

Static and Lint

Production

Much has been written on the subject of static electricity and the resultant linting in a drycleaning system. In spite of this, static continued to be one of the most elusive problems encountered by the drycleaner.

The static phenomenon is well understood and occurs principally in the dryer, toward the end of the cycle. The constant contact (friction) between dissimilar fibers in a warm, dry atmosphere results in the transfer of electrons causing charges to build up on the surface of the fabrics. Since the fibers are non-conducting, these charges cannot dissipate and continue to build up. The attraction of opposite charges tend to "fluff-up" certain fibers, causing more free lint to be present. This lint is then attracted to other garments. The build up of high static charges is quite evident to the operator as he unloads the dryer amid snapping, crackling, and sparking.

Unfortunately, the control or elimination of this phenomenon is not an easy task. It is known that when the electrical conductivity of fibers is increased, electrical charges will dissipate. Water, as adsorbed, principally by natural fibers, from the atmosphere or from moisture added to the solvent system, will conduct charges and will act to dissipate static electricity. Static and the resulting excessive linting generally becomes a chronic problem during the cold, dry days of the winter season. In addition to water, other substances, such as detergent chemicals, antistat additives, and even nonvolatile residue left on the garment fibers will act to dissipate static charges. Detergent and chemical additives can be very effective but are present in the system in very low concentrations and are not a cure-all in extreme cases. In any case, these materials will only contribute to the control of static if adequate moisture is present. While the typical clean solvent of a Fabritec system may work against the solution of linting, we certainly do not recommend reducing distillation during the winter months. Better to roll a little lint than to create all of the problems associated with high NVR.

Grounding the dryer shaft, preferably to a ground stake, will cause the dryer cylinder to be neutral and allow static charges to dissipate as the garments contact it during tumbling. The following recommendations will help reduce the problem of static electricity and linting:

- 1) Review your garment classification. It may be necessary to classify more selectively during winter months in cold climates.
- 2) Make sure the recommended amount of detergent and moisture is being added to each load.
- 3) Make sure the solvent level during cleaning provides at least 3/4 gallon solvent for each pound of garments in the wheel.
- 4) Do not over extract. The load should retain 45% of its original weight following extraction.

Do not overload dryer and avoid underloading.

- 6) Make sure dryer is properly grounded, preferably to a steel stake driven into the ground below the frost line to moist earth.
- 7) Do not overdry. Watch the outlet air temperature and when it reaches 140°F (120° on drapery and fragiles) give it adequate cool down and deodorize.
- 8) Do not allow garments to tumble on aerate for production reasons. A few basket wrinkles are more tolerable than a dozen or so linted garments.
- 9) Clear rinsing prior to drying will aggravate the static and lint problem.

Fabritec detergents contain antistats which are effective in static control.