

Roll Trials

The primary goal of a simple “Roll Trial” is to develop the initial ultrasonic laminating process for a specific laminate package of materials so that production runs can begin.

Most roll trials require a minimum of 500 lyds to 1,000 lyds of each of the raw materials. A roll trial plan is crafted in concert with the customer team. As many details as possible about the “final” finished laminate are added to the program Needs Assessment and are incorporated into the plan.

Setup of the laminating machine at the beginning of a roll trial is critical. Each of the layers of materials are staged at the front of the machine and threaded through the different stages. Starting point machine settings are input based on past experience, and tensions are applied to each of the layers to ensure proper transport through the machine. Slitting knives if needed for inline roll slitting are mounted and verified. Windup details for the finished laminate are established. Procedures for labeling and packaging are communicated to the production crew.

At startup, the machine speeds are kept very slow and the focus is placed on achieving a high quality finished laminate. Good bonding of the laminate is key, but other characteristics like “no pinhole” conditions, no wrinkling, slit width or trim width are also established. Once all this is accomplished, machine speed is increased and machine setting adjustments made until an optimal, steady state laminating condition is confirmed.

Beckmann Converting staff keep detailed records of all machine settings and other important information in the roll trial folder so that the starting point for subsequent production runs is readily available.

Additional yardage beyond the minimum needed for the roll trial can be run if the customer requires it and if the roll trial achieves a reasonably optimized laminating process. Higher yardage may be needed to execute downstream converting trials with one or more converters. Occasionally higher quantities of customer samples are required as part of the market launch plan.

Most roll trials generate adequate data and information for Beckmann Converting to provide initial pricing quotations to customers for initial production runs. See the Pricing document for more details on pricing of laminating services at Beckmann Converting.

Roll trials can become more complex in several ways. Most common is that a customer wants to see the results of the basic laminate in several variations made with different basis weights of the same material or by substituting different types of materials in one or more of the layers. Another complicating variation would be the same material composite but laminated using two or more different roll patterns. Most customer requests can be integrated into a roll trial plan successfully. As the complexities increase, so do the number of hours needed and overall cost for the roll trial.

When a roll trial is completed, the finished laminate product is shipped back to the customer or to a downstream converter. Beckmann Converting's technical team provides a detailed report on the outcomes and challenges of the roll trial and recommendations for the next course of action. In most cases, the first production run can be scheduled. In some cases, the recommendation is to run one or more additional roll trials.