



Technical Bulletin

THE TECHNICAL BULLETIN

A technical source for the employees and clients of Osprey Corporation.

Inline Film Scrap Reclaim: Fluff vs. Repelletizing

Osprey offers both film reclaim options utilizing fluff or repelletizing. Some applications present the opportunity to choose between the two recycling methods. However in many cases, only one method is feasible. No matter which equipment supplier you select, please consider the following information to determine what type of system is best for your particular application.

Smooth Bore and Groove Feed Extruders

Smooth bore in-feed sections are common among North American extruder manufactures. However outside this area, most OEM blown and cast line producers incorporate a grooved in-feed section. Recently, some European manufactures have started to offer both smooth and grooved in-feed sections. If your production line has a grooved feed section, your most efficient and economical reclaim method is repelletizing. We would not recommend a fluff reclaim system on a groove feed application. Companies that operate lines with smooth bore extruders have the option of fluff reclaim or repelletizing. Regardless of your extrusion equipment, most film producers today must incorporate an in-line trim and scrap roll reclaim process in order to be profitable and competitive in their market.

Fluff Reclaim Systems

Fluff reclaim is a traditional method of inline scrap reprocessing. This system typically includes a trim pickup system, grinder, and a refeed unit. The trim system is used to pick up and convey the trim from the winder to a trim receiver that is mounted to a granulator. Depending on the application this system could incorporate a venturi or an in-line cutter. The grinder is usually sized with a screen that includes a 1/8" or 3/16" hole size. The hole size is based on the material and a desired maximum bulk density. In most cases, scrap rolls are processed via a roll feeder that is attached to the grinder. Trim and roll scrap are processed by the granulator and conveyed via the grinder blower to a cyclone. The cyclone is mounted directly to a refeed unit that is mounted to the extruder feed throat. A blender may be mounted to the refeed

unit to feed virgin material. Reclaim rates of 5 to 15% are typical. In some cases, higher rates are possible based on the material and extrusion process. In trim only applications, customers generally have a good idea of their reclaim percentage. However, once roll scrap is introduced, this makes the reclaim calculation much more difficult.

Inline Repelletizing Systems

In the United States in-line repelletizing is relatively new. However, this is a common practice in Europe and has been for many years. Repelletizing includes a trim pick up system along with a pelletizing unit. The trim system conveys material to a receiver that is mounted to the repelletizing unit's in-feed section. Typically, an optional roll feeder for scrap roll processing is included as well. In this case, trim and scrap rolls enter a dual diameter extruder in-feed section. The low L/D screw quickly melts, compresses, and meters the material through an optional screen pack and die. Reduced residence time and shear insure in most cases minimal polymer degradation. Material is then cut and either air or water cooled. In most applications reclaim pellets are batched and can be processed easily through any type of blending system. Pellets process well through smooth bore or groove feed throat extruders. Since the reclaim pellets are processed by the batch or continuous blending system, customers know exactly how much reclaim they are introducing back into their product and have an excellent means of control.

Advantages and Disadvantages

For those that have a choice, there are clear advantages and disadvantages between the two types of reclaim methods. Potential buyers should consider carefully their specific application and needs. Knowledgeable sales representatives should be used as guides to help you make the best equipment selection for your application. No one set of rules fits all applications. However, you can use the following as a guideline in order to help you get started in your evaluation process.

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Fluff System	vs.	Repelletizing
Lower capital cost		Higher capital cost
Works well on only smooth bore extruders		Works well on both smooth and groove feed extruders.
Works well on both blown and cast film lines		Works well on blown film lines
Good for mono and coex lines		Good for mono and coex lines up to generally five layers.
Fluff cannot be metered through a blending system		Pellets are processed by the blending providing precise reclaim rates
Less operator interface		More operator interface
Higher noise and dust levels		Lower noise and dust levels

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