

Business Issues

The non-flammability feature of waterborne has several financial benefits. Insurance rates may be lowered not only because of the elimination of highly flammable solvents, but also because the lower VOC's decrease potential health liability.



Waterborne coatings eliminate or reduced the need for flammable storage rooms and cabinets. Zoning and permitting can also be easier to obtain plus there are reduced regulatory compliance issues. Many localities place a restriction on the amount of flammable liquids that can be stored on site; there are usually no restrictions for waterbornes.



While waterborne finishes may have a higher cost per gallon they usually have a high solids by volume content and may actually reduce the amount of material needed to complete a job. This is particularly true if you use precatalyzed lacquers. Consider also the elimination of solvents necessary for clean up and their disposal fees, which can often cost twice the original cost of the solvent itself.

Many waterborne finishes can qualify for LEED's and Green Projects which can put you ahead of the competition. There is also the potential marketing aspect of being part of the green movement.

Most importantly a safer healthier workplace is the largest benefit by far. The improved air quality may lead to higher production rates and improved employee morale.

Aside from the increase in material costs waterbornes can have some increased labor costs as well. There is often an increase in production time compared to solvent based finishes and is often weather related. They can include:

- More coats
- More material handling - more cycles through the booth
- More sanding
- Seasonally slower dry times
- May require more heat in cold months
- Waterbornes can be harder to sand which will increase sanding times
- Longer equipment clean up times.
- In general, the waterborne coatings are more sensitive to changes or operator error than the solvent based coatings.

Material Coverage per Square Foot per Coat

Use this chart to calculate coating coverage.

Coverage per coat - Large Flat Panels

TE - Transfer Efficiency	3 mils wet	5 mils wet
100% (Brush)	534 sq ft.	320 sq ft.
80% (Air Assisted Airless)	428 sq ft.	257 sq ft.
65% (HVLP)	348 sq ft.	208 sq ft.
40% (Conventional)	214 sq ft.	128 sq ft.

Things to Consider when Using this Chart

- Transfer efficiency is not only a function of the spraygun, but also the type of part being sprayed and the application technique of the finisher.
- The application technique of the finisher has a greater effect on the Transfer Efficiency than either the type of spraygun or the type of part being sprayed.
- You will get less coverage on mouldings or parts that you have to spray edges than you will on the faces of large flat panels.
- Lower solids (often less expensive) materials or lighter coats may take more coats to achieve a desired dry film build.
- Labor is always more expensive than material.

Square Foot Cost of Coatings

This chart will help calculate you cost of material per square foot per coat. It can be used for both waterborne and solvent based finishes. The two tables show both a 3 and a 5 wet mil application. A 3 wet mil application rate which is typical for waterbased finishes which are usually applied in a lighter coat.

I have highlighted the 65% TE (**Transfer Efficiency**) which is typical for most HVLP and Reduced Pressure sprayguns. 40% TE is typical of conventional guns and 80% is for Air Assisted Airless equipment.

Simply go across the row that is closest to the price per gallon that you pay to where it intersects with the TE column of your spray gun and that is your cost of material per square foot per coat. Multiply that number by the number of coats that you will apply and you will have your cost of material per square foot.

Finish is applied at 3 wet mils

	80% TE	65% TE	40% TE
\$ PER GALLON	SQ FT COST PER COAT	SQ FT COST PER COAT	SQ FT COST PER COAT
\$10	\$0.02	\$0.03	\$0.05
\$12	\$0.03	\$0.035	\$0.06
\$15	\$0.04	\$0.04	\$0.07
\$18	\$0.045	\$0.05	\$0.08
\$20	\$0.05	\$0.06	\$0.09
\$23	\$0.055	\$0.07	\$0.11
\$25	\$0.06	\$0.075	\$0.12
\$28	\$0.07	\$0.08	\$0.13
\$30	\$0.075	\$0.09	\$0.14
\$33	\$0.08	\$0.095	\$0.15
\$35	\$0.085	\$0.10	\$0.16
\$38	\$0.09	\$0.11	\$0.18
\$40	\$0.10	\$0.115	\$0.19
\$43	\$0.105	\$0.12	\$0.20
\$45	\$0.11	\$0.13	\$0.21
\$48	\$0.115	\$0.14	\$0.22
\$50	\$0.12	\$0.145	\$0.23

Finish is applied at 5 wet mils

	80% TE	65% TE	40% TE
\$ PER GALLON	SQ FT COST PER COAT	SQ FT COST PER COAT	SQ FT COST PER COAT
\$10	\$0.04	\$0.06	\$0.08
\$12	\$0.05	\$0.06	\$0.09
\$15	\$0.06	\$0.07	\$0.12
\$18	\$0.07	\$0.09	\$0.14
\$20	\$0.08	\$0.10	\$0.16
\$23	\$0.09	\$0.11	\$0.118
\$25	\$0.10	\$0.12	\$0.20
\$28	\$0.11	\$0.13	\$0.22
\$30	\$0.12	\$0.14	\$0.23
\$33	\$0.13	\$0.16	\$0.26
\$35	\$0.14	\$0.17	\$0.27
\$38	\$0.15	\$0.18	\$0.30
\$40	\$0.16	\$0.19	\$0.30
\$43	\$0.17	\$0.21	\$0.34
\$45	\$0.18	\$0.22	\$0.35
\$48	\$0.19	\$0.23	\$0.38
\$50	\$0.20	\$0.24	\$0.39

Conclusion

Waterborne stains and finishes are here to stay. Finish manufacturers are constantly making improvements and as usage increases prices go down. Waterborne systems can provide your company many health and economic benefits, but I suggest that before you make the switch do your homework.