

2 WEEKS TO PRODUCE, 2000 YEARS TO DISAPPEAR

REPRINTED FROM NOVEMBER/DECEMBER 2026 // GLOBAL MINING REVIEW



Bob Nelson, Conveyor Belt Expert, cautions against cost-cutting when selecting conveyor belts, and advocates for choosing belts with longer operational lifetimes.

Conveyor belts are a vitally important and efficient method of on-site transportation across a wide range of industries. Demand is very high, resulting in thousands of kilometres of rubber industrial conveyor belting being manufactured, used, and discarded on a global basis every year. The vast majority of belts, certainly within the EMEA region, have an operational lifespan of less than two or three years. In an increasing number of cases, it can be only a matter of months, sometimes just weeks before a belt needs to be replaced.

Gradually over time, such short life expectancy has become the accepted norm. So much so that buyers of conveyor belts frequently treat manufacturer's claims of belts with dramatically longer operational lifetimes with a combination of disdain and disbelief.

This growing acceptance of shorter and shorter operational lifetimes is not only of considerable concern to environmentalists but equally amongst those who see the situation as a double-edged sword because in addition to environmental harm, there is also the impact of the extraordinary amounts of monetary waste incurred by unsuspecting end-users.

The monetary cost

The underlying reason for this growing throwaway culture is that the differences in selling price of conveyor belts of apparently the same specification have widened dramatically in the past twenty years or so. Belts imported from South and East Asia can quite easily be more than 50% lower in price compared to the few remaining premium quality brands in Europe such as Fenner Dunlop in the Netherlands and other European based manufacturers.

In Fenner Dunlop's case for example, field surveys and laboratory testing consistently confirm that it is not at all unusual for their belts to outlast two or three longer than lower quality 'competitively priced' belts. On more aggressive application the difference in the length of working life is often even greater. Added to the initial cost of a replacement conveyor belt is the removal of the old belt and the fitting of the new one; ongoing emergency repair and maintenance costs; and the hugely expensive lost production (downtime) costs caused by unscheduled stoppages.

Quite understandably, Fenner Dunlop argues that such differences in operational lifetime compensate for the lower prices of their competitors many times over

when compared on the basis of Total Cost of Ownership (TCO) methodology. The waste being caused by this rapid turnover in low-grade conveyor belts goes beyond the considerable monetary waste because it is causing the manufacture and long distance transportation of replacement belts to be some 50% greater than it needs to be.

Two weeks to produce

To better appreciate environmental impact, it is necessary to have a basic understanding of the implications and consequences of conveyor belt manufacturing. A typical rubber multi-ply or steel cord conveyor belt takes approximately two weeks to produce from start to finish. Rather than being one continuous process, production involves a number of separate processes, often with several hours or even days between each stage.



Figure 1. Throwaway culture – Short belt life expectancy has become the accepted norm.



Figure 2. Good quality = less monetary waste.



Figure 3. Conveyor belt production involves a number of separate processes.

The energy and raw materials used in those processes create a significant carbon footprint. Firstly, the synthetic inner fabrics and the raw materials used to create the (mostly) synthetic rubber, are almost all directly or indirectly derived from crude oil. In fact, a typical conveyor belt is effectively 45% oil, with one tonne of conveyor belt rubber usually containing approximately 500 l of oil.

Added to this are literally dozens of different components such as elastomers, polymers, fillers such as carbon black, and chemicals such as anti-degradants, anti-ozonants, and accelerators used to make the rubber. It is an inescapable fact that to make some rubber compounds it is necessary to use chemicals that may be potentially hazardous in their own right.

Fortunately, European manufacturers such as ContiTech, Semperit, and Fenner Dunlop (Michelin) are major producers of vehicle tyres and are world leaders in rubber technology and environmental responsibility.

Thanks to a small number of organisations like them, great inroads are being made into reducing environmental impact and improving safety of use. Much of their effort is based on the very strong EU regulations designed to protect humans, wildlife, and the environment in the form of REACH (Registration, Evaluation, and Authorisation of Chemical substances) regulation EC 1907/2006 and EU Regulation No. 2019/1021 Persistent Organic Pollutants (POP's). Unfortunately, more than 80% of conveyor belts used in Europe are not subject to these safeguarding regulations because they do not apply to conveyor belt manufacturers located outside of the EU's jurisdiction.

2000 years to disappear

Compared to used vehicle tyres, the amount of redundant conveyor belt being recycled is extremely small because recycling the rubber covers is a slow, complicated, and expensive process. At the same time, there is barely any demand for the inner synthetic plies or steel cords. The reality is that under foreseeable market circumstances, the largescale recycling of industrial conveyor belts is neither ecologically nor economically viable. Consequently, immeasurable quantities of rubber containing unregulated, potentially hazardous chemicals including persistent organic pollutants, polyester, and nylon continue to go to landfill.

The vast majority of commercial rubber is synthetic and engineered to resist biological and environmental breakdown. Scientists calculate that the component parts of a rubber covered industrial conveyor belt take at least 2000 years to break down significantly.

With droughts and wildfires and other unprecedented climatic events very much in the headlines across the world, it would be very easy to use environmental impact as the reason to use only premium quality grade products. However, no matter how much we may care for the environment personally or corporately, the reality is that conveyor operators everywhere are ultimately judged on economic performance, not carbon footprint. It is impossible to deny that protecting the environment is

tremendously important. From a corporate point of view, being able to boast of green credentials may provide a warm glow but for those at the sharp end such as quarry managers and maintenance engineers, it is cost-efficient productivity that keeps the wolf from the door.

The best of both worlds

Wanting to achieve the best of both worlds is usually regarded as unrealistic, but, in the case of conveyor belts, it is very much achievable. Investing in higher quality products achieves both goals but it is a classic 'chicken and egg' situation. In terms of the environment, it massively reduces environmental impact (and enhances green credentials) by halving the number of replacement conveyor belts that need to be made and then discarded.

Fortunately, from a monetary point of view, the reward for accepting environmental responsibility is that it maximises productivity through greater reliability and, at a conservative estimate, halves conveyor belts costs both above and below the line over the medium to long term. Ultimately, however, the €64 000 question is whether there is the commitment to pay a higher initial price for premium quality 'lower lifetime cost' products, especially among those who pull the financial strings. Admittedly, it may be seen as a big step but again fortunately, a wholesale change is rarely necessary. There is everything to gain and little or nothing to lose by putting a top-quality belt to the test, after which it becomes a gradual process. It appears to be a safe bet that will almost certainly pay off. GMR



Figure 4. EU regulatory control does not apply to conveyor belt manufacturers located outside of the EU's jurisdiction, primarily South and East Asia.



Figure 5. Rubber conveyor belts take at least 2000 years to break down significantly.