

Choosing the Right Tip



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

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.

So the next time you're selecting spray tips, consider these questions:

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 and blockfiller 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 of your sprayer. Why use a tip with a **lower** flow rate? Because as the tip wears, the orifice becomes larger, and the flow rate increases.

Tip flow rates are listed in the Tip Charts in this insert.

What is the best fan size for the job?

Fan size – the width of the spray pattern – determines the area covered with each pass.

For a given tip orifice, a wider fan delivers a thinner coat, less defined spray pattern, more overspray, and faster coverage on broad, open surfaces. A narrower fan delivers a thicker coat, more defined spray pattern, less overspray, and better control when spraying small or confined surfaces.

To maximize productivity and lower labor costs, choose a tip with the right fan size. In general, a larger fan size increases production with less control, and a smaller fan size decreases production with more control.

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 and Smooth Elastomeric	.021 to .025
Elastomeric and Block Filler	.025 to .035+

MAKE SURE TIP AND SPRAYER ARE RATED FOR EACH OTHER

Suppose your sprayer has a flow rate of 0.38 gpm (1.4 lpm), and you want to spray latex paint with a 0.017 in. (0.43 mm) tip. The Tip Charts in this insert show that the 0.017 tip has a flow rate of 0.31 gpm (1.17 lpm).

The Verdict? You can use the 0.017 tip, because it has a flow rate lower than the maximum flow rate of your sprayer.

ORIFICE SIZE ALONE DETERMINES FLOW RATE OF TIP

Tips 286415 and 286515 have a 0.24 gpm (0.9 lpm) flow rate with different fan sizes. Tip 286415 sprays an 8 in. (203 mm) fan with a thicker coat (more mil build), and tip 286515 sprays a 10 in. (254 mm) fan with less mil build.

Do not try to increase the area covered with each pass by backing the gun away from the surface. From farther away, less paint will reach the surface and go to waste as overspray.

The Solution? Use a tip with a larger fan and orifice. Remember, if you use a tip with a larger fan but not a larger orifice, the mil build will be less, and you'll have to move the gun slower.

Can You Afford the High Cost of Using a Worn Tip?

Choosing the right spray tip is essential for a quality finish no matter what material is being sprayed, but tips wear with normal use. It's impossible to say how long a tip will last, because there is a huge difference in abrasiveness from one coating to another. For example, latex paints are usually more abrasive than lacquers or alkyd enamels. There's even a wide variation in the abrasiveness of latex paints from one manufacturer to another. And because paint is sprayed at different pressures, some tips will wear faster than others. Abrasive material sprayed at too high a pressure or through too small a tip causes faster tip wear, which wastes time and paint. See **Expensive Decision**, at right.

How do You Determine if a Tip is Worn?

When a spray tip wears, the orifice gets bigger and rounder, which makes the fan pattern smaller. When the fan has lost 25% of its original size, it is time to replace the tip. When a tip with a 12 in. (305 mm) fan wears down to a 9 in. (230 mm) fan, it outputs 30% more paint on 25% less area. Continuing to spray with a worn tip produces the following results: Painting takes longer, more paint gets used, and the finish may be uneven and have runs.

Five Ways to Extend Tip Life:

1. Spray at the lowest pressure that atomizes the material.
2. Strain the material before you spray it.
3. Use the correct size filters.
4. Clean the filters after every use.
5. Clean the tip with a soft-bristled brush.

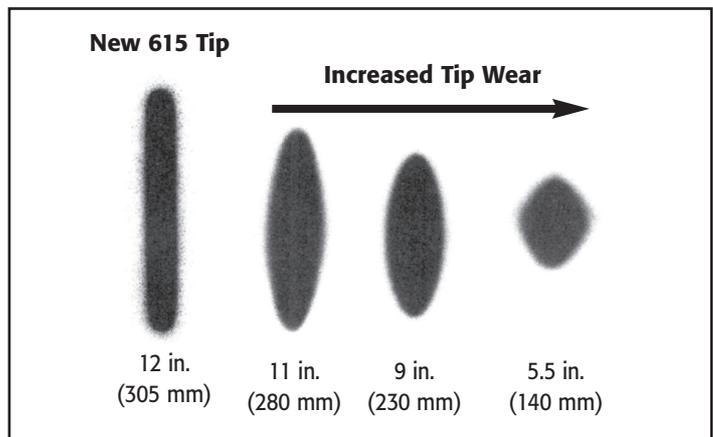
EXPENSIVE DECISION

A contractor spraying with a worn tip uses, on average, 20% more paint and 20% more labor.

Consider this:

Assuming paint is \$10 per gal. (\$2.64 per L), consumption is 5 gal. (19 L) per hour, and labor is \$18 per hour, the total cost is \$68 per hour.

But if the contractor sprays with a worn tip? Labor efficiency would decrease by 20% while paint consumption would increase to 6 gallons (22.7 L) per hour, which would increase the hourly cost to \$81.60. The total cost increase would be \$108.80 per 8-hour shift!



A TIP ON TIPS

A rule of thumb: Use smaller orifice sizes to spray lower viscosity materials such as stains and lacquers. Use larger orifice sizes for heavier viscosity coatings such as latex or oil-base paints.