

ACTEGA Kelstar Technical Bulletin

Scratch Off Coating Application

Application of Scratch Off Coatings Using Heat Set Web

A pattern gluer is the recommended application equipment of choice for applying ACTEGA Kelstar Scratch Kote scratch off coating on heat set web presses. The pattern gluer should be located after the printing units and before the oven. Solvent based scratch off coatings have been successfully run up to 1500 FPM with the proper selection of paper and application.

- **Pads** - Printing pads must be solvent resistant and not swell. Generally, Buna-N Rubbers and photopolymers with a durometer over 80 have good solvent resistant characteristics.
- **Papers** - To insure removability of the scratch off with little or no residual staining, clay coated papers should be used. It is good practice to pretest all papers for ease of removability and non-stain properties prior to production. Kelstar offers comprehensive next day laboratory services and will test substrate holdout with scratch off, for residue staining and removability characteristics.
- **UV** – Presses that are equipped with UV lights, if possible, should utilize a UV coating undercoat. A UV undercoat is recommended for clay coated or other substrates that exhibit poor holdout. UV coating provides a uniform foundation for scratch off applications by greatly minimizing the effects of poor holdout, therefore reducing the possibility of residual staining.
- **Viscosity** – ACTEGA Kelstar Scratch Kote scratch off coatings are supplied at 30-35 seconds in a #5 Zahn Cup at 74°F. The optimum viscosity for most pattern gluers is within this range. A coating, which is too viscous, can easily be thinned with Scratch Kote Diluent. When applying scratch off, the best practice is to circulate from the five gallon pail to the pattern gluer pan and back. Scratch off coating should be kept away from excessive heat. If scratch off viscosity is too high, slowly add diluent to the pail until the coating viscosity is reduced to 30-35 seconds in a #5 Zahn Cup. High viscosity can cause uneven lay or ridges in scratch off coating, potentially causing offsetting. Do not over-dilute. Add diluent a little at a time. Too thin a coating yields poor hiding and reduces removability.
- **Hiding** - To maximize scratch off hiding properties, the message under the scratch off coating should be screened in a color other than black. Another possibility is printing the background in another color. This method provides the same holdout over the entire area to be coated with scratch off, resulting in better hiding. Scratch Kote S-400 Gold Scratch Off has the best hiding ability with mileage of 25,000 square inches coverage per lb. or 1,375,000 square inches per 55 lb. pail. Scratch Kote S-600 Silver Scratch Off will yield 20,000 square inches coverage per lb. or 1,000,000 square inches per 50 lb. pail.

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- **Offsetting** - Offsetting can be caused by insufficient drying, due to residual solvents still left in the coating. It is important to use enough heat and dwell time to fully evacuate all solvent from coating. Offsetting can also occur due to uneven application settings or swollen pads or from uneven pressure. When cutting, the pressure clamp must not be directly on top of the scratch off. To minimize clamp pressure, place a block of plywood or 2 x 4 over the top sheet. If this is not sufficient, attach to the clamp edge, a template that prevents the clamp from coming in contact with the scratch off coating.

- **QC** - After the sheets are sealed with varnish or UV coating, it is critical for the customer to run a few tests sheets with the Scratch Kote, checking the level of residual staining and release before running an entire job. The reason that this QC procedure is needed, is because stock holdout will change from lot to lot, potentially causing failure. The customer maintains responsibility for ensuring that the Scratch Kote releases from the substrate being used.

Checking immediately off the press will enable you to detect the substrate holdout in combination with the seal coat and if it provides adequate holdout. Providing this quality control check off press will avoid future exposure in terms of losses for the customer, and will ensure that you are getting the proper release characteristics from the Scratch Kote.

Contact ACTEGA Kelstar at 856 829 6300 or info.actega.kelstar@altana.com for additional information or technical assistance.