

PRIMER INTELLIGENCE

OUT-OF-LINE PRIMING

MICA™ extrusion coating primers have been developed for single-pass processes. The best performance will always be achieved when the primer is applied immediately prior to extrusion coating. Sometimes, however, there is a need to perform a multiple-pass process, where a substrate is primed, dried, rewound and stored for later use.

Examples of Multiple-Pass Processes

- Priming for ink adhesion
 - Pre-print priming (prime, rewind and bring the primed web to the press)
 - Post-print priming (prime on the last station of the press, rewind and bring the printed, primed web to the extrusion coating line)
- Pilot line testing by resin suppliers and equipment manufacturers who (for some strange reason!) do not have a priming station in series with an extrusion coater
- Manufacturing complicated structures that are impossible to make in a single pass with the existing equipment configuration

How to Prime Out-of-Line

Step 1: Treat the substrate, prime, dry thoroughly, rewind with minimum tension.

Step 2: Unwind, extrusion coat (or print, adhesive coat, etc.) onto the primed surface.

- Do not treat the pre-primed web in Step 2.
- Minimize the time between Step 1 and Step 2.

BEWARE! Pitfalls to Avoid

Backside contamination: What is the primed surface being wound against? Slip, inks, overlacquers, etc., can easily offset to the primer and interfere with adhesion. To be prudent, the layover time for these structures should be less than 24 hours.

Paper “poisoning” is an especially severe case of backside contamination. Many attempts have been made to prime aluminum foil and wind the primer against paper (Step 1 =

paper/foil/primer). Within a very short time, substances from the paper can migrate and contaminate the foil surface, and this happens whether or not primer is present. The poisoned foil will not bond well to primers, inks or extruded resins. Re-priming the poisoned surface typically does not restore the surface, but flame treatment may help. Flame treat the poisoned foil, prime and immediately extrusion coat (or print). In sum, please do not wind paper against aluminum foil.

Treatment: Avoid winding against a treated backside, as the primer is prone to blocking when wound against an oxidized surface.

Incomplete drying: A primed surface that has residual moisture is likely to block and adhesion will be poor. Dry thoroughly before rewinding.

Layover Time

The amount of time the primer will remain viable between steps will depend on the potential for backside contamination (see above). The ideal case would be to wind against a plain surface such as untreated OPET, where the time between passes can be up to several weeks.

Store the primed rolls in a cool, dry environment.

Even under the best circumstances, if too much time elapses between priming and the second pass, the primer will self-react and the adhesion performance will eventually diminish. The shorter the layover time, the better the results will be.