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READ BEFORE USING THIS PRODUCT

GENERAL: GeoFilm is a peel-and-stick type waterproofing membrane supplied in rolls that is used as a positive side moisture barrier for below ground waterproofing applications. GeoFilm is composed of a layer of specially designed polymer modified asphalt waterproofing membrane adhesive laminated to a 4 mil (0.10 mm) minimum thickness heavy duty cross laminated polyethylene film. To use, GeoFilm is removed from the box and unrolled or placed onto prepared surfaces, while removing the release liner and then pressed or rolled to ensure contact and adhesion.

PRODUCT SELECTION: GeoFilm is used for many below ground waterproofing applications including box culverts, concrete pipe joints, median and paved shoulder inlets, foundations, retaining walls, manholes, catch basins, headwalls, etc and many other horizontal, vertical or curved applications. The polyethylene backing is not resistant to high temperatures; therefore GeoFilm should not be used where it will be subjected to construction of hot asphalt concrete overlays.

GeoFilm is supplied in 12" (0.3 m) and 36" (0.9 m) widths. The 12" (0.3 m) widths are used for treating narrow cracks or joints or as edge/corner reinforcing strips. The 36" (0.9 m) wide GeoFilm is used for the surface waterproofing installation.

SURFACE PREPARATION PROCEDURES: For best performance, GeoFilm must only be applied to surfaces that are clean, thoroughly dry with no lingering moisture at cracks, free of contaminants, stable, relatively smooth and which have had defects repaired or treated. Surfaces are to be structurally sound and stable and not experience excessive differential vertical movement from loadings. Obvious areas of excessive deflection such as faulted joints and subsided slabs should be repaired and stabilized to provide a stable surface prior to use. The surface should be sufficiently level or plane without protrusions or depressions, so that the membrane will be in complete contact with the surface.

Cleaning: The surface should be swept or blown with clean moisture and oil free compressed air to remove dirt, dust, vegetation or other miscellaneous debris. Areas that are not adequately cleaned with sweeping or air may require scraping with shovels or other hand tools, followed by compressed air blowing. Surfaces with bonded accumulations may require more intensive cleaning procedures such as high pressure water blasting, wire brushing or abrasive cleaning. The cleaning procedure is to result in surfaces which are dry and free from dust, dirt or other contaminants. Additional cleaning procedures for several surfaces follow:

Portland Cement Concrete Surfaces – New portland cement concrete surfaces usually are treated with curing agents and may be contaminated with form release oils. Curing compounds used should not contain silicone, oil or wax bases, as membrane adhesion may be affected. Form release agents should be a self-dissipating type. New PCC must be cured for at least 7 days. Abrasive cleaning or high pressure water blasting may be required for PCC to remove curing agents or form release compounds.

Wood Surfaces – Surfaces may be treated with preservatives, which may even accumulate on the surface. Excess preservative is to be removed by scraping and cleaning with solvent such as mineral spirits. Wood surfaces must be cleaned down to the wood surface. Some preservative types may not be compatible with the membrane adhesive and may result in softening or adhesion loss.

Steel, Aluminum or Other Metal Surfaces – Metal surfaces must be free of dirt, dust, scale, rust, corrosion, flaking paint, oil residues, etc. Cleaning should consist of compressed air, water blasting, brushing, abrasive cleaning, scraping, etc as required to result in a clean, sound and dry surface.

Repair of Cracks, Joints & Other Distresses: Cracks or joints over 1/16" (1.6 mm) wide should be treated with a 12" (0.3 m) wide strip of GeoFilm applied to the cleaned and primed surface, and centered over the crack or joint. If the crack or joint is over 1/4" (6 mm) wide, it shall first be sealed with an appropriate, effective sealant prior to application of the 12" (0.3 m) GeoFilm strip. Maximum crack or joint width to be treated with GeoFilm is 2" (50 mm). For larger distressed areas, 36" (0.9 m) wide GeoFilm is to be cut to the required size to cover the area with an additional 6" (15 cm) extending beyond the distress in all directions. The piece is then applied to the prepared and primed surface.

Cracks, joints or other distresses over 2" (50mm) wide shall be repaired with an appropriate method to provide a stable and durable surface. The repaired area shall be covered with an appropriate sized application of GeoFilm. For increased strength and reinforcing at repairs, strips of GeoTac HS may be used in lieu of GeoFilm.

Surface elevation differences, protrusions or depressions over 3/8" (1 cm) shall be either filled, ground down or wedged with an appropriate leveling product prior to GeoFilm application.

Priming: Primer application improves membrane adhesion during cooler installation temperatures and when surface conditions are not optimal. For best performance, primer is recommended for all installations. Recommended primer is Crafco Asphalt Primer or another equivalent solvent base asphalt. Several other primer types may be appropriate in certain applications. Contact Crafco for more information.

Crafco Asphalt Primer or equivalent solvent based asphalt primer is to be applied by brush, roller or spray at an application rate of between approximately 200 to 400 ft²/gallon (0.025 to 0.05 gsy). Application rate will depend on surface condition, porosity and texture. Application should result in a completely wetted surface without puddling. Primer must completely cure prior to membrane installation. Curing time required depends on weather conditions, including temperature, cloud cover, wind and humidity. At 70°F (21°C) on a sunny day curing will generally take from 30 minutes to 2 hours. At temperatures below 55°F (13°C) primer should be allowed to cure for at least 16 hours or overnight. Minimum temperature for primer applications is 45°F (7°C). Primer is cured sufficiently when it reaches a tacky condition when touched with no transfer to one's finger. All areas of the primed surface must reach this state of curing prior to membrane application. GeoFilm is to be applied the same day as when the primer becomes fully cured. If

membrane is not applied that day, the surfaces shall be re-primed. Other primer types will have different application rates, methods and curing requirements.

MEMBRANE INSTALLATION: GeoFilm installation should follow procedures and details of ASTM D5898, “Standard Guide for Standard Details for Adhered Sheet Waterproofing”, when used for below grade structural and plaza waterproofing.

Weather and Temperature: The minimum surface temperature for installation of these products is 45°F (7°C). During installation weather must be dry, with no rain, drizzle or fog. Additionally, installation should not occur at temperatures less than the dew point due to the possibility of presence of surface moisture.

Membrane Placement: These products are to only be applied to surfaces that are clean, dry, prepared and primed as indicated in the Surface Preparation Procedures section. Do not remove any of the release liner until just before placement of the membrane. For horizontal surfaces, remove approximately 3 ft (1 m) of the release liner and then place the membrane with the black, tacky side down onto the surface. Once positioned, it may be difficult to remove and readjust. Then, unroll the membrane while removing the release liner. During installation and unrolling, the membrane should be kept in slight tension. The membrane is to be laid straight, smooth and wrinkle free. For vertical installations, cut the required product length in strips, then remove the release liner and position on the vertical surface from top down. Horizontal installations can also be performed using lengths or precut strips instead of unrolling. Once installed, GeoFilm may be difficult to reposition due to the highly aggressive membrane adhesive.

Laps: GeoFilm is to be overlapped at all seams and ends from 2 to 5” (5 to 13 cm) in a manner that the overlaps shed water.

Corners: GeoFilm is to be installed so that at all corners, both inside and outside, there are a minimum of 2 layers of membrane. Follow details for corners as shown in ASTM D5898. Reinforcing strips of 12” (30 cm) wide GeoFilm or GeoTac HS can be used to provide increased durability at corners.

Sealing: At all locations in the installation that the GeoFilm ends on the surface being waterproofed or at obvious areas where the GeoFilm is not a continuous application, such as at tops and bottoms or ends inside or outside corners, a strip or bead of sealing mastic approximately 1/8” (3 mm) thick and at least 1” (25 mm) wide shall be installed. Contact Crafcoc for sealing mastic recommendations.

Penetrations, Drains, Manholes and Protrusions: At penetrations in the surface, such as drains, manholes, gutters, wide expansion joints, etc, place the membrane over the opening, then carefully and neatly cut to remove membrane material from the opening to the edge of the opening. Seal the edge with mastic. Edge reinforcing strips 12” (30 cm) wide can also be used to provide additional reinforcement at edges. At protrusions, above the membrane, cut membrane strips to place around the protrusions to the desired level and also around the corners and extending onto the surface that the protrusion penetrates. The reinforcing should extend at least 6” (15 cm) from the protrusion in all directions. Full membrane surface is then applied, up to the protrusion, with edges sealed with mastic.

Membrane Rolling: After applying to the surface, the membrane is to be pressed or rolled to establish a tight and full continuous bond with the underlying surface.

INSTALLATION INSPECTION AND REPAIR: Following rolling, the installation is to be inspected for defects and repaired if required. Blisters should be punctured to allow air to escape, then pressed into place. Minor wrinkles less than 3/8” (1 cm) can be slit and re-adhered. All repairs should be covered with an additional layer of GeoFilm that extends at least 6” (15 cm) in all directions from the repair, with edges sealed with mastic. Larger areas of damaged membrane should be removed and patched with additional membrane with edges sealed with mastic. All joints and edges should be inspected for adhesion and sealing. If deficiencies are noted, they are to be corrected before proceeding with additional construction. If possible, it is recommended that the installation be tested for watertightness following ASTM D5957, “Standard Guide for Flood Testing Horizontal Waterproofing Installations”, prior to proceeding with additional construction.

MEMBRANE PROTECTION: GeoFilm installations must be covered with an appropriate protection course as soon as possible following membrane installation or flood testing. Recommended protection course is 1/8” (3 mm) minimum thickness laminated asphalt core panels. Installation shall follow ASTM D6451, “Standard Guide for Application of Asphalt Based Protection Board”. Protection course provides some protection for the GeoFilm from damage from ongoing construction or backfilling operations, but damage can still occur. Ongoing construction operations must be conducted to not damage the GeoFilm. If damage occurs, it must be repaired.

GeoFilm must also not be subjected to long term (greater than 7 days) sunlight exposure due to degradation which can occur from ultra violet (u.v.) light exposure.

STORAGE: GeoFilm must be protected from and not be exposed to moisture and rain during shipping and prior to installation. The plastic wrap on the pallets does not protect the product from moisture. Product which has been exposed to moisture may not adhere adequately. Any material that becomes wet prior to installation shall be removed from the jobsite and discarded. Storage temperature shall not exceed 120°F (49°C). During storage, the plastic release liner may change color due to being in contact with the asphalt adhesive. This change is normal and does not adversely affect the product.

SAFETY PRECAUTIONS: Prior to use, the user must read the Material Safety Data Sheets for these products. Installation requires use of cutting tools, rollers and other equipment and workers may be in traffic environments or on elevated or below grade surfaces. Adequate safety precautions and traffic control measures are to be taken to protect workers during the installation process. Primers, if used, may contain combustible or flammable solvents. Adequate fire protection measure are to be taken during primer installation as specified in the primer MSDS.

ADDITIONAL INFORMATION: For additional information, refer to Product Data Sheets and Material Safety Data Sheets for these products or contact Crafcoc, Inc. at www.crafcoc.com.