Paint and Compressed Air Humidity

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Very often it is the compressed air causing your refinish problems; not the paint, nor the painter!

Solvent Based Paints:

Every paint company provides you with specific instructions to follow in mixing their paints. Most painters are not getting these ratios correct. Not because they don't follow instructions; it is because they don't understand the role compressed air humidity (CAH) plays in the catalyst process. When the compressed air contains higher levels (over 10%) of water vapor (compressed air humidity), your catalyst reacts with and attaches to the water molecules within the compressed air, which effectively produces an under catalyzed isocyanate-based finish. The more compressed air humidity you have, the more your finishes will vary, with longer cure times and a greater chance of incurring some of the common paint defects noted below. Ambient air with humidity flowing over the painted surface allows the isocyanates to bind with the paint resin, but humidity should not be in the spraying air.

Waterborne Paints:

With water now being the medium to convey the paint to the surface, the addition of further moisture coming from the compressed air stream once again throws off the water/coating mix ratio that the paint companies design into their products. Having the additional moisture within the applied coating lengthens out cure times and results in varying finishes (flash times). This variance leads to not only longer production cycle times, but problems with color match and many of the defects listed below. The closer the compressed air humidity is to 0% (and maintained at => 3%) the more productive and consistent the waterborne finish is applied. Another problem with waterborne finishes is oil mist. With solvent based systems a little oil contamination could be over come, but with waterborne oil mist must be eliminated.

The following refinish problems have been directly associated with COMPRESSED AIR HUMIDITY:

Die Back
Poor Durability
Poor Adhesion
Un-cured Finish
Primer Hard to Sand
Poor Hold Out
Hard to Buff
Cloudiness in the Clear
Poor Gloss

Many studies have found that the lack of clean, dry air relates to 70% of all paint complaint issues. With so many other variables involved in the refinish process, including but not limited to, the substrate, surface prep, ambient conditions, refinish materials, paint techniques, etc., the use of consistent clean dry air (less than 10% CAH), allows you to concentrate on limiting the variation on these other items. Take your compressed air humidity and remove it from the equation.