 sq. ft. (55.74 m^2)/Case	4x4	1/4 in. – 1/2 in. (0.64 – 1.27 cm) beads 12 in. (30.5 cm) o.c.
Irregular 300–400 sq. ft./case (27.87–37.16 m^2) Coverage rates may vary	4x4	1/4 in. – 1/2 in. (0.64 – 1.27 cm) beads 12 in. (30.5 cm) o.c.

For specific recommendations and coverage rates, please contact your local Garland Representative or Garland Technical Service Department.

APPROVED DECKS AND INSULATION

Decks
Structural concrete
Gypsum with nailed base sheet
Tectum with nailed base sheet
Steel
Lightweight concrete with nailed base sheet
Treated wood with nailed base sheet

Insulation
Wood Fiber
Polyisocyanurate
Perlite (min. 3/4 in.)
SecuRock
Dens Deck
Polystyrene

Please see the most current Factory Mutual RoofNav for the most up to date system approval.

Eco Facts	Insul-Lock HR
VOC	0 g/l

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GarMesh®

PRODUCT DESCRIPTION

GarMesh is a Styrene-Butadiene-Rubber (SBR) coated, woven, fiberglass scrim used as a reinforcement for roof repairs. It has a distinct orange color that contrasts with bitumens to ensure complete coverage.

USES

GarMesh is used as a reinforcement for repairs to roofing blisters, fractures, punctures and other defects. GarMesh is compatible with either asphalt or tar mastics and adds strength to the roofing repair.

APPLICATION

Area to be repaired must be dry, free of all dust, dirt, and debris. Remove embedded gravel to expose a smooth surface. Priming the sound and dry area with Garla-Prime® is optional, but will promote adhesion. Apply the roofing mastic over the surface to be treated at approximately 1/8 in. (0.32 cm) thick. The mastic should extend 2 in. (5 cm) in all directions beyond the GarMesh membrane that is to be used. Then apply 1/8 in. (0.32 cm) additional mastic over the embedded GarMesh ensuring that the orange color is completely covered.

Technical Data	GarMesh
Average Net Weight	2 oz./sq. yd. (68 g/m²)
Tensile Strength per 1 in. (2.54 cm) width	Warp Threads 75 min. Filling Threads 75 min.
Treatment of Fabric by Weight % of Moisture Free Fabric	15%
Thread Count per 1 in. (2.54 cm) width	Warp Threads 20 ± 1 Filling threads 10 ± 1
Nominal Thickness	8 mils (203.2 mircons)
Width	6 in (152.4 mm)
Coverage	75 sq. ft./roll (6.79 m²/roll)
Packaging	Individual rolls

Meets ASTM D 1668-86, Type III

For specific application recommendations, please contact your local Garland Representative or Garland Technical Service Department.

MIAMI-DADE COUNTY APPROVED

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Flashing Bond®

PRODUCT DESCRIPTION

Flashing Bond is a cold-applied, trowel-grade mastic designed for use as a patching and leak repair material on asphalt roofing systems. It contains high-solids content asphalt, additional fiber reinforcement and plasticizing oils that improve low temperature performance.

PRODUCT ADVANTAGES

Factory Formulation Ensures Uniform Quality - Flashing Bond is factory formulated under rigid quality control conditions to ensure uniform product quality. This eliminates the variables inherent on the job site preparation of roof materials where quality control depends entirely on the individual roofer's expertise.

Multi-Purpose Application - Flashing Bond is a multi-purpose material ideal for installing or maintaining flashings, sealing metal roof or gutter leaks and repairing holes, splits or blisters in the roof mat.

Reinforced for Long Lasting Performance - Flashing Bond is double-reinforced to outlast and outperform conventional roof cement. Long strand fibers provide inherent reinforcement and eliminate run or sag in vertical surface applications. Flashing Bond should be used in conjunction with Gar-Mesh as the reinforcing membrane for the roof repair. These membranes support Flashing Bond as steel rods reinforce concrete.

APPLICATION

Flashing Bond is ready to use as is from the container. There is no settling or oil separation. In cold weather, store at room temperature to ensure workability. Flashing Bond should be applied to clean dry surfaces. Trowel a base coat of Flashing Bond over the area to be repaired. Imbed a strip of Gar-Mesh into the base coat and top dress with Flashing Bond. The top coat should be sufficiently thick so that the weave in the membrane is completely covered (1 gal./7 lineal ft. @ 8 wide x 1/4 in. deep).

Flashing Bond used in a Garland flashing system consists of a multi-ply flashing application beginning with a base ply of Garland two-ply base sheet followed by one of Garland's StressPly® family of smooth or mineral membranes as cap sheet. The result is a high performance, multi-ply, modified cold applied flashing system.

It is to be applied at a rate of 4 to 6 gallons per 100 sq. ft. (1.6- 2.4 l/m^2), per flashing ply with a 1/8" (3 mm) notched trowel. Bleed out at all overlap edges should be visible to ensure complete contact. The flashing should be mechanically secured at the end of each work day.

Flashing Bond

Technical Data	Flashing Bond
Flash Point (ASTM D 93)	103°F (39.4°C) min.
Density @77°F (25°C) (ASTM D 1475)	8.3 lbs./gal. (1 g/cm^3)
Non-Volatile (ASTM D 4586)	70% min.
Viscosity @77°F (25°C) Mobilometer, 1500 g	Typical 7 sec.
Water Resistance Under Good Drainage Conditions	Excellent
Coverage	
Flashing Install	4–6 gal/sq. (1.6–2.4 l/m^2)
Flashing Repairs 1/4 in. thickness (6.3 mm thickness)	7 lin. ft./gal. covers 8 in. wide (0.27 m/l covers 20 cm wide)
Packaging	3 gallon pail (11.4 l) 5 gallon pail (18.9 l)

Product meets and/or exceeds ASTM D 4586, Type II, Class I

For specific recommendations and coverage rates, please contact your local Garland Representative or Garland Technical Service Department.

Eco-Facts	Flashing Bond
VOC	200 g/l
Recycled Content	
Post Consumer	N/A
Post Industrial	5.6%

PRECAUTIONS

- As with all cold process materials, full cure is dependent on application rate, time and temperatures. Lingering odors are expected until product achieves full cure.
- Do not use this product on coal tar roofs.

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Silver-Shield®

PRODUCT DESCRIPTION

Silver-Shield is a premium quality, high solids content, fibrated aluminum roof coating formulated from specially selected asphalts, oils and resins. It combines waterproofing capabilities of an asphalt roof coating with the reflectivity of aluminum paint. Silver-Shield meets and exceeds ASTM D 2824, Type III.

PRODUCT ADVANTAGES

Saves Energy - A Silver-Shield application reduces under roof temperature by 15 ° or more. As a result, the workload on the building's air conditioning system is reduced by as much as one ton per 1,500 ft.² (1 ton (metric)/ 9.7 m²). Proper interior temperatures can be maintained at lower cost.

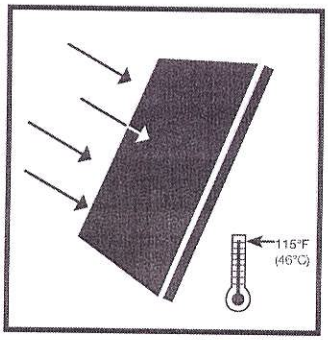
The Best By Test - Laboratory tests under conditions far more rigorous than any normal field experience verify Silver-Shield's improved performance and longevity. Silver-Shield surpassed conventional reflective coatings in bake tests, accelerated weathering, freeze-thaw cycling, flexibility and reflectivity tests.

High Solids Content - Garland selects only the best grade aluminum flakes and uses more of them per gallon in Silver-Shield than competitive manufacturers use in comparable coatings. The result is unequaled reflectivity that lasts for years.

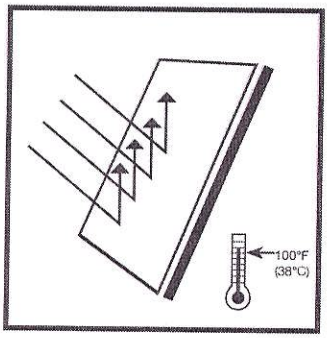
One Step, Labor Saving Application - Silver-Shield is a one step aluminizer. An emulsion base coat and a 30 day drying period are not required. A one coat application saves time and money - without sacrificing energy savings.

APPLICATION

Sweep off all dirt, dust and debris from the surface to be coated. If the roofing is dried out, prime the surface with Garla-Prime (1 gal/100 ft.² or 41 l/m²) before applying Silver-Shield. Repair any cracks, splits or surface irregularities with Flashing Bond mastic and GarMesh. Stir Silver-Shield prior to application. Silver-Shield is designed for squeegee, roller or brush application.



1) Expose a panel of black asphalt roofing to a radiant heat source. Place a thermometer on the opposite side...and watch the temperature rise.



2) Then, expose a panel of the same roofing, painted with Silver-Shield, to the same heat source. A thermometer on the other side of the panel will show more than a 15° difference in temperature.

PRECAUTIONS

- Do not apply unless temperatures are at least 50°F (10°C) and rising
- Do not apply if there is a threat of rain, dew or temperatures below 50°F (10°C) forecasted within 24 hours
- Avoid over working the material which can interfere with the leafing of the aluminum and cause the material to appear bronze or darker than desired
- Mix material with a Jiffy Mixer attached to a low speed drill. Mix until the material is consistent

Silver-Shield

Technical Data	Silver-Shield
Flash Point (ASTM D 93)	100°F (38°C) min
Density @77°F (25°C) (ASTM D 1475)	8.7 lb./gal (1.04 g/cm³)
Viscosity @ 75°F (27°C) (ASTM D 562) Krebs Stormer	100-125 KU
Non-Volatile (ASTM D 6511)	60% min.
Typical Drying Time	Overnight
Service Temperature, Extended Exposure	-20°F to 180°F (-29°C to 82°C)
Resistance to UV Light	Excellent
Effect of Weathering	Slow erosion
Shower Resistance	Excellent
Wet Film Thickness @ 2 gal. (7.6 l)	32 mils (812.8 microns)
Coverage	2 gallons per 100 sq. ft. (0.82 l/m²)
Packaging	2 gallon pail (7.6 l) 5 gallon pail (18.9 l)

Eco-Facts	Silver-Shield	
VOC	400 g/l	
Recycled Content		
Post Consumer	N/A	
Post Industrial	3.34%	
	Initial	**3 Year Aged**
Reflectance	0.61	0.55
Emittance	0.44	0.44
SRI	58	48

For specific application recommendations and coverage rates, please contact your local Garland Representative or Garland Technical Service Department.

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S-S 0413

Silver-Flash®

since 1895

PRODUCT DESCRIPTION

Silver-Flash is a cold-applied, silver trowel-grade mastic designed for three course applications on flashings, patching and leak repair. It is formulated with a premium oxidized asphalt base, a high quality premium leafing silver-aluminum paste, along with fibers and thixotropic additives that impart a brilliant finish and vertical sag resistance.

PRODUCT ADVANTAGES

Cost Savings - Silver-Flash delivers a finished product on application eliminating the need to come back to aluminize black asphalt mastic and flashings after 30 days. This provides the building owner with a one step application, which saves building owners and contractors time and money.

UV Stable - Unlike traditional mastics, Silver-Flash is silver in color right out of the pail and when applied turns a brilliant silver color reflecting UV rays away from the application.

Multi-Purpose Application - Silver-Flash is a multi-purpose material ideal for rebuilding or maintaining flashings, repairing holes, splits or blisters in asphalt based roof systems.

Reinforced for Long Lasting Performance - Silver-Flash is double-reinforced to outlast and outperform conventional roof mastics. It contains specialty clays, fibers, and a unique thixotropic additives that eliminates run or sag in a vertical surface application. Silver-Flash should be used in conjunction with Gar-Mesh as the reinforcement material in the roof repair.

USES

Silver-Flash can be used with any asphalt roofing system for rebuilding or maintaining flashings, repairing holes, splits or blisters in the roof surface. Not recommended for use when there is a 40% chance of rain in the forecast.

APPLICATION

Silver-Flash is a ready to use as is from the container. In cold weather, store at room temperature to ensure workability. Silver-Flash should be applied to clean dry surfaces to achieve full adhesion. To prevent browning out of the material, use a clean trowel that has not been contaminated with regular asphaltic mastic. For best results, trowel a base coat of Silver-Flash over the area to be repaired. Embed Gar-Mesh into the base coat and then top dress with an additional layer of Silver-Flash. The top coat should be sufficiently thick so that the Gar-Mesh is fully embedded to achieve a complete seal.

PRECAUTIONS

- As with all cold process materials, full cure is dependent on application rate, time and temperatures. Lingering odors are expected until product achieves full cure.
- Do not apply unless temperatures are at least 50°F (10°C) and rising
- Do not apply if there is a threat of rain, dew or temperatures below 50°F (10°C) forecasted within 24 hours
- Avoid over working the material which can interfere with the leafing of the aluminum and cause the material to appear bronze or darker than desired
- Mix material with a Jiffy Mixer attached to a low speed power drill. Mix until the material is a consistent color.

Silver-Flash

Technical Data	Silver-Flash
Flash Point (ASTM D 93)	100°F (37.7°C) min.
Density @ 77°F (25°C) (ASTM D 1475)	8.3 lb./gal. (1.0 g/cm^3)
Non-Volatile (ASTM D 2369)	70% min.
Viscosity @ 77°F (25°C) Mobilometer 1500g	9-11 seconds
Coverage Mat Repairs 1/4 in. thickness (6.3 mm thickness)	5 - 6 sq. ft./gal. (0.12 - 0.15 m^2/l)
Flashing Repairs 1/4 in. thickness (6.3 mm thickness)	7 lin. ft./gal. covers 8 in. wide (0.27 m/l covers 20 cm wide)
Packaging	3 gallon pail (11.4 l) 5 gallon pail (18.9 l)

Eco-Facts	Silver-Flash
VOC	300 g/l
Recycled Content	
Post Consumer	N/A
Post Industrial	5.19%
Reflectivity	Typically 60%

For specific recommendations and coverage rates, please contact your local Garland Representative or Garland Technical Service Department.

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