

GACOFLEX U-62 PLURAL COMPONENT SPRAY GUIDE

This guide covers handling and plural component airless spray application of GacoFlex U-62 series fast cure polyurethane elastomer coating systems. These systems are two components, 1:1 ratio by volume, liquid applied polyurethane which polymerize through chemical reaction of the mixed components. The cured product is a tough, waterproof and weatherproof elastomeric membrane suitable for a variety of applications.

GacoFlex U-62 series fast cure has all of the physical performance properties of standard batch mix U-62 but is formulated for rapid cure of the mixed components.

GacoFlex U-62 series fast cure has a 90-second pot life and 20 minute set time depending on substrate and temperature. Substantial cure is achieved in two to six hours. These features make plural component airless spray the only practical application method.

Personnel using this product must familiarize themselves with procedures for personal safety, workplace precautions and equipment operation. Refer to Product Data Sheet, Material Safety Data Sheet and General Instructions GW-3-1 and GW-3-3 for product information. Refer to manufacturer's instructions for equipment operation, maintenance and safety.

1. SAFETY EQUIPMENT AND VENTILATION

GacoFlex U-62 fast cure is a one to one ratio by volume two component system in which separate components are mixed together to form the finished product. One component is identified as ISO (isocyanate) component and the other as POLY (polyol) component. Heated spray application of the mixed components creates finely atomized particles and vapor which requires specific procedures to minimize both health and safety risks.

A. Protective Equipment

1. Use supplied air-breathing apparatus with full-face mask or hood during any spray application unless monitoring demonstrates TDI or MDI exposure below OSHA permissible limits.
2. Fabric coverall.
3. Impervious gloves.

B. Indoor Spraying Precautions

1. Isolate the area to be sprayed from the rest of the building.
2. Spray only on well ventilated area. Air exhausted from the spray area must be directed in a manner that prevents return through windows, doors or intake vents.
3. Keep spectators and other non-essential personnel away from spray area.
4. Be sure to take proper precautions to not spray over unprotected energized lighting or electrical outlets. Doing so could be a fire hazard. Electrical wiring and conduit can be sprayed on as long as open energized circuits are protected.

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C. Outdoor Spraying Precautions

1. Rope off the area within 50 to 150 feet (15.24 to 45.72 meters) of spray area depending on wind and weather conditions.
2. Seal off ventilation intakes within the affected area.
3. Use windbreaks, where necessary to confine spray mist and avoid damage to nearby surfaces due to overspray or drift.
4. Keep spectators and other non-essential personnel away from spray area.
5. Be sure to take proper precautions to not spray over unprotected energized lighting or electrical outlets. Doing so could be a fire hazard. Electrical wiring and conduit can be sprayed on as long as open energized circuits are protected.

2. STORAGE AND HANDLING

A. Storage

1. Keep containers closed. Store in a dry place away from heat sparks open flame and moisture.
2. Store material above 40°F (4°C) and below 100°F (38°C).

B. Handling

1. The Iso component will freeze if exposed to temperatures below 40° (4°C) during shipping and storage. Graininess or cloudiness in the Iso indicates frozen material that must be thawed before use. Refer to Product Data Sheet for instructions.
2. Mix each component separately before use to suspend any settled pigment and assure uniform consistency.
3. Thinning is not required when proper procedures are followed. Thinning 2 – 5% generally provides adequate viscosity reduction and the V.O.C.'s will not exceed 50 grams per liter.

3. EQUIPMENT

Plural component airless spray equipment must be capable of metering components within +/- 2% of 1:1 ratio by volume. Because U-62 is 100% solids fast cure coating which requires high material spray pressure, heating components to lower viscosity, and a spray gun. This allows for static mixing action in addition to the impingement mixing action provided by most plural component spray guns. The following equipment parameters have been proven effective. These equipment systems allow for the material pressures, temperatures and flow rates to generate intensive and thorough mixing of the components for optimum physical properties of the applied product.

Airless spray equipment generates very high fluid pressure. Spray equipment must be properly maintained and operated. Any misuse of spray equipment (such as over-pressurizing, modified parts, or worn or damaged parts) can result in serious bodily injury, explosion, or property damage. Read and follow equipment manufacturer's instructions and recommendations.

1. Drum transfer pumps are required to adequately supply the metering pumps. Drum transfer pumps must be 2:1 or 5:1 fluid to air ratio pumps with a minimum 200 psi delivery pressure.
2. Primary material heaters must be capable of heating each component to 170°F to 185°F (77°C to 82°C) at the flow rate generated by the proportioning system. Since the poly side of GacoFlex U-62 is higher in viscosity than the Iso side it may be necessary to set the poly heater at least 20°F (12 °C) higher to achieve hose pressures within acceptable limits.
3. Heated Airless spray hoses must be employed to maintain temperature developed by the primary heaters and deliver adequately heated material to the spray gun. Follow the equipment manufacturer's recommendations on maximum hose length possible while supplying adequate operating pressure at the gun. Increasing the hose length and/or raising the spray gun high above the proportioning pump, i.e., spraying on a high building with the unit at ground level will reduce the operating pressure at the gun.
4. Solvent pump and airless spray hose is required to flush mixed material from the spray gun chamber and accessory static mixer. Pump must be capable of 1000 psi and ½ gallon per minute delivery rate. All wetted parts must be solvent resistant.

- 5 The Graco Fusion Solvent Purge Plural Component Gun with static mixer is the recommended spray gun. The static mixer should be 10 to 14 inches in length with 24 to 30 mixing elements. Good results have been found with static mixers from TAH (ph. 602-259-9222) part numbers: stainless steel tube = 085-330 or 085-324, replacement static mixers require one of each = 121-412 and 121-418.
- 6 Spray tip will determine the volume and spray pattern of the applied material. Choose a tip appropriate for the nature of the project.
- 7 Proportioning systems are available from several manufacturers. In addition, hybrid systems are offered by various equipment distributors. The following recommendations are examples of appropriate equipment systems.

	Model	Maximum Rated Pressure	Heat Rating	Maximum Hose Length	GPM
Graco Reactor	EXP 2	3500	15,300 watts	310	2
Graco Reactor	HXP2	3500	15,300 watts	310	1.5
Graco Reactor	HXP3	3500	15,300 watts	310	3

4. EQUIPMENT OPERATION

After the equipment system is assembled and its proper operation verified, fill the system with product.

Note; if using a system that has had other chemical products in it, verify component compatibility with GacoFlex U-62 components before filling equipment. Many chemical systems have polyol and iso components. It is common for plural component application systems to have a dedicated and identified iso side and a dedicated and identified poly side. Do not cross contaminate equipment supply. Always identify components with proper supply feed; do not rely on letters or numbers since they may be misleading. In some cases it may be necessary to solvent clean system to assure effective results.

- A. Solvent flush-Fill solvent flush pump with GacoFlex T-5135, or other compatible thinner. With spray gun attached but no spray tip, fill solvent hose to the spray gun and set pressure to 1000 psi.
- B. Equipment heat-Application temperature is nominally 170°F to 185°F (77°C to 82°C) for both components. Set primary material heaters and hose heat controls accordingly. Since the poly side of GacoFlex U-62 is higher in viscosity than the Iso side it may be necessary to set the poly heater at least 20°F (12°C) higher to achieve hose pressures within acceptable limits. Preheating the material to 100°F (38°C) may be necessary for application.
- C. Static pressure- Static or stall pressure is generally set to 2700 psi. Short lengths of spray hose will allow a reduction of stall pressure while long hose lengths or spraying at elevations considerably above equipment level may require higher stall pressure.
- D. Spray pressure- Spray pressure is the dynamic pressure as measured while the spray trigger is open and material is being applied. Spray pressure registered at the proportioning pumps will be 2200 to 2500 psi. Do to variables in component chemistry and equipment operation it is possible that there will be a difference in pressure readings between iso and poly components. A difference of up to 200 psi is allowable and is not a sign of equipment malfunction. In the event that the pressure differences is not below 200 psi, check and clean all gun filters and low pressure filters. If the pressure difference is still not below 200 psi, the mix modules in the gun may need to be adjusted. Because the poly side is higher in viscosity than the iso side, drilling slightly larger holes in the poly side of the mix module has provided satisfactory results. For example: if the module in the Fusion gun is a XF3535 with two .024 inch holes for both poly and iso, drilling the poly holes to .029 may equalize the pressures. Increase the hole size slowly until acceptable pressures are achieved. For assistance please call Gaco Western or your local equipment representative.

- E. Spray gun- Satisfactory results are obtained with the Fusion Solvent Purge Plural Component Gun with static mixers from TAH. Other static mixers may be suitable as long as they are compatible with the spray gun and demonstrate adequate mixing. Any self-cleaning airless spray tip may be used depending on the spray pattern and delivery volume desired.
- F. Inline filters-Plural component spray systems commonly have one or more filters for both Iso and poly components. Filters may be low pressure on the feed side or high pressure on the spray side of the system or a combination of both. Check and clean filters daily. Filter screens should be 30 mesh.
- G. Dry air or nitrogen purge-If the contents of a container are not to be used within one day's time, it is advised that dry air or nitrogen gas be used to blanket the iso component container to eliminate product skinning.

5. APPLICATION TECHNIQUE

GacoFlex U-62 is applied by airless spray to desired thickness in overlapping passes. The fast cure and zero VOC features of this product allow unlimited application thickness on smooth, flat surfaces. On vertical or rough surfaces, apply two or more passes allowing three to ten minutes between passes. Maximum recoat is limited to 72 hours without additional preparation and tie coat primer. When multiple coats are required to fulfill project specifications it is appropriate to use different colors or basecoat/topcoats for visual verification of coverage. For additional information refer to the product data sheet.

When specified, GacoShell granules for decking applications and roofing granules for roof application should be applied using a granule blower or hand broadcasting within two to five minutes of texture coating application. For decking application, GacoShell granules are best top coated by spraying from two or more opposing directions to completely encapsulate the granules. Care must be exercised to apply a uniform topcoat at the specified coverage without filling the non-slip texture or creating lap line or "shiners". (Note: A slower curing topcoat may be used to allow for back rolling topcoat when desired).