TLC
TIRE & RIM PROTECTION

A Comparison of Rim Protection and the Impact of Corrosion

Reducing corrosion positively impacts overall performance and safety in OTR tire applications. This paper explores the differences in tire and rim protection products being currently offered in the market and their ability to reduce corrosion. The test simulated approximately one year of field use in the extreme operating conditions of a Mining OTR tire.

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ACCELLA
TIRE FILL SYSTEMS

Putting TLC to the Test: Corrosion

Overview

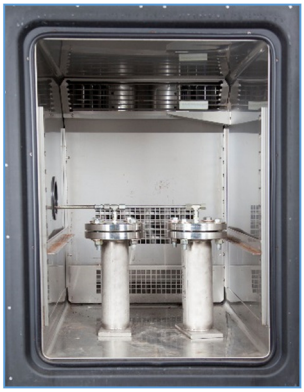
Corrosion is one of the biggest detriments to mining equipment's wheels and tires. The damage caused by corrosion adversely impacts performance and makes equipment unreliable and unsafe.

Due to its nontoxic, nonflammable and nonhazardous formula, Accella's TLC Tire and Rim Protection liquid helps to prevent corrosion for longer tire life, easier tire change, reduced downtime and costs, and overall safer operation.

To prove the strength of TLC products, Applied Technical Services, Inc. (ATS) conducted a series of rigorous corrosion tests and compared them to other industry leading products.

Since 1967, ATS has served as a top tier consulting engineering firm and independent lab with extensive testing and inspection capabilities.

About the Test



For this corrosion test, ATS constructed specialized chambers to simulate approximately one year of field use in a Mining OTR tire that operates at up to 176° F (80° C) on a two-shift basis. To achieve this, corrosion testing was conducted at extreme temperatures of 212° F (100° C) and 100 PSI (6.89476 Bar, 689.5 KPa).

The best measurement of corrosion is weight loss, as the process of corrosion is actually the reduction or deterioration of a metal by oxidation.

TLC HT

Wheel Safe

RimExcel

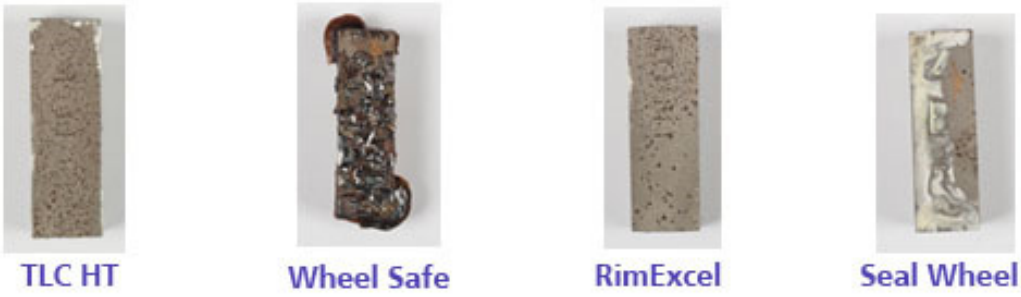
Seal Wheel

Proof of Performance

At the end of a 7-day test, the sample steel coated in TLC HT had only a 0.0102% reduction in weight, compared to RimExcel (0.0142%), Sealwheel (0.0205%), and Wheel Safe (0.4701%).

CORROSION TEST RESULTS: WEIGHT LOSS % AFTER 1 WEEK UNDER 100 PSI AND 100 DEGREES C (212 DEGREES F)					
Product	**Freeze Point? (° F)**	**Starting pH**	**Refractometer Reading (PG scale %)**	**Ending pH**	**Steel**
TLC	25-28	8.1	15	8.4	0.0102%
Wheel Safe	30-32	7.0	0	6.9	0.4701%
RimExcel	25-28	7.3	15	7.3	0.0142%
Sealwheel	20	10.0	21-22	8.6	0.0205%

Summary



- TLC HT will provide longer lasting corrosion protection on steel surfaces compared to any other competitors (the higher pH is indication of this).
- TLC HT has more freeze protection compared to any other competitors.
- Wheel Safe has significant competitive disadvantages, it does not offer freeze protection and has significantly poorer corrosion protection.
- Seal Wheel offers some protection against corrosion but did not perform as well as TLC, then RimExcel. Additionally, its freeze protection is not as good and it can foam.
- *There is not a statistical significance between the test results of RimExcel and TLC, but there is a statistical difference between TLC and Seal Wheel.*

Previous corrosion testing, confirmed that Tire Life had 0.0152% weight loss. Additionally, Tire Life claims freeze protection to 20° F but testing did not confirm this. Testing indicated the freeze range is 25° F - 28° F.

TLC – It's What's Inside That Counts!