

Horizontal cast film and sheet units

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The use of a horizontal cast film and sheet unit as a laboratory line, simulates commercial production lines, with the roll stack manipulated to run sheet or cast film.

Conventional sheet is extruded in the horizontal plane through the vertical three roll stack. When extruding materials with low melt strength, the conventional vertical roll configuration has shown some limitations; principally due to gravity working against the extrusion process. This has led to the development of extrusion equipment to produce sheet using a horizontal roll configuration. The key is that the extrudate makes contact with both cooling rolls simultaneously. Extruding horizontally, the extrudate contacts the middle roll first, sagging due to gravity, it is then dragged into the nip point. However, resins such as polyester, where high clarity amorphous sheet is required, the roll stack should be used in the horizontal position for best results.

Four independent drives are incorporated to achieve accuracy, increase flexibility of the equipment, and obtain a wider speed range. Brushless DC drives with control servo are capable of producing low speed for sheet extrusion (3 fpm), high speed for cast film (165 fpm), as well as reverse rotation on each roll for versatility. The servo option allows the take off equipment to handle a wide range of materials with fine repeatable adjustment of film tensions when operating in the cast film mode.

The use of a horizontal cast film and sheet unit allows pilot extrusion of mono and coextruded products with a quick response time and the use of minimum amounts of resin, equipment, and energy.

- Ralph Cutillo, Killion Extruders/Davis-Standard

See also:

- [Blown film versus the cast film process](#)

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