

TL-0010 — Spraying PERM-A-BARRIER® Liquid at High Temperatures Technical Letter

When spraying PERM-A-BARRIER® Liquid at high ambient or material temperatures (above 27°C/80°F) certain adjustments may be needed to the equipment set-up depending on the equipment type, hose configuration and current spray gun set-up. If these adjustments are not made and the same set-up is used as for lower temperatures then the following effects may be seen:

Pulsing

Due to the lower viscosity at high temperatures there is less back-pressure created by the hoses and spray tip. This will result in pulsing or pressure drop off as the fluid pumps cycle. This will be felt as a variation in pressure when holding the spray gun and could be seen as a color variation in the form of vertical stripes of A or B rich material across the whole width of the spray fan. The white stripes may be more visible after curing (see photo below).

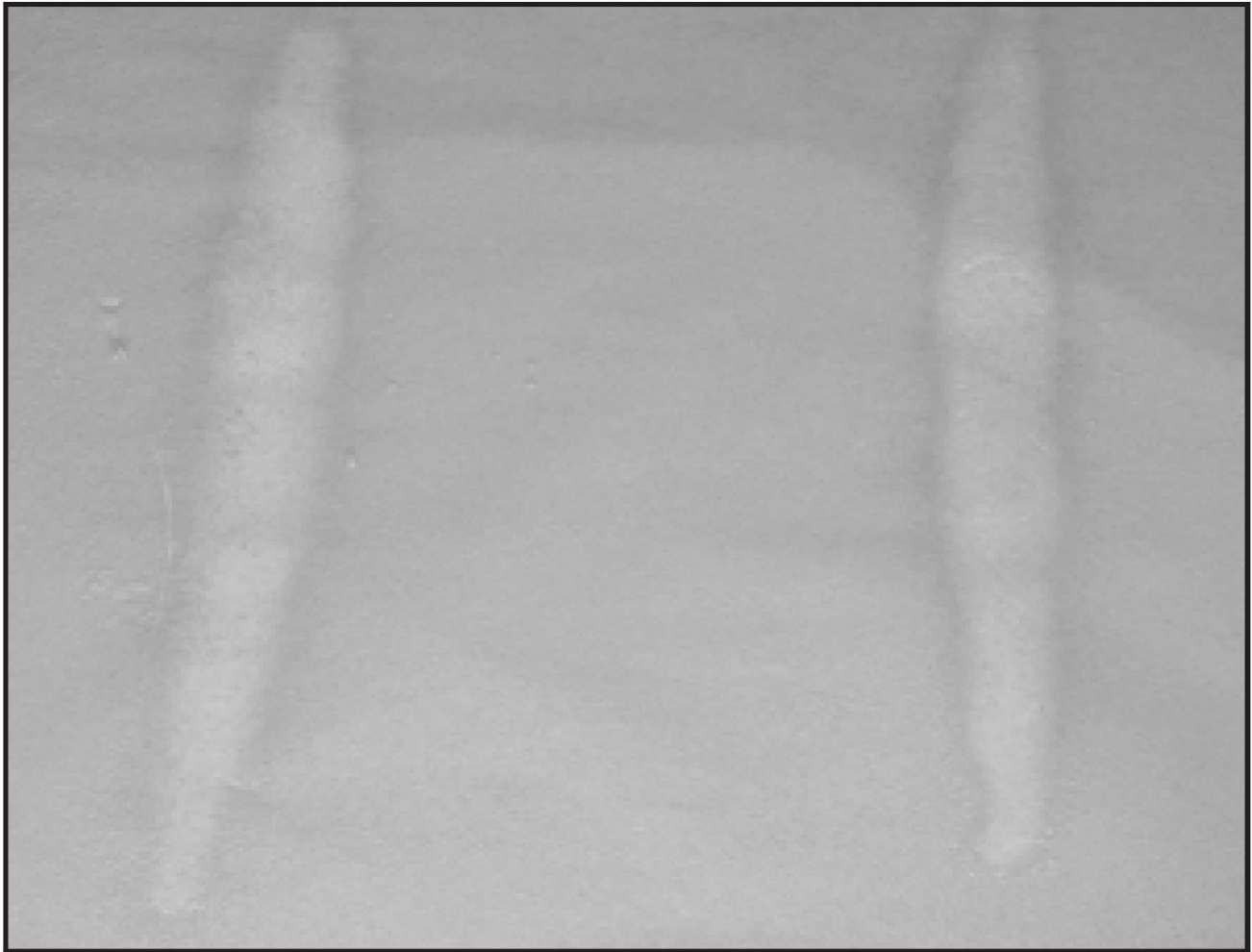


Photo 1. Photo of pulsing example.

Solution:

If this problem is seen, then the hose configuration will need to be modified and a 150 ft section of existing Part A hose should be replaced with 0.25 in. hose.

To even out the pulsing, at least 1600 psi should be seen on the Part A side pressure gauge. It will probably be necessary to increase the pump inlet pressure to achieve this.

Rough Spray Pattern

A slightly rough surface is to be expected with PERM-A-BARRIER® Liquid, if the spray fan is even and thickness control good then this is not a problem. At high temperatures Part A and Part B mix together more freely and if they become over-mixed then the surface of the PERM-A-BARRIER® Liquid will be excessively rough and the spray fan may appear stringy (see photo below).



Photo 2. Example of over-mixing.

Solution:

If this problem is seen, then an adjustment to the spray gun set-up will be needed. The following spray gun set-up should be used:

HIGH TEMPERATURE SPRAY GUN SET-UP	
A Side Orifice	Blank Plug
B Side Orifice	Blank Plug

Mixing:	2 turns static mixer
Spray Tip:	0.039 in. to 0.051 in., 50° Graco Reverse-A-Clear®
Inlet Pressure:	55-85 psi
Material Line Pressure A Side:	1600 to 2000 psi
Material Line Pressure B Side:	800 to 1000 psi
A Transfer Pump:	30-40 psi
B Transfer Pump:	30-40 psi

Note: At very high material temperature, if a rough surface, is seen remove the static mixer entirely. As the temperature drops it may be necessary to replace the static mixer and increase to 3 turns.

Material Temperature

When spraying at high ambient temperatures it is very important to store both A and B drums away from direct sunlight. If covered storage is not available then a light colored tarp or tent should be placed over the drums to keep the sun off them. It is important to remember that even if the air temperature is relatively low, the heating affect of the sun can raise the temperature of black or dark colored drums and hoses to well above 100°F. White hose wrap will also help reduce material temperatures in very sunny conditions.

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