



## Recycling Technology

TyrFil is the Only Flatproofing Solution with a Comprehensive Recycling Equipment Line with 24-Hour Global Technical Support

TyrFil Recycling Technology significantly reduces carbon footprint and saves money by:

- Recycling and using up to 65% reclaimed tire fill while reducing the petrochemicals (including oil) normally required to fill an off-the-road (OTR) tire.
- Keeping used tire fill out of landfills and eliminating landfill disposal fees.

## TYRFIL RECYCLING TECHNOLOGY IS THE MOST RELIABLE, ECONOMICAL AND ECO-FRIENDLY FLATPROOFING SYSTEM!

In 1971, TyrFil, the world's first polyurethane tire fill material intended to flatproof tires, was invented. As the industry leader in tire flatproofing solutions for nearly 50 years, Carlisle TyrFil has made providing environmentally, supportive products a long-term strategic business priority. As part of this commitment, Carlisle continues to invest in recycling technology innovation. Recycling technology mixes virgin TyrFil with either reclaimed tire flatproofing, crumb rubber or even previously mixed materials, eliminating the environmental impact of sending used polyurethane and used rubber to the landfill.

The TyrFil Recycling Technology's computer systems are field-proven for more than a decade to meter and mix controlled amounts of virgin liquid tire fill and granulated tire fill to a homogenous TyrFil mixture that fills the tire exactly the same as virgin liquid tire fill.

**Green Machine**



**AutoFil Recycler System**



**AutoFil-GenII**



Features	Processes PU grind, rubber crumb grind or rubber granules. Grinder is separate.	Grinds reclaimed tire fill and fills tires.	Grinds both reclaimed tire fill and rubber crumb and fills tires.
Environment	High volume, good supply of reclaimed tire fill, PU grind or rubber crumb grind	High volume, good supply of previously used cured tire fill (virgin or PU grind).	High volume, good supply of previously used cured tire fill (virgin, PU grind or rubber crumb).
Processing Speed	Up to 38/42 pounds per minute	Up to 28/32 pounds per minute	Up to 40 pounds per minute
Electrical Requirements	230 Volt, 3 Phase, 40 Amp 380 Volt, 3 Phase, 30 Amp	208/230 Volt, 3 Phase 60 Hertz, 100 Amp 460 Volt, 3 Phase 60 Hertz, 60 Amp 380 Volt, 3 Phase 50 Hertz, 60 Amp	480 Volt, 3 Phase, 60 Amp

## The TyrFil Recycling Technology Eliminates Chunking

Chunking is the term used to describe filling tires with “chunks” of used tire fill, and then filling the remainder of the tire with virgin tire fill. With no standard practice, consistency or control of process, the overall tire performance remains inferior compared to a properly filled tire.



## The Reasons Why Chunking Does Not Work

- 1 Mega-chunking** – Old chunks of polyurethane do not bond to the new/virgin liquid fill, so the more a tire is chunked, the more surfaces or interfaces are created increasing the frictional heat generated within a tire.
- 2 Incompatibility** – The durometers and chemical compositions of different types of fill vary widely. Because of these differences, the chunked materials are not apt to bond, physically or chemically, with the new urethane.
- 3 Heat History** – A significant amount of high-heat history “chunk” is finding its way into new tires. The use of this “old chunk” will result in the premature failure of filled tires due to run-away overheating.
- 4 Process Variability** – Due to the very nature of the “chunking” process and component “raw materials”, it is virtually impossible to ensure any level of consistency in a filled tire which has been chunked.
- 5 Tire Carcass Over-Heating** – Frequently the excessive heat generated by the “chunk” or inferior polymer will cause the tire carcass to fail prior to any noticeable degradation in the fill mass.

## Tire Fill Recycling in the 21<sup>st</sup> Century

- Blends all material together BEFORE filling
- Processes recycled tire fill as well as crumb rubber
- Exceeds EPA's requirements for reclaimed materials content
- Computer controlled
- Optimized and sustained ratio
- Optimized profit
- Consistent durometer



## COMMITMENT TO SUSTAINABILITY

### **Carlisle TyrFil is committed to investing in R&D which supports the sustainability of our environment.**

As the industry leader in tire flatproofing solutions for nearly 50 years, Carlisle TyrFil has made providing environmentally supportive products a long-term strategic business priority. As a zero waste, zero emission manufacturer, Carlisle TyrFil has proved that innovation and sustainability can coexist and become a competitive advantage.

During the past decade, Carlisle TyrFil has introduced next generation technology that significantly reduces the usage of oil, petrochemicals, toxic metals and other environmentally harmful compounds. Carlisle TyrFil's sustainability initiatives have resulted in safer, manufacturing environments for our employees and our customers.

### **One Tote, One Tree**

We at Carlisle TyrFil realize that there is only so much we can accomplish on our own and this is why we have strategically combined our success with our customers' by partnering with American Forests to create the ONE TOTE, ONE TREE green program. This program plants a new tree for every tote of product purchased by our customers.

For additional information on our sustainability initiatives and the One Tote, One Tree green program, please visit [www.onetoteonetree.org](http://www.onetoteonetree.org).



**We keep the world rolling.**  
No flats, smoother ride, more protection.

**Carlisle TyrFil**  
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