

PRODUCT APPLICATION GUIDE

Additional product information can be found on the Demilec website at www.Demilec.com. Refer to the following documents plus this Product Application Guide to establish processing parameters for varying substrate and climatic conditions:

- Center for Polyurethane Industries, Guidance on Best Practices for the Installation of Spray Polyurethane Foam
- Geolok Technical Data Sheet
- Geolok B-side SDS
- A-PMDI SDS

GENERAL PROCESSING GUIDELINE

Geolok™ requires heat from the proportioner to complete the chemical reactions necessary to create foam meeting the specifications on the Technical Data Sheet. Fully functional primary heaters and hose heat are needed to process Geolok. Please consult the Demilec Technical Service Department for further assistance.

CHEMICAL CONDITIONING

The chemical drums should be stored and maintained between 50°F (10°C) and 85°F (29°C) before processing at the job site. If the drums are bulged due to excessive heat, do not open the drums. Cool the drums for approximately 24 – 48 hours to allow the reacted blowing agent to return to a liquid state. Other means of cooling the drums on site may be necessary, contact the Demilec Technical Service Department for more information.

SUBSTRATE PREPARATION

Geolok is designed to be applied directly to the soil, therefore there is no significant substrate preparation needed. Geolok is sprayed continuously for the length and width of the area needed in a cross-hatched manner until the desired thickness has been reached.

APPLICATION PARAMETERS

EQUIPMENT – Follow the spray equipment manufacturer’s safe operation guidelines. Every spray unit is slightly different and you will need to adjust your primary heater and hose temperatures accordingly for each polyurethane foam system. Adjust your processing pressures and application technique for an appropriate spray pattern for the substrate and structure.

PROPORTIONER – Use only fixed ratio (one-to-one), volumetric positive displacement pumps connected to a common drive.

TRANSFER PUMPS – Use 2:1 or 1:1 double acting transfer pumps assuring equal pressure is delivered from both sides to the proportioner. Diaphragm pumps, wall mounted or drum mounted pumps should not be used to process 2 lb foams containing the blowing agent 245fa. Contact the Demilec Technical Service Department for recommendations.

PRIMARY HEATERS – The primary heaters should be resistance controlled, direct contact heating rods, either submersible, mass block and tube style or combination of direct heating contact rods and mass block (hybrid heater). The primary heaters should be controlled through independent controllers, separated from the hose heat to ensure an accurate setpoint temperature. Geolok may not be consistently sprayed in conformance with the written specification if the combination of the proportioner’s pumping capacity, the primary heat capability and spray gun discharge rate (mixing chamber size) is out of balance. Contact the Demilec Technical Service Department for further guidance.

HEATED HOSE – Demilec recommends the use of heated spray hoses rated at ≥ 2000 psi. Use moisture resistant hoses specifically designed for isocyanate. The heated spray hose should be able to maintain temperatures up to 190°F (88°C) and should be heated using an electrical element with an independent temperature sensor. The heated hose should also be adjusted and monitored separately from the A and B primary heaters, and should be capable of maintaining the temperature from the A and B primary heaters all the way to the spray gun.

FLUSHING/CHANGING FROM ANOTHER CHEMICAL TO GEOLOK

Follow the published flushing procedure on the Demilec website. Never flush water through the A-side (iso side). Failure to properly flush will result in off-spec foam.

FOAM APPLICATION

In preparation for spraying, an off-target test spray should be performed to verify the processing pressure, primary heater and hose temperature settings. The “initial setpoint temperatures” listed below and on the Technical Data Sheet are suggested general starting parameters; it’s important to observe the foam and the reaction time of the reacting mass and make additional adjustments throughout the day as needed to maintain proper cell structure, adhesion, cohesion and general foam quality.

RECOMMENDED PROCESSING CONDITIONS*		
Initial Primary Heater Setpoint Temperature	102°F	39°C
Initial Hose Heat Setpoint Temperature	102°F	39°C
Initial Processing Setpoint Pressure	700 psi	4827 kPa
Substrate & Ambient Temperature	41 – 95°F	5 – 35°C

*Foam application temperatures and pressures can vary widely depending on temperature, humidity, elevation, substrate, equipment and other factors. While processing, the applicator must continuously observe the characteristics of the sprayed foam and adjust processing temperatures and pressures to maintain proper cell structure, adhesion, cohesion and general foam quality. It is the sole responsibility of the applicator to process and apply Geolok within specification.

Geolok can be applied in excess of 24" to the substrate. The foam is applied in a cross-hatch manner in which the direction of spray is change with each lift.

LIMITATIONS OF USE

Geolok is a combustible material with a maximum continuous service temperature of 180°F (82°C). Geolok should not be used in direct contact with chimneys, flues, steam pipes, recessed lighting or heat emitting devices. Consult the listing or label of such materials for clearance to combustibles. A minimum clearance of 3" should be maintained when applying around recessed lighting, and it's important to avoid spraying inside electric outlets or junction boxes. Properly prep and secure any material or surface that should not get insulated. If in doubt about the substrate temperature or surface conditions, a trial application should be conducted to check foam quality and spray performance. Water on the surface from rain, fog, condensation, etc. will react chemically with the isocyanate, adversely affecting the foam and physical properties, particularly adhesion.

COLD WEATHER PROCESSING

The minimum substrate and ambient temperature for Geolok is 50°F (10°C). Low temperatures affect the foaming process in two ways.

1. Chemical reactions can be slowed due to reduced exothermic energy within the expanding mass, which could lead to poor cell structure, dripping and voids from slow plastic formation
2. This reduced temperature often leads to reduced yield.

The temperature and type of substrate has a greater influence on the quality of the foam than the temperature of the air because the rate of heat transfer from liquid to air is much slower than the rate from liquid to substrate. If the substrate temperature is too low, or it is a highly conductive material such as metal or concrete, the heat produced by the chemical reaction may be drawn into the substrate so rapidly that plastic formation and cell generation becomes very slow, thus reducing yield. It is not a good practice to use the heated chemicals to warm the surface (flash coat). Instead, if the substrate to be sprayed is too cold to produce proper foam, the substrate should be heated using an indirect-fired heater or the foam should be sprayed on a warmer substrate on a warmer day. No open flame or direct heating is permitted during the spraying process.

CHEMICAL STORAGE

Geolok B-side resin is packaged in totes or in closed-head metal drums. A-PMDI is packaged in totes or in closed-head metal drums. Store the B-side resin at temperatures between 50°F (10°C) and 85°F (29°C). Store the A-side isocyanate at temperatures between 50°F (10°C) and 100°F (38°C). Keep away from direct sunlight. Remove the transfer pump and tightly close the bungs of the A-PMDI and B-side drum after use. Geolok B-side resin has a 6 month shelf life when stored within the acceptable storage temperatures and the drum is in its original condition with the bungs having never been removed. See Geolok B-side SDS for additional product information.

LIMITATIONS

This product is not for use in residential or commercial buildings. This product must not be used when the continuous service temperature of the substrate or foam is below -60°F (-51°C) or above 180°F (82°C). Geolok must be protected from direct exposure to sunlight; incidental exposure during construction may cause surface discoloration but will not degrade the performance of the foam.

FOR MORE INFORMATION

Visit www.Demilec.com or call 817-640-4900 for more information on health, safety and environmental protection with respect to polyurethane chemicals.

Disclaimer: The information herein is to assist customers in determining whether our products are suitable for their applications. We request that customers inspect and test our products before use and satisfy themselves as to contents and suitability. Nothing herein shall constitute a warranty, expressed or implied, including any warranty of merchantability or fitness, nor is protection from any law or patent inferred. All patent rights are reserved. The foam product is combustible and must be protected in accordance with applicable codes. Protect from direct flame and spark contact, around hot work for example. The exclusive remedy for all proven claims is replacement of our materials.