

# TL-0009 — Spraying PERM-A-BARRIER<sup>®</sup> Liquid at Low Temperatures Technical Letter (US Version)

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## General

PERM-A-BARRIER<sup>®</sup>Liquid is a 100% solids, two component, synthetic rubber, cold-vulcanized, liquid applied waterproofing membrane. It cures to form a resilient, fully bonded elastomeric sheet. PERM-A-BARRIER<sup>®</sup>Liquid can be spray applied to horizontal or vertical surfaces in a single layer of up to 1.8 in (3 mm) thickness with correctly specified spray equipment. With spraying, application rates of up to 300 liters/hour (75 gallons/ hour) are achievable. PERM-A-BARRIER<sup>®</sup>Liquid can be sprayed at ambient temperatures as low as 20°F (-7°C).

## Material Handling

### Part A:

At temperatures above 20°F (-7°C) no additional heating is required to pump and spray Part A. The Part A drums should be thoroughly pre-mixed before spraying.

### Part B:

PERM-A-BARRIER<sup>®</sup>Liquid Part B is water-based and it is essential that it be kept above freezing in storage and use. At ambient temperatures of below freezing, some form of low level heating system should be used. The easiest way to achieve this is to store the Part B in a heated store or box truck. If the temperature is likely to drop below freezing, it is important not to leave Part B in the machine or hoses when it is not being used. The Part B should be flushed out with PROCOR<sup>®</sup>Flushing Oil to prevent the hose freezing up.

## Heated/Insulated Hoses

The key to successful cold weather application is to minimize pressure drop and cooling as the material is pumped along the hoses. Even if the materials are stored or pre-heated to temperatures above freezing, there can be significant cooling along the length of the hoses, particularly during down-time when the material will quickly cool to ambient temperature. To counteract this either insulated or heated and insulated hoses should be used.

Pre-insulated and heated hose systems are available from the spray equipment manufacturer, but it is also possible to insulate and/or heat the hoses using materials that are available from most hardware stores. Electric trace heaters can be wrapped around the hoses, followed by flexible pipe insulation and an outer protective layer of heavy gauge polyethylene or hose sleeve (black to maximize additional solar heating). This can be powered by an electric generator when needed.

To minimize pressure drop it is critical to use hoses with the recommended diameters (3/8 in for Part A and 5/16 in for Part B) or larger. If extension hoses are needed, they must have a greater diameter than noted above and must be fitted between the spray machine and the lower diameter hose. For example to achieve a hose length of 150 ft (50 m), use a 19 mm (3/4 in.) diameter extension hose for Part A and 1/2 in (13 mm) diameter extension hose for Part B.

## Substrate Temperature and Condition

Although PERM-A-BARRIER®Liquid can be sprayed onto substrates as low as 20 °F (-7 °C), care should be taken to ensure that there is no condensation, ice or frost on the surface of the substrate as this will affect adhesion of the membrane. If ice is detected, steps should be taken to melt the ice. Also, at temperatures below 40 °F (5 °C) a longer cure time will be required to ensure that the membrane is sufficiently cured to allow protection board installation and back-filling.

## Spray Gun Set-up

With PERM-A-BARRIER®Liquid there is little need to adjust the spray gun set-up until you get to very high temperatures (greater than 80 °F (27 °C)). The following guide details the recommended settings to be used though the pressure settings required may vary with specific pump or hose configurations.

	LOW TEMPERATURE	MID TEMPERATURE	HIGH TEMPERATURE
	- 20 °F TO 55 °F	55 °F TO 80 °F	80 °F (27 °C) OR HIGHER
	(7 °C TO 13 °C)	(13 °C TO 27 °C)	
A Side Orifice	Blank Plug	Blank Plug	Blank Plug
B Side Orifice	0.035 in.	0.035 in.	Blank Plug
Static Mixer 1/4 in. dia.	3 turns	2 turns	2 turns
Spray Tip Opening	0.039 in. to 0.045 in.	0.039 in. to 0.051 in.	0.039 in. to 0.051 in.
Pump Manifold Pressure	75 psi to 80 psi	60 psi to 75 psi	55 psi to 85 psi