

Twin screw extrusion system compounds high levels of metal fillers into polymers

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[\(10\)](#) » [Tips for Optimizing Twin-Screw Extruder Performance](#) » [Troubleshooting](#) » [Twin screw extrusion system compounds high levels of metal fillers into polymers](#)

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Twin screw systems can be configured to continuously mix high levels of metal fillers (90% + by weight) with various polymer binders such as nylon, acrylic and various multi-melt point blends. The polymer is fed into the main feed throat and melted /mixed prior to the introduction of the metal powder via a side stuffer. Loss-in-weight feeders meter the binder and powdered metal or ceramic feed streams into the extruder to maintain formulation accuracy. The compound is typically pelletized at the die face and pneumatically conveyed to a vibratory cooling tower.

By separating plastication from the mixing step, component wear is significantly reduced since the metal fillers are not present during melting. High distributive "combing" mixing screw elements are used after the introduction of the metal to mix the polymer/metal filler with a minimal peak shear and high particle wet-out rate. High abrasion resistant metals are specified from the point in the process where the metal fillers are introduced by the side stuffer.

- Charlie Martin Leistriz

See also:

- [Twin screw extruder operating range](#)
- [Twin screw extruder screw design: one, two, three](#)
- [Twin screw extruders design and operating characteristics](#)

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