

Conklin Company Inc. TECHNICAL BULLETIN

B-11-18-70

Airless Spray Application Recommendations

Tip Size

Choosing the right tip is extremely important for maximum productivity because the tip determines the fluid flow and size of the spray pattern - fan size. Using the right tip results in maximum control and minimum overspray, this means faster work and less coating usage, which ultimately means finishing the job quickly without wasting coating?

To choose the right spray tip, you need to consider several factors, such as the material thickness, the sprayer's maximum flow rate and the best fan size for the job. Knowing when a tip is worn and why to replace it are also important.
(See table #1)

How thick is the material?

It's easy to determine which tip size to use when you know the type of material you'll be spraying. Lower viscosity (thinner) materials, such as stain or lacquer, require a spray tip with a smaller orifice or hole size. Heavier materials, like latex, require a tip with a larger orifice. Extremely heavy materials like elastomeric coatings and block filler might require spray tips larger than .035.

What is the sprayer's maximum flow rate?

For optimum performance, the sprayer must have a maximum flow rate higher than the flow rate of the tip, so be sure the flow rate of the tip is less than the maximum flow rate. Conklin recommends the use of a spray tip with a lower flow rate because as the tip wears, the orifice becomes larger, and the flow rate increases

What is the difference between air and airless sprayers?

Portability

Air sprayers are different from airless primarily because they have to be connected to an air supply, which usually means a bulky, expensive air compressor. This connection makes your portability equal to the portability of your air compressor or lengths of high-pressure air hoses. Airless sprayers use pressured streams of coating, paint or stain that do not rely on air flow to force the material out of the sprayer, making them extremely portable. Some models pump directly from the can, which makes them more portable than a typical air sprayer, however, some airless models actually pump from a container of paint attached to the sprayer itself, allowing the sprayer to go anywhere.



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Commercial Roofing System Identification

Paint Finish

When using an air sprayer, a stream of air is forced through the sprayer that pushes the paint out of the sprayer nozzle. This forms a low-pressure spray that is easy to layer but can possibly mix with air and cause paint bubbles or other blemishes in the paint finish. Airless sprayers eliminate the chance of air mixing with paint or sealant and provide a smoother, bolder finish than their counterparts. However, the high-pressure nature of airless sprayers mean that some practice is required to get a proper layering and spraying rhythm to ensure that the paint or coating job does not look uneven or wavy.

Pressure

The difference in pressure between air and airless sprayers is immense. An air sprayer can only build up to the pressure capabilities of the attached compressor, which generally is within safe operating psi range (psi is a measure of pressure: pounds per square inch). This range is usually safe for breakables like sliding, glass, thin metals and even human skin. Airless sprayers operate by forcing high-pressure paint through a thin nozzle opening that can multiply psi to an unsafe level. The high pressures of an airless sprayer can break glass, knock holes in siding, bend thinner metals and even inject paint into and under human skin.

Table #1

Recommended Tip Sizes for Common Coatings	
Material	Tip Size (in)
Stain or Lacquer	.011 to .013
Oil base paint	.013 to .015
Latex Paint	.015 to .019
Heavy Latex & Smooth Elastomeric and Block Filler	.021 to .025
Elastomeric and Block Filler	.025 to .035

Please Note:

Due to the viscosity of Conklin Company Inc. roof coatings, an airless spray unit that uses high pressure and has a GPM flow rate of not less than 2+ is required. (See table #2)



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Table #2

Conklin Product	Tip Size min./max.	Tip Pressure (psi) min./max	Recommended GPM Flow	Hose Diameter (in)
Primers				
Encase Metal Primer	.015/.021	2500-5000	1/3+	3/8 - 1/2
Prime Time	.015/.021	2500-5000	1+	3/8 - 1/2
Tack Coat	.015/.021	2500-3000	1/3+	1/4
Urethane Roof Coatings				
Affinity Top Coat	.035/.055	4000-5000	2+	1/2,3/4
Affinity Top and Base require the use of moisture lock hoses rated for 7,250 psi, do not use in same equipment that is used for acrylics.				
Affinity Base Coat	.035/.055	4000-5000	2+	1/2,3/4
Affinity Primer	.013-.017	2500-5000	1/3+	1/4
Roof Coatings				
Rapid Roof HV	.025/.055	3000-5000	2+	3/8, 1/2, 3/4
Rapid Roof III	.025/.055	3000-5000	2+	3/8, 1/2, 3/4
Benchmark	.025/.055	3000-5000	2+	3/8, 1/2, 3/4
PUMA XL	.021/.040	3000-5000	2+	3/8, 1/2, 3/4

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