Our most recent Tech Tips have talked a lot about how to keep our equipment operating reliably and efficiently – now it’s time to talk about application, including Drum Prep, Spray Pressures, Spray Temperatures, Substrate Limitations, Application Depths, Application Techniques and Final Inspection.

**DRUM PREP**
Drums must be stored at 60-80°F. In order for the drum to be serviceable – meaning ready to spray – the drum must be in a temperature range from which your reactor can take it the rest of the way to spray temperature.

Example – If your drum temperature is 80°F and you have an E-20 with a delta T of 50°F, your max spray temperature can only be 130°F. If you want to spray at 140°F with the same machine your drum must be 90°F to achieve that spray temperature. As you can see, it is important to know the delta T of your reactor and your drum temperature in order to achieve the proper spray temperature. For those of you with Recirc capabilities, you can recirculate the 052N to raise the drum temperature but do not recirculate the chemical over 100°F.

**SPRAY PRESSURES**
Spray pressures should be 1200-1400 psi for optimal performance to achieve good atomization and mix of chemical with a proper spray pattern. 1200 psi is the minimum for an .01 mix chamber (AR4242) and 1400 psi is the minimum for an .02 mix chamber (AR5252).

**SPRAY TEMPERATURES**
Spray temperatures should be 125-145°F. The lower temp spectrums are used in warmer climates as to where the higher temp spectrums are used in colder climates. If the foam is reacting slowly or is slightly runny down the wall then it is cold and requires more heat. If the foam starts to shrink after the initial reaction then it is too hot and temps need to be dialed down. For autumn and winter seasons a good starting point is 135°F.
**SUBSTRATE LIMITATIONS**

Three things we want on all substrates are that they are clean, dry, and warm. While clean and dry give us the best success for adhesion, warmer substrates give us better yields. The colder the substrate the lower the yields we can expect.

**APPLICATION DEPTHS**

You can spray anything from a flash pass (0.5 inches) to a full fill pass (3.5-5.5 inches) in a cavity and depending on technique and cavity even thicker than 5.5 inches. Keep in mind that the more passes you spray to fill a cavity the less yield you will get. While flash passes are not the most desired pass it is sometimes necessary to heat substrates for the next thicker pass, or if spraying overhead so we can spray thicker passes above us.

**APPLICATION TECHNIQUES**

There are several different styles and techniques used by thousands of applicators. The most common is holding the trigger and moving the gun from side to side while working from bottom to top of cavity. Another would be triggering the gun in an up and down motion within the cavity. And one more would be holding the trigger down, starting at the bottom and center of the cavity and taking the gun straight up to the top of the cavity. Regardless of your style as an applicator, your job is to seal the cavity and fill to proper depth.

**INSPECT APPLICATION**

Look for good cell structure and adhesion. Remove any unreacted chemical from wall (due to pressure imbalances while triggering gun). Press on cured foam and feel for voids, if voids are found inject foam into void.