



100% SOLIDS SPRAYABLE POLYURETHANE SERIES APPLICATION GUIDE



Processing 100% solids sprayable Polyurethane requires the use of heated plural component equipment. Our Polyurethane requires heating so both A&B parts have similar viscosities to ensure proper mixing. Refer to product TDS as processing temperature may differ between products, application equipment, and desired finish. Recoat time without additional surface preparation is under 2 hours at 23°C (73°F).

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100% SOLIDS SPRAYABLE POLYURETHANE SERIES

PROCESSING EQUIPMENT

Dual Cartridge dispenser system

- Simple training, minimal investment
- Used for smaller applications, R&D, repair, special locations
- See Normac Youtube video - Processing and Operating Instructions

SFLP-D Processing machine (solvent free low pressure - digital)

- Custom designed by Normac to maximize efficiencies
- Requires certificate training
- Used for small, medium, and large projects

High Pressure application system (Graco)

- Requires training and support from the manufacturer/distributor

Polyurethane Conditioning: It is critical to understand that at no time during heating should the prepolymer (part A) be heated above 88°C (190°F). Excessive heating will reduce material quality quickly, lowering physical properties. Please monitor and record temperatures and times when heating to assure quality.

- Warming methods: microwave, electrical band heater, industrial oven
- Cartridge temps between 50°C to 55°C (120°F to 130°F)
- Processing machine temps Part A 80°C (177°F), Part B 23°C (73°F or room temperature)
- Refer to individual product TDS for processing temperatures
- Part A - No mixing is required
- Part B – Power mix or shake thoroughly to achieve a homogenous mixture
- If resin (Pt A) is highly viscous and has a “frozen” like appearance, slowly warm back to processing temperature. This “unfreezing” can take up to one day at 50°C (120°F) depending on volume
- For more information see *“Heat History during Pre-heating and Processing Polyurethanes”* data sheet

Application Conditions: Ambient and surface temperature should be similar and between 7°C to 45°C (45°F to 113°F). Warming surfaces and surrounding air is a good option when working in colder temperatures. Relative humidity should be below 85% and dew point is maintained 3°C (5°F) above substrate temperature for the duration of the application. Always protect the surface from contaminants and direct sunlight. It is possible to spray at lower temperatures when dewpoint and humidity levels are safe, but expect cure times of all products to lengthen.

Pot life / Working Time: <1 to 2 minutes at 23°C (73°F) at 50% relative humidity. Pot life correlates with temperature, humidity, and mass. The higher the temperature, the larger the mass, the shorter the pot life. Typically, the softer the durometer the longer the pot life.

Demasking: Never leave demasking / trimming until the following day. The first hour of curing is called “the green stage”. At this stage, demasking and final trimming take place as the material has not reached final cross-linking and therefore can be trimmed with minimal force. After 2 hours of cure, demasking will become difficult.

Ultimate Cure Time: This time depends on temperature. The warmer the ambient temperature the faster the material will cure. 80% material cure can be realized after 24 hours at room temperature 23°C (73°F). The final 20% will take 5 days. Post curing parts are not required but can be done at a maximum of 60°C (140°F) for 24 hours to speed up ultimate cure time.

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SAFETY / PPE

- Read and understand the SDS for each product used
- Use respirators including organic vapor cartridges and pre-filters
- Full face mask or respirator with disposable lens covers are recommended
- A supplied clean air system when working in a confined space environment
- Disposable spray suits, gloves, and footwear are recommended

STORAGE / SHELF-LIFE

- Keep all materials in a cool dry place out of direct sunlight
- Storage temperature range of 15°C to 30°C (60°F to 86°F)
- Pay attention to shelf life of 2+ years and rotate stock
- Only open containers as they are required
- Remove atmospheric moisture with dry nitrogen before resealing resin part A

SURFACE PREPARATION WHEN BONDING TO METAL

- Radius all sharp corners to 3 mm (0.120")
- Remove weld spatter and uneven seam lines
- Surface must be clean and dry before blasting
- Follow SSPC SP-10 near white metal blasting standard
- Grit-blasting minimum surface profile 50 to 75 microns (.002" to .003")
- Use grit, not shot – 1 mm to 2 mm size
- Used metal may have to be checked for contamination
- Sweep and vacuum all dust and debris from surfaces
- Remove any oils or grease using suitable cleaning solvents
- For substrates other than metal - ask for technical support

Salt Contaminated Surfaces/Efflorescence: Metal surfaces that have been immersed for any time in salt solutions should first be grit-blasted to remove existing coating. For best results, power wash with hot water using minimum 120°C (248°F) to flush capillary residue. Quickly force dry completely using open propane torch flame to evaporate dissolved salts. Repeat steps until salt contamination has reached a maximum of 15 mg/sqm. Finish by grit-blasting to specification.

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METAL PRIMER APPLICATION

NP-9600 WASH PRIMER FOR IMMERSION SERVICE ONLY

- One thin coat is required, used in conjunction with NP-9500 primer only.
- Applied a minimum 6 hours before topcoating with NP-9500 primer.
- Mix each part well prior to use. It's recommended to scrape the bottom of the "A" side can.
- A two-part system, mixed ratio of 100A to 91B by weight. 1:1 by volume.
- Applied to prepared metal using roller, brush, or spray.
- Dilute using MEK solvent up to 100% depending on application method.
- A DFT of 12.5 microns (0.0005") thickness is required.

NP-9500 PRIMER

- Two coats of NP-9500 are required for all metal applications - 30 minutes between coats.
- PU top-coat window is 6 hours. If you find yourself outside the window, simply re-prime.
- The 2nd coat of primer can be applied at a maximum of 5 days after the 1st coat.
- A two-part system, mixed ratio of 3A to 1B by weight only. Shake both parts well before use.
- Applied by roller, brush, or spray.
- Dilute using MEK solvent up to 50% depending on application method.
- A DFT of 50 microns (0.002") is required.

POLYURETHANE SPRAY TECHNIQUES

- Expect 250 micron (0.010") per wet pass.
- Spray at 90 degrees to the substrate whenever possible.
- Use the theory of "light coats" and many coats.
- While spraying, look for the gloss and move on.
- Cross hatching whenever possible.
- Measure thickness to understand what you are achieving per pass.
- Coat hard to access areas first, before moving to easy open areas.
- Trim any drips or sags prior to the last few coats for best finish appearance.

Recoat and Repair for Polyurethane: Surface preparation for over-coating becomes necessary when more than 2 hours have elapsed, or you wish to adhere to previously coated urethane. NP-9500 primer is used to bond new urethane to previously applied urethane using one coat of 25 micron (0.001") after proper surface preparation has been completed.

Surface Prep Options:

- Grit-blasting using a medium to coarse grit size. Plan to remove the gloss and 50 to 75 micron (.002" to .003") of existing coating.
- Sanding with a slow speed sander at 2000 rpm or less and a 24, 36, 50 grit aluminum oxide sanding disks. Plan to remove the gloss and 50 to 75 micron (.002" to .003") of existing coating.
- Wire brush attachment on a grinder or drill. Use a slow speed under 2000 rpm. Plan to remove the gloss and 50 to 75 micron (.002" to .003") of existing coating.

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TROUBLESHOOTING

SYMPTOM	POTENTIAL CAUSE	POSSIBLE SOLUTIONS
Runs and sags	Excessive thickness per pass	Spray each pass thinner Wait one min to overcoat
Delamination	Exceeding recoat window Off ratio mixing	Recoat window is under two hrs Mix products according to TDS
Blisters	Off ratio mixing Contamination Solvent has not flashed off At dew point water entrapment	Mix products according to TDS Check and clean contaminants Ensure primer is dry Check environment conditions
Uneven surface finish	Material Temperature Air Atomization	Part A 80C (176F), Part B 23C (74F) Adjust for proper atomization

DISCLAIMER

The direction for the use of our products are based upon tests believed to be reliable but no warranty is given. Since conditions for the use of this product are beyond the seller's control, all risks are assumed by the user. Please contact your local agent or call Normac Adhesive Products Inc. (905) 332.6455 for further assistance.



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