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Spray Guide:

SG-U6006
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Supersedes 06/06

GACOFLEX U-6006 SPRAY GUIDE

This guide covers handling and airless spray application of **GacoFlex U-6006** single component, moisture-cured polyurethane elastomeric coating. This GacoFlex product polymerizes through chemical reaction with air borne moisture yielding tough, waterproof, weather-resistant elastomeric films. Airless spray is an effective method of application particularly on large areas and irregular or vertical surfaces. Air-atomized application is not recommended.

Personnel using this product should 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-3-2 for product information. Refer to manufacturer's instructions for spray equipment operation, maintenance and safety.

1. SAFETY EQUIPMENT AND VENTILATION

GacoFlex U-6006 contains flammable solvent and toluene diisocyanate prepolymer [TDI]. Spray application creates finely atomized particles and vapors which dictate specific procedures to minimize health and safety risks.

Protective Equipment

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

Indoor Spraying Precautions

1. Isolate the area to be sprayed from the rest of structure.
2. GacoFlex U-6006 contains flammable solvents, which evaporate into the air during application and cure cycle. Follow Gaco Western Fire and Explosion Prevention instructions found in GW-3-1.
3. Spray only in well ventilated areas. Explosion-proof equipment, capable of keeping vapor concentration below the LEL, must be used. The environment must be monitored to assure compliance. Air from spray area must be exhausted outdoors in a manner that prevents return through windows, doors or intake vents.
4. Keep spectators and other 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.

Outdoor Spraying Precautions

1. Rope off the area within 150 feet (45.72 meters) of spray area.
2. Seal off ventilation intakes within the affected area.
3. Use windbreaks where necessary to confine spray mist and avoid damage to nearby surfaces, such as cars, due to overspray or drift.
4. Keep spectators and 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,cool place away from heat, sparks, open flame and moisture.
2. For cold weather application, keep material stored above 65°F (18°C).
3. Open containers should be blanketed with dry nitrogen before resealing, to prevent product from skinning.

B. Mixing

1. Settling or separation may occur from storage.
2. Mix material before using to assure uniform consistency. Use folding blade-type mixer for closed head drums.
3. Ground container and equipment to prevent accumulation of static charge.
4. Place a small amount of GacoFlex thinner on top of mixed material to prevent formation of "skin."

C. Thinning

1. Thinning GacoFlex U-6006 is not required when proper application conditions exist and adequate equipment is used.
2. GacoFlex T-5130 Thinner is recommended to clean equipment. Use only thinner supplied by Gaco Western. Other thinners may contain alcohol or other contaminants, which will adversely affect coating characteristics, resulting in decreased physical properties and weather resistance, or potential damage to spray equipment.

3. SPRAY EQUIPMENT

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

A. Airless spray pump must have minimum 3,000 psi output pressure rating and adequate delivery volume to support the spray tip orifice gallons per minute (gpm) rating. High-pressure airless sprayers with a higher maximum pressure capability will allow spray application in cold weather or using spray hose lengths greater than 250 feet (76.20 meters).

Graco High Pressure Air Powered Airless Xtreme NXT Sprayers:

Part #	Ratio	Rated PSI	GPM
X30DH3	30 TO 1	3,000	3.4
X45DH3	45 TO 1	4550	4.6
X70DH3	70 TO 1	7250	2.9

Graco Gas Powered Airless Sprayers:

Part #	Name	Rated PSI	GPM
249617	GH 833	4,000	4
230975	GH733	3,500	3

Graco Electric Airless Sprayers:

Part #	Name	Rated PSI	GPM
249659	Ultra Max II 1595	3300	1.25

Airless sprayers not listed have not been evaluated. The preceding information can be used as a reference for assembling an alternative equipment system.

B. Sprayer supply must be direct immersed pump, large diameter suction tube and hose, or drum transfer pump.

1. Direct immersion is practical for limited quantities supplied in 5 gallon (18.92 L) pails.
2. Suction supply directly from pails or drums is sufficient when 1½-inch (3.81cm) diameter or larger tube and hose in short lengths are used. Limit hose length to 8 feet (2.44 meters) or less.
3. Transfer pump is preferred to assure positive supply of coating to the airless pump. A 2:1 or 5:1 fluid to air ratio transfer pump of divorced design will supply coating from drums without cavitation and resulting premature pump packing wear. Limit feed pressure to 400 psi.

C. Airless spray hose must be grounded nylon tube paint hose, rated for use at maximum pressure produced by the spray pump. Use only electrically grounded hose designed for paint and solvent. Never exceed maximum working pressure of hose or fittings.

1. The larger the hose diameter, the less pressure drop will occur between the airless pump and spray gun. There is 2.5 times less pressure drop with ½-inch (1.27 cm) i.d. hose, compared to $^{3}/_{8}$-inch (0.95 cm) i.d. hose.
2. $^{3}/_{8}$-inch (0.95 cm) paint hose should be limited to 150 feet (45.72 meters) total length and ½-inch (1.27 cm) paint hose limited to 250 feet (76.20 meters) total length.
3. A whip hose, 3 feet (0.91 meters), or 6 feet (1.82 meters) in length, and gun swivel are recommended to control spray and reduce operator fatigue.

D. Spray tip selection is based upon the material delivery volume and spray pattern desired. The orifice size of a spray tip determines material delivery volume. The fan width of a spray tip determines the pattern size.

Tip Sizes and Flow Rates

	Orifice Size							
Fan Width	(in.)	(mm)	.027	.029	.031	.033	.035	.039
	6–8	(152–203)	327		331			
	8–10	(203–254)	427	429		433	435	439
	10–12	(254–305)	527	529	531	533	535	
	12–14	(305–356)	627	629	631	633	635	
Flow rate (gpm)			.77	.90	1.03	1.17	1.31	1.63
Flow rate (l/min.)			2.96	3.42	3.90	4.42	4.98	6.18

E. Filter screen size

1. Filter screen should be 30 mesh or larger.

F. Spray application rate for GacoFlex U-6006 is typically from one to one and one half gallons per 100 square feet per coat (3.78 to 5.68 L / 9.3 m^2), or 16 to 24 wet mils (.41 to .61 mm) per coat. A .031-inch to .039-inch orifice tip with a 40-degree fan width is recommended. This will provide for good production rates and optimum control.

1. Select a spray tip that is within the performance capacity of the airless spray pump. The larger the spray tip, the greater the pressure drop. Long hose length and cold material will decrease material delivery volume and fluid pressure at the spray tip.
2. If the spray pattern has fingers or pulsates, change spray tips to reduce the size of the spray orifice. This will decrease material delivery volume and increase pressure.
3. Manifold filter assembly may be used reduce tip plugging especially when using smaller size tips. Clean filter screen on a regular basis.

4. APPLICATION

A. Climatic conditions

1. Rain, fog, dew, frost, relative humidity above 90%, will react adversely, affecting adhesion and physical properties of coating. Do not apply if any of these conditions exist or will exist within five hours of application. The substrate must be dry at the time of application.
2. At temperatures below 60° F (16°C) store and maintain material temperature above 65° F (18°C) in the container. Spray application is not recommended below 50°F (10°C).
3. At temperatures above 80°F (27°C) reduce the application rate on vertical or irregular surfaces to prevent sags or runs. Do not apply at temperatures above 100°F (38ºC).

B. Spraying Technique

1. Hold the spray gun perpendicular to the surface at a distance of 18 to 24 inches (45.72 to 60.96 centimeters). While triggering the spray gun, move it at a rate to produce the desired coating wet mil thickness without thin spots or “holidays”. Spray technique should include a ‘half lap” technique where each spray pass is overlapped 50% for uniform coverage. Check applied film thickness using a wet mil gauge.
2. Use the lowest fluid pressure which will provide a uniform spray pattern without fingering. When greater material coverage is desired, use a larger spray tip orifice size instead of increasing pressure. Too high of a pressure could cause excessive overspray.
3. Allow a minimum of 12 hours cure time between coats for cure and solvent evaporation.

C. Clean-up

1. Clean airless spray equipment with GacoFlex T-5130 thinner. Recirculate thinner through pump supply, airless spray pump and spray hose to remove residual coating. Flush with clean T-5130 thinner.
2. Do not leave GacoFlex U-6006 in airless spray system overnight. Under certain conditions it is possible for these coatings to jell or harden inside the equipment.
3. For long-term storage, a final flush with mineral spirits is recommended.
4. Troubleshooting information presented here is specifically for GacoFlex U-6006. Product Data sheets and equipment manufacturer’s operation manual should be referred to for additional information.

Condition	**Areas to Check**	**Corrective Action**
Poor spray pattern	Too large or worn spray tip Low fluid pressure Cold material	Replace with new or smaller tip Increase pump pressure Warm to above 65°F (18°C).
Pulsating spray pattern	Too large or worn spray tip Inadequate material supply Spray pump ball check obstructed Inadequate compressed air	Replace with new or smaller tip Check suction hose/transfer pump Check and clear Provide more air or use smaller tip
Sags/runs on vertical	Too much material per coat	Reduce application rate per coat (more coats may be required)
Runs off high on spray foam	Material or substrate too warm	Reduce application rate or wait for cooler conditions
Foamy or pinholed coating	Wet substrate High humidity Rain/dew on uncured applied coat Too hot substrate--- above solvent boiling point	Wait for surface to dry Wait for acceptable conditions Wait for acceptable conditions Wait for acceptable conditions