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SL-500 Aromatic Urethane Reference Guide

Surface Preparation

Clean and dry dirty surfaces before applying SL-500. To ensure proper adhesion, some sanding may be required. (See Appendix) Wipe down surface area with an acetone or MEK. DO NOT USE LACQUER THINNER.

Warning: Moisture contamination on a surface will cause blistering and adhesion problems. Be sure to use proper water filtration systems on air supply. Primer 700 will be needed on wood and concrete applications.

Equipment

Equipment set up will vary from rig to rig. Here are a few things to monitor to ensure proper spray:

- Maintain chemical temperature. (90F-110F)
- Maintain hose heat. (130F-140F)
- Maintain liquid pressure. (2100 psi –2600 psi)
- Maintain a clean gun
- Check for leaks in filters and seals

Spraying SL-500

Once temperature ranges are reached on material and equipment, it's time to spray. Open valves on manifold and release safety on gun. Spray a few test patterns away from target. This will help eliminate off ratio spray. Spray about 3 feet away from target area. Maintain a steady spray pattern from side to side to achieve a smooth finish, then texture. Texture is sprayed on final coat and can be made rough or smooth depending on distance from surface area and air pressure settings.

Note: Mil thickness and temperature can affect dry time.

Important: Maintain distance to avoid runs or sags. If runs or sags occur, shut down equipment as described in Temporary Downtime and follow these steps:

1. Sand runs or sags with a nylon cup brush.
2. Clean with Acetone or MEK. (Allow to thoroughly dry).
3. Re-spray SL-500.

To restart equipment, (See Down Time procedures).

Always monitor material temperature gauges and hose pressure to maintain proper spray. Alarms and monitors can be installed to help prevent off ratio spray and/or temperature deviation.

Quality Control

To maintain the highest of quality standards, you must control the following variables:

1. Substrate (or surface) variables

- Surface texture – must have a rough surface to enhance the physical bond of the liner to the truck. Poor surface prep can lead to the liner delaminating.
- Surface temperature
 - a. Heat changes the reactivity and therefore texture of the liner.
 - b. Heat must always be provided to maintain consistency.
- Surface moisture and contaminants
 - a. Moisture and contaminants can cause blistering.
 - b. Wet surfaces can slow down sanding process.
 - c. Any other contaminants will be controlled by the wipe down with MEK.

2. Polymer Variables

- Temperature reactivity – higher temperature of the polymer will increase the reactivity, the speed at which the material cures.
 - a. Lower reactivity makes the “droplets” larger and gives a wet, shiny appearance.
 - b. Higher reactivity makes the “droplets” smaller and gives a dryer appearance.
 - c. Temperature of polymer should be controlled at all times of the process.

- Hot Room
 - Pre-heaters and hoses
 - Temperature gauges
- d. Maintain temperature within spray booth above 72F.
- Pigment mix – over time pigment (color) will settle to the bottom of the storage vessel.
 - a. Polymer with too little pigment will fade faster and be off in color.
 - b. Polymer with too much pigment will lose physical properties and rip/tear easier.
 - c. Pigment mix should be controlled by properly remixing the color within the container prior to spraying (if applicable).

It is important to keep desiccant filters on both drums or totes, A-side and B-side, to prevent moisture contamination, if using drum or tote sets. Fittings and filters can be purchased from Industrial Polymers. It is important to monitor filters and change when beads turn from blue to pink. This will prevent moisture contamination in material.

3. Spray variable

- Ratio Mix – SL-500 and 700 must both be sprayed at 1:1 ratio.
 - a. A margin of error must be kept at +/- 2% or less.
 - b. Spraying the product off ratio causes a multitude of problems: foaming, delaminating, complete cure failure, poor physical traits, premature aging of the liner, and color shifts.
 - c. Ratio mix can be controlled by flow meters and valve shut downs.
- Application flow rate – the amount of volume being sprayed can have a huge impact on the appearance of the liner.
 - a. Pressure meters will control flow rates.
 - b. Spray tip size also impacts flow rate.
- Spray distance – the distance between the gun tip and surface being sprayed.
 - a. Spray distance can affect both the performance of the liner and the overall appearance of the texture.
 - b. Maintain a constant distance when spraying.

- Speed of spray pass – the rate at which the spraying gun moves from side to side or up and down.
 - a. Speed of pass can affect both the performance of the liner and the overall appearance of the texture.
 - b. Speed of pass also affects volume of material sprayed, impacting cost as well.
 - c. Maintain a constant distance when spraying.

- Number of spray passes
 - a. Number of spray passes can affect both the performance of the liner and the overall appearance of the texture.
 - b. Number of spray passes also affect volume of material sprayed, impacting cost as well.

Down Time Procedures

The following are steps for **Short Term Shutdown** - If there is a lapse of more than 20 minutes or greater during same workday, follow these steps:

1. Maintain material at 90F-100F.
2. Shut off proportioners.
3. Shut off valves on gun.
4. Open recirculating valve to relieve pressure from hose bundle.
5. Lower pumps into the down position. This procedure is called “parking pumps”.
6. Shut off primary heaters.
7. Leave hose heat turned on.

Material can be left in equipment, up to 1 week, before flushing out material with DOP on A-component is required.

If you are finished spraying for the day, there are two shut down procedures, short term and long term. Short term shut down consists of end of workday through 1 week of use. Long-term shutdown consists of more than 1 week. Proper shut down will help maintain equipment in future uses and extend the life of parts and filters. Material can be left in equipment, up to 1 week, before flushing out material with DOP on A-component is required. To avoid flushing lines with DOP at 1-week mark, spray a ½ gallon of material and recap lines.

The following steps are for **Mid Term Shutdown** (end of workday through 1 week):

1. Maintain material temperature at 72F or return material to hot room.
2. Shut off valves to gun and pull trigger to remove excess material.
3. Shut off propotioners.
4. Open recirculation valve to relieve pressure from hose bundle.
5. Lower pumps in the down position. This procedure is called “parking pumps”.
6. Shut off primary heaters.
7. Shut off hose heat.
8. Clean over spray off of gun. Cleaning procedure is gun specific and will differ from gun to gun.

The following are steps for **Long-term shut down** (more than 1 week):

1. Disconnect equipment from drums or totes.
2. Flush lines with DOP on A-component.
3. Cap hose bundle and leave hose bundle filled with DOP on A-component.
4. Cap feed lines and leave filled with DOP on A-component.

WARNING: DO NOT ALLOW CONTAMINATION FROM AIR. MAKE SURE ALL LINES ARE CAPPED IMMEDIATELY.

Cure Time for SL-500

The cure time for SL-500 is approximately 2 minutes. Remember, on colder surfaces, the first coat will take an extra minute or two to setup. All coats after will dry at their normal rate of 2 minutes. Wire tape is best for masking. Remember to remove wire tape at a vertical angle in one quick motion to achieve a clean tapeline.

Tech Data

Storage

SL-500 should be stored in a hot room to maintain temperature range of 90-100F. **(Material should never be stored under 60F.)** Tote blankets can be used for 250-gallon totes. Drum blankets can be used on 55-Gallon drums. Place drums or totes on pallets. **DO NOT ALLOW DRUMS OR TOTES TO REST ON THE FLOOR SURFACE.** It is important to keep desacant filters on both drums or totes, A-side and B-side, to prevent moisture contamination, if using drum or tote sets. Fittings and filters can be purchased from Industrial Polymers. It is important to monitor filters and change when beads turn from blue to pink. This will prevent moisture contamination in material.

Safety

SL-500 is a 100% solid polymer and contains no solvent. However, safety equipment must be worn at all times. This includes fresh air systems, protective clothing, and chemical resistant gloves. Good ventilation is required. It is important to take the proper training courses for respirator fittings to ensure the safest environment for each employee. You will also want to monitor personal exposure levels for isocyanates. For more information, visit www.dodtec.com

Physical Properties

Physical properties of SL-500 cured at ambient temperatures are shown below:

Tensile Strength	1,306 psi.
Tear Strength	573 psi.
Elongation	287%
Hardness	50 Shore D

Clean Up

OVERSPRAY CANNOT BE REMOVED. It is important to mask off all areas that are not being sprayed.

Use soap and water to clean SL-500. (*Do not use bleach or other chemicals*).

Appendix

Surface Preparation

Wood

- Surface must be clean and dry
- Roll on Primer 700 (Dry time 1 hour)
- Spray on SL-500

Concrete

- Surface must be clean and dry
- Roll on Primer 700 (Dry time 1 hour)
- Spray on SL-500

Painted Metal Surfaces

- Surface must be clean and dry
- Sand with nylon cup brush
- Clean with Acetone or MEK (allow to thoroughly dry)
- Spray on SL-500

Galvanized steel or bare metal

- Sand with nylon cup brush
- Clean with Acetone or MEK (allow to thoroughly dry)
- Spray, brush, or roll on Sherwin Williams DTM Wash Primer (Dry time 1 hour)
- Spray on SL-500

Aluminum

- Sand with nylon cup brush
- Clean with Acetone or MEK (allow to thoroughly dry)
- Spray, brush or roll on Sherwin Williams DTM Wash Primer (Dry time 1 hour)
- Spray on SL-500

Fiberglass

- Sand with nylon cup brush
- Clean with Acetone or MEK (allow to thoroughly dry)
- Spray on SL-500