Macro Engineering & Technology Inc., headquartered near Toronto, Canada, is a world leader in extrusion machinery for plastic film and sheet applications. One of Macro’s most recent extrusion systems is for PVC cling film roll production. Focusing on a complete turnkey package, Macro designed the entire extrusion system, from material feeding to winding to recycling of scrap, in addition to the complete resin recipe consisting of PVC, plasticizer, and other additives. “Offering a complete package that includes the formulation, machinery, installation, and training offers the processor the ability to get up and running faster,” said Shailesh Shah, product manager at Macro. “With the aid of Siemens products and support, we’re able to get our machinery programmed and delivered to the customer quicker.”

**Tight controls with a prepackaged solution**

Tight control of the extruder and die temperature zones is vital to ensure consistent melt quality, particularly since the line is extruding very thin films in the 9–15 µm range. To achieve this, Macro selected Siemens’ TCP-3000 temperature controller package, which contains the programmable logic controller (PLC) program and HMI screens already built and tested. “The use of Masterdrives, S7-300 PLC, and MP377 HMI on both Profibus and Industrial Ethernet helped us ensure tight controls and synchronized communication between the components,” states Shah. “Tension must be controlled with precision to avoid excessive stretching, slack, or tears in the film that could cause a break in production.”

**Perfect and versatile windings**

Another product Macro developed with support from Siemens is the AUTOMAX-SBG Reversible Surface Winder. Unlike traditional surface winders, the AUTOMAX-SBG can wind rolls with the film’s treated side in or out. The winder also has a vacuum drum that adheres the leading edge of the film to the drum during cutovers. This helps produce straight edge cuts without foldover. The result is perfectly wound rolls with flat, wrinkle-free film completely usable to the core. Simotion D425 with Sinamics S120 drives were used with 1FK7 servo and IFW3 torque motors to provide the high-speed accuracy required for the winding and roll change operations.

»With the aid of Siemens products and support, we’re able to get our machinery programmed and delivered to the customer quicker.«

Shailesh Shah, product manager at Macro Engineering & Technology Inc.

- Macro Engineering & Technology Inc., Canada

A world leader in extrusion machinery uses Siemens technology to create perfectly wrapped rolls of micro-thin plastic cling film with even thickness and no tears.

www.siemens.com/plastics
michael.balao@siemens.com