



## Acrylics (210, 211, 211HT, and 212)

This guide covers handling and airless spray application of American WeatherStar water-borne single component acrylic elastomeric coatings. These American WeatherStar products require only complete evaporation of water to achieve cure. They are used in a variety of applications to create tough, waterproof, weather-resistant elastomeric films. Airless spray is an effective method of application particularly on large areas and irregular or vertical surfaces.

Personnel using these products should familiarize themselves with procedures for personal safety, workplace precautions, and equipment operation. Refer to Product Data Sheet, Safety Data Sheet and General Instructions for product information. Refer to manufacturer's instructions for spray equipment operation, maintenance and safety.

### SAFETY EQUIPMENT AND VENTILATION

Spray application creates finely atomized particles and vapors which dictate specific procedures to minimize health and safety risks.

#### Protective Equipment

1. NIOSH approved liquid particulate filter mask
2. Fabric coveralls
3. Gloves
4. Safety goggles or face shield

#### Indoor Spraying Precautions

1. Isolate the area to be sprayed from the rest of structure. Spray only in well ventilated areas. Air from spray area must be exhausted outdoors in a manner that prevents return through windows, doors or intake vents.
2. Keep spectators and other personnel away from spray area.
3. 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 of spray area.
2. Seal off ventilation intakes within 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.



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### STORAGE AND HANDLING

#### Storage

1. Keep containers closed.
2. Store in a dry, cool place.
3. Protect from freezing (33°F).
4. For cold weather application, keep material stored above 65°F.

#### Mixing

1. Settling or separation may occur upon storage.
2. Mix material before using to assure uniform consistency.
3. Place a small amount of clean water on top of mixed material to prevent formation of "skin."

#### Thinning

1. Thinning is not required or recommended.

### 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 2,700 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.

#### Graco Electric Airless Sprayers:

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

#### Graco Gas Powered Airless Sprayers Convertible:

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

#### Graco Gas Powered Airless Sprayers Convertible:

Part #	Name	Rated PSI	GPM
248692	GMAX II 5900	3300	1.6

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



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- 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 pails.
  - 2. Suction supply directly from pails or drums is sufficient when 1½-inch (3.81 cm) diameter or larger tube and hose in short lengths are used. Limit hose length to 8 feet or less.
- 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 i.d. hose, compared to 3/8-inch i.d. hose.]
  - 2. 3/8-inch paint hose should be limited to 150 feet total length and ½-inch paint hose limited to 250 feet total length.
  - 3. A whip hose, 3 feet, or 6 feet 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.)	.027	.029	.031	.033	.035	.039	.043
6-8	327		331				
8-10	427	429		433	435	439	443
10-12	527	529	531	533	535		543
12-14	627	629	631	633	635		
Flow rate (gpm)	.77	.90	1.03	1.17	1.31	1.63	1.63

- E. Filter Screen Size
  - 1. Filter screens should be 30 mesh or larger.
- F. Spray application rate is typically from 1 to 1 1/2 gallons per 100 square feet per coat, or 16 to 24 wet mils per coat. A .027-inch to .035-inch orifice tip with a 40 degree fan pattern. Specific tip size will depend on nature of each particular application.
  - 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. 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.



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### APPLICATION

#### Climatic conditions

1. Fog, dew, or relative humidity above 90%, will inhibit water evaporation and film formation of these products. Do not apply if any of these conditions exist or will exist within twelve hours of application. The substrate must be dry at the time of application.
2. These products require complete evaporation of water to achieve cure. Rain falling on wet coating may result in wash off of coating.
3. At temperatures below 60°F a gray base coat will assist in drying time. Thinner passes with multiple applications will also help to reduce risk of wash off. Store and maintain material temperature above 65°F in the container. Spray application is not recommended below 50°F.
4. At temperatures above 100°F, it may be necessary to reduce application rate per coat.

#### Spraying Technique

1. Hold the spray gun perpendicular to the surface at a distance of 18 to 24 inches. 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.
3. Allow a minimum of 12-24 hours cure time between coats for cure and water evaporation.

#### Clean-up

1. Clean airless spray equipment with clean water. Liquid detergent may be added to the water for increased effectiveness. Recirculate through pump supply, airless spray pump and spray hose for five minutes to remove residual coating.
2. When applying by spray in hot weather, do not leave acrylic coatings 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 intended as a quick reference. 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	<ul style="list-style-type: none"> <li>• Too large or worn spray tip</li> <li>• Low fluid pressure</li> <li>• Cold material</li> </ul>	<ul style="list-style-type: none"> <li>• Replace with new or smaller tip</li> <li>• Increase pump pressure</li> <li>• Warm to above 65°F (18°C)</li> </ul>
Pulsating spray pattern	<ul style="list-style-type: none"> <li>• Too large or worn spray tip</li> <li>• Inadequate material supply</li> <li>• Spray pump ball check obstructed</li> <li>• Inadequate compressed air</li> </ul>	<ul style="list-style-type: none"> <li>• Replace with new or smaller tip</li> <li>• Check suction hose/transfer pump</li> <li>• Check and clear</li> <li>• Provide more air or use smaller tip</li> </ul>
Sags/runs on vertical	Too much material per coat	Reduce application rate per coat (more coats may be required)
Cracks or crazing in coating	Too hot substrate	Reduce application rate or wait for cooler conditions