

American Synthetic Fiber

Pendergrass, Georgia

FABRIC PRODUCTION

To reach its singular objective of maximum up time and a capability of producing 14 million pounds of high quality, standard and proprietary fabric annually, American Synthetic Fiber elected to install a combination of PC control and Multi-drive AC motor control for seamless operation of all processes from the carding system to the winder. The two lines installed, to date, are the largest and first production lines in the non-wovens industry to be built this way, with the Multi-drive featuring a true, common DC bus.

ASF's new 240,000 square-foot fiber extrusion and non-wovens fabric production facility was constructed with the goal of the first needle punch line starting up in May and the second in September, 2000. Resin, extruded in a number of colors in half the facility, is stockpiled for standard fabric production (geotextile, agricultural and furniture/bedding), with specialty fibers produced on a custom-order basis. Benefits of the Multi-drive electrical control system include:

- **Regenerated Energy Utilized** - ABB Multi-drives require fewer power devices, optimizing throughput and increasing operational reliability, but they also utilize all regenerated energy, and reduce inventory costs of spare parts dramatically. "It is a cost-effective solution for an industry that utilizes machinery that generates significant inertia and regenerative energy," according to Systems Integrator Electric Systems, Inc., which built the Multi-drives. While each Multi-drive features a total of 43 ABB ACS 600 motor drives (ranging from 3-200 HP) to provide progressive draw control for the production machinery, a stand-alone configuration of 16 standard ABB ACS 400 drives operates the motors of the opening and blending process.
- **Easy Recipe Production** - Through seamless integration of the different machinery and PC control, ASF operators can call up the recipe on the PC and the machine pre-loads and starts the entire fabric production. Changeover time is minimal, and operators concentrate on setting speeds to optimize the fabric quality. Operators plug in a new PC in the event of problems; the need for any PLC boards is eliminated entirely.
- **Replication Across Multiple Lines** - The common drive platform for ABB AC drives ease fine tuning and replication of settings (established over time) to additional production lines as they are installed. Through ABB's DriveWindow™ tool, technicians upload all the drive settings from the first line - both the stand-alone drives for the opening and blending system, and for the Multi-drive - and download them quickly into the like drives on new lines.

With two lines in full production, and an expectation of adding 40 more employees to its current roster of 60 over the next three years, ASF continues its pursuit of maximizing up time and optimizing throughput of very high-quality fabrics, according to Ray Amin, president.

