

# GUIDE FOR SELECTING COATING SPRAY EQUIPMENT

By William A. Kirn, RRC  
Technical Director  
National Coatings Corporation

## SPRAY EQUIPMENT OVERVIEW

While roof and wall coatings can be applied via roller, brush, squeegee or spray, the most cost efficient way (especially for large jobs) is the airless spray. Using this method, the coating is pumped from the container to a pump where it is pressurized to several thousand pounds per square inch (psi). The coating is then sprayed through a gun with a small orifice, or tip (usually 0.025- 0.040 inches). The coating comes out of the tip at very high pressure and when it is exposed to the atmospheric pressure it disperses into discreet droplets

Typically airless spray units are characterized by their spray rate, listed as gallons per minute (gpm), and their pressure. The number of spray guns that can be operated from the same unit are often listed also. Larger units will allow for longer hose runs. This can be helpful on large roof jobs where the coating and the airless spray unit can be kept on the ground and only the hose and gun are actually on the roof.

When deciding if an airless spray unit should be powered by either an electric motor or gasoline engine, consider the following: A gasoline airless sprayer is fully self contained. In contrast, an electric motor, although less prone to the complexities associated with a gasoline engine, may require a very long extension cord. There is an appreciable electrical current drop when using a long extension cord, and this can adversely affect the motor's efficiency.

If the airless spray unit has a filter, this should be removed. While the filter is needed for applying fine finishes and enamels, it merely increases the "back pressure" on the unit and lowers coating throughput.

There have been recent innovations in airless sprayers for home painting use, making them more affordable for the "do-it-yourselfer". However, these typically have low volume and pressure, making them inefficient for applying coatings.

## SPRAYING ACRYLIC COATINGS

Using the airless spray method, pressurized acrylic coating comes out of the gun at atmospheric pressure. The pressure reduction then causes the coating to atomize into small discrete droplets. The main benefit of using this method is that any entrapped air is released.

For successful acrylic coating application, the equipment should have a delivery rate of 1.5 gpm, and the pressure should be at least 3,000 psi. A "Reverse-A-Clean" tip with a minimum tip size of 0.033 inches is recommended. However, The tip size can be increased to 0.045 inches for greater throughput. **Note: Always size the tip to the pump output.**

## SPRAYING ASPHALT EMULSION COATINGS

Much larger volume equipment is recommended for the application of asphalt emulsion coatings. These emulsions are typically applied, with or without scrim or strand reinforcement, at a much higher rate than acrylic coatings. Sometimes as high as 5 gallons per Square (100 ft<sup>2</sup>), per coat. In this case, the asphalt emulsion acts as the primary waterproofing, and this high film thickness can build slope and fill in alligator cracks and cover gravel ballast.

Because of the high throughput volume required for the application of the asphalt emulsion; the emulsion isn't sprayed, but rather fluid applied. While the acrylic coating airless spray is fully atomized into discrete droplets, the asphalt emulsion streams out in a flat, fan shaped array. To achieve this, the largest tip size should be used, sometimes as large as 3/16 inches.

For successful asphalt emulsion application, the equipment should have a delivery rate of at least 3-4 gpm, and up to 15 gpm. Pressure should be at least 1,000 psi. The tip size should be at least 0.035 inches. **Note: Always size the tip to the pump output.**

### **SPRAY EQUIPMENT RECOMMENDATIONS**

Graco, a leading airless spray equipment manufacturer, offers a number of units that have proven to be very reliable for the spray application of acrylic coatings and asphalt emulsions. Below are a few recommendations:

For applying acrylic coatings, the HydraMax 350 is designed to supply coating at 4000 psi at a delivery rate of 3.5 gpm. The GMax 7900 is a smaller spray unit that supplies coating at 3300 psi at a rate of 2.1 gpm

For applying asphalt emulsions the GH1015 is designed to supply coating at 1000 psi at a delivery rate of 15 gpm, and the GH 2075 supplies coating at 1800 psi at a rate of 7.5 gpm.

For an excellent "all around" unit that can be used for applying both acrylic coatings and asphalt emulsions, the GH733 is designed to supply coating at 3500 psi at a delivery rate of 3.0 gpm. Adding a GH2560 Pump Lower to this unit will allow it to supply coating at 2400 psi at a rate of 6.0 gpm. This unit also allows you to run longer hose lengths, use larger tip sizes and multiple guns.



### **NATIONAL COATINGS CORPORATION**

1201 Calle Suerte, Camarillo, California 93012

(800) 423-9557 FAX (800) 294-3866

[www.nationalcoatings.com](http://www.nationalcoatings.com)

[info@nationalcoatings.com](mailto:info@nationalcoatings.com)