

Underground or on the surface, Carlisle TyrFil has the flatproofing solutions to keep the OTR vehicles in your mining operation running safely and efficiently.

## TyrFil™ High Performance Flatproofing Technology



TyrFil™ is a polyurethane material that is pumped into OTR mining vehicle tires, replacing all the air. It cures into a flexible, durable filling that acts as a shock absorber and completely eliminates flat tires. Compared to other flatproofing products such as solid tires, cores and liners, TyrFil is the most cost-effective solution and provides the best overall performance.

### Performance

- Eliminates 100% of flat tires
- Lowers G-force impact to operator and equipment
- Maintains constant internal pressure and distributes loads evenly
- Extends tire life
- Increases heat resistance
- Eliminates rim slippage
- Improves traction and stability
- Retreadable—up to four times

*“Exposure to mechanical vibration and to vehicle jarring are responsible for over 34% of compensable diseases/injuries in coal mine workers and over 4% in non-coal mining workers.”*

Analysis of NSW WorkCover figures, 2002-2006.



### Safety

- Prevents catastrophic blowouts, critical in underground mining operations
- Eliminates Solid Shock and Pneumatic Bounce to operator and equipment
- Improves vehicle stabilization, enhances ride and reduces operator fatigue
- Helps minimize worker compensation claims

#### Solid Aperture Tire



#### TyrFil Processed Tire



TyrFil Processed Tires – 41% less G-force transmission to cab/operator than solid aperture tires. Data was collected on a front end loader tested on a track replicating real jobsite conditions.



## TLC | TLC Tire & Rim Protection



TLC Tire and Rim Protection conditions the wheel and maintains cooler tire operating temperatures. The liquid is added to the tire air chamber and coats the inside of the rims to provide rust protection. TLC's rust inhibiting formula, superior coating properties, and continual vapor dispersion extends the life of tires and rims. Plus, TLC is non-toxic, non-flammable, and non-hazardous.

### Performance

- **Reduces Downtime**
  - Tires run cooler, increasing tire life
  - Eliminates premature failures caused by rust
  - Disassembly of wheel components is easier, safer, and faster
- **Reduces Operating Costs**
  - Reduces labor costs
  - Fewer tires need to be purchased



Without TLC



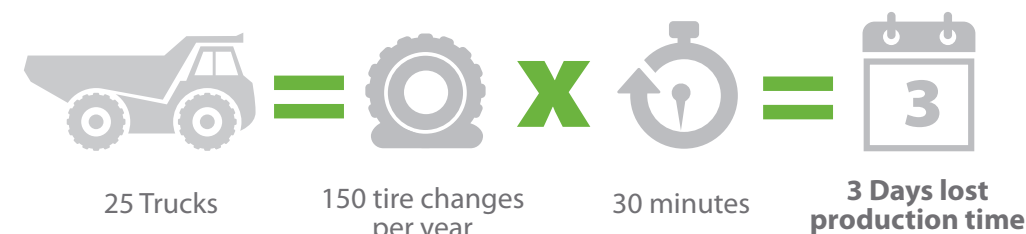
With TLC

### Safety

- **Helps Prevent Catastrophic Failures**
  - Residue builds up where any air escapes—easier to identify slow leaks and cracks
  - Greater visibility of problems during pre and post shift inspections
  - Reduces operating temperatures to help prevent blowouts

#### Reduced Operating Costs Per Year

Additional tire maintenance time taken on average without TLC:



### The Testing Proves It



#### Corrosion Protection

Protects 2 ½ times better than the competition.



#### Continuous Vapor Dispersion

Optimal viscosity level coats entire inner rim and tire - continues to protect from rust even while not in motion.



#### Freeze Test



Tested at -10° F (-23° C), the competing product froze within one hour. TLC did not freeze.

#### Temperature Range

No matter what the average operating ambient temperature, there is a TLC product specifically formulated to perform from lows of -40° F to +20° F (-40° C to -7° C).



#### What customers say about TLC:

*“Using TLC made dismantling tires easier and safer as very little effort is now required to separate the bead from the wheel.”*

*“TLC allowed us to identify an extremely slow leak in a cracked wheel which allowed us to replace it before it failed.”*

*“TLC’s lubrication extends the life of the liner and bead area.”*





Select the right products for all your OTR vehicles and applications:

	TyrFil Flex Flatproofing Technology	TyrFil Ultra Flatproofing Technology	TyrFil HeviDuty Flatproofing Technology	TLC Tire & Rim Protection
<b>Durometer</b>	10 Durometer	30 Durometer	55 Durometer	
<b>Features</b>	Maximum tire deflection	Medium heat resistance	Minimum tire deflection	<ul style="list-style-type: none"> <li>Liquid conditioner for inner rim and tire</li> <li>Reduces running temperatures</li> <li>Protects rim from rust</li> </ul>
<b>Benefits</b>	<ul style="list-style-type: none"> <li>Soft air-like ride is easier on equipment &amp; operators</li> <li>Ideal for mine support vehicles</li> </ul>	<ul style="list-style-type: none"> <li>Provides optimum performance in the most severe operating conditions</li> </ul>	<ul style="list-style-type: none"> <li>Provides rock-steady stability and safety</li> <li>Ideal for moving tremendous weights over short distances</li> </ul>	<ul style="list-style-type: none"> <li>Increases hours on tires</li> <li>Promotes safety</li> </ul>
Shuttle Cars	●	●	●	
Scoops		●	●	
Roof Bolters		●		
Uni-Haulers		●		
Scalers		●	●	
Drills	●	●		
Tractors	●			
Personnel Carriers	●	●		
Shield Haulers			●	
Fork Lifts	●	●		
Skid Steers	●			
Front End Loaders	●	●		●
Haul Trucks	●	●		●
Lube Trucks	●	●		
Mechanic Trucks	●	●		
Cranes	●	●	●	
Aerial Lifts	●	●	●	
Backhoes	●			
Graders	●			

If a flatproofing technology is not required, consult with a Carlisle TyrFil sales manager to learn how TLC can extend tire life and reduce downtime in the equipment listed in the above chart.



Each grade of TyrFil is designed to meet your particular load, ride, speed, and traction requirements:

**TyrFil Flex**

- Maximum tire deflection
- Soft air-like ride is easier on equipment & operators
- Ideal for mine support vehicles

**TyrFil Ultra**

- Medium heat resistance
- Provides optimum performance in the most severe operating conditions

**TyrFil HeviDuty**

- Minimum tire deflection
- Provides rock-steady stability and safety
- Ideal for moving tremendous weight over short distances



Each grade of TLC is designed to meet the temperature requirements of your mining operation:

**TLC TUNDRA**  
-40°F / -40°C

**TLC EXTREME**  
-20°F / -29°C

**TLC PRO**  
0°F / -18°C

**TLC HT**  
20°F / -7°C

- TLC formulas are also available in a concentrate

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We Keep You Mining.

