

# Convey the message

Speaking with experts in bulk materials conveying solutions, Louise Davis discovers how this is one sector where the old adage “you get what you pay for” is especially true

One piece of advice for any plant manager looking to invest in bulk materials conveying solutions is to ask the experts. Conveying is an industry featuring many respected, experienced individuals who are genuinely passionate about deploying the right products for a specific application. And these ‘veterans’ of conveying are refreshingly honest about the limits of their own products and those of their competitors. They will comprehensively dismantle the dubious marketing claims from those touting poor-quality products. They’re also friendly and approachable; the experts featured here welcome discussion around the merits of their own solutions and are united in taking a strong stance against those offering inferior products to unwitting customers.



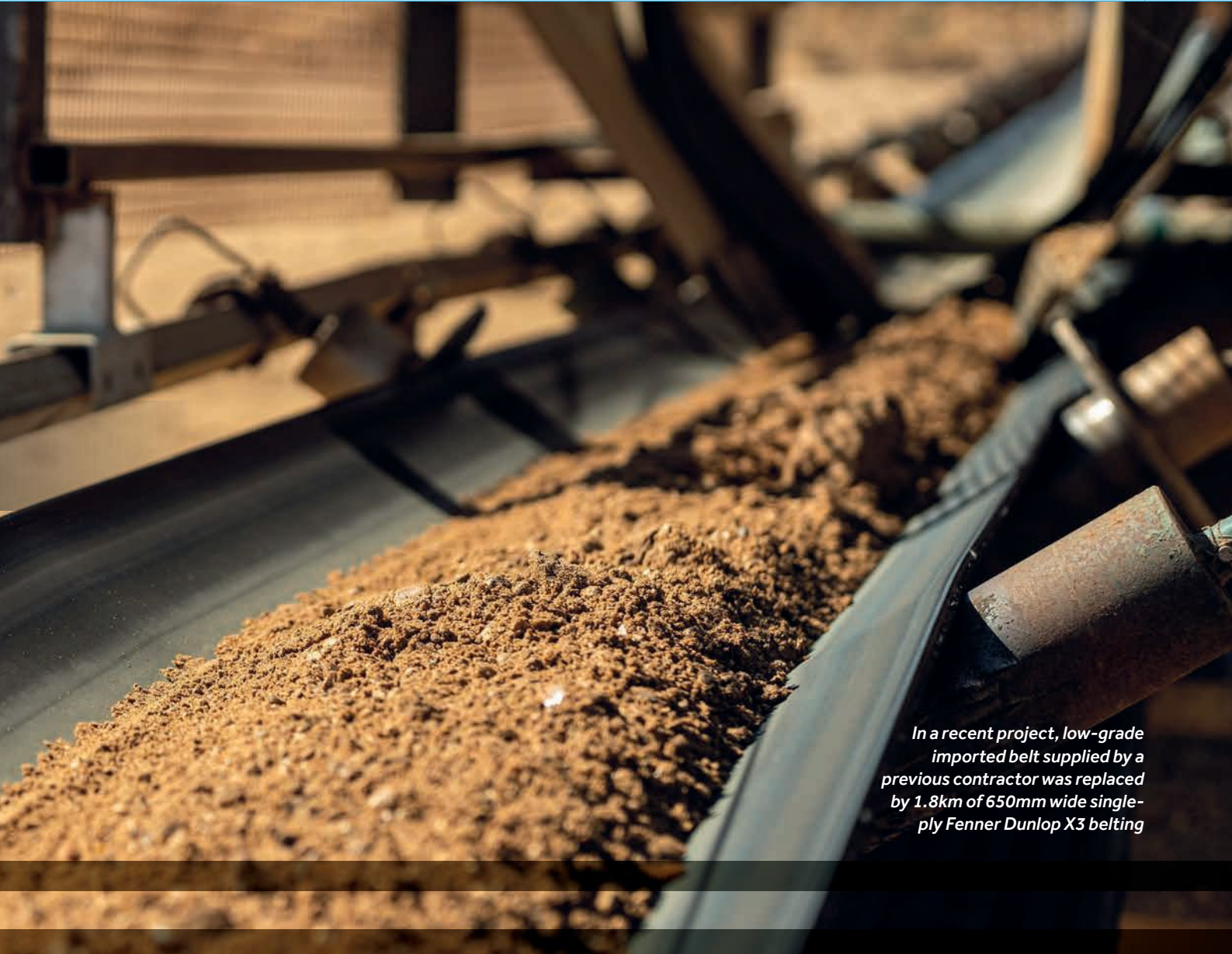
*Above: Fenner Dunlop reports users of its UsFlex 1000/2 belt achieving double the life of previous solutions with considerably less maintenance required*

#### **BELT AND BRACES APPROACH**

In the area of conveyor belt solutions, one of the most knowledgeable experts is Andries Smilda, who has enjoyed a varied career spanning more than 40 years and is currently a director at Fenner Dunlop in The Netherlands. Smilda has seen a lot of change over

the course of his time in conveying, not all of it positive. Alongside progress in terms of technical evolution on the materials and applications side, one

huge issue impacting the bulk materials handling sector has been the emergence of the cheaper products that are now flooding the global market. According to Smilda, these low-cost options are not good news: “There are huge differences in both performance and selling price of conveyor belts that are supposedly exactly the same specifications and standards,” he begins. “The reason stems from the manufacturer’s approach, in which there are two, very distinct sectors. The largest is the ‘low price, low quality’ sector, dominated by Southeast Asian manufacturers.



*In a recent project, low-grade imported belt supplied by a previous contractor was replaced by 1.8km of 650mm wide single-ply Fenner Dunlop X3 belting*

We, however, exclusively operate in the premium-quality sector, where our belts are widely recognised as the benchmark for performance and longevity."

How is this new breed of suppliers delivering their products so cheaply, then? "Raw materials can constitute more than 70% of the cost of making a belt, so the only conceivable way to achieve a considerably lower price is to use cheap, unregulated, low-grade materials that frequently do not meet the required quality standards," Smilda states. Refusing to compromise on its own materials, he adds that Fenner Dunlop belts only contain top-quality materials, so they consistently provide a working life of up to five times longer than the cheap imports. "Even if a competitor has a 50% lower price, our belts still easily provide the lowest whole-life cost."

**TECHNICAL TRENDSETTER**

When asked to detail the current trends in conveyor belts, Smilda proffers a bold answer: "I am proud to say that the only genuinely new trend in conveyor belt technology at the moment is unique to us, which is a ground-breaking range of super-tough single and dual-ply belts." Elaborating, he says: "All the belts in the X Range (Ultra X, Nova X and UsFlex) are engineered using a super-strong type of inner fabric, which we make

*Right: Andries Smilda, sales & marketing director, Fenner Dunlop*



in-house in the USA. They are much harder wearing and longer lasting, and have a resistance to ripping, tearing and impact that is several times greater than conventional multi-ply belts of an equivalent tensile strength."

Fenner Dunlop belts are used both at vast, open-air sites such as mines and in enclosed process plants across a variety of different industries. The company's director says that the two main challenges presented by indoor conveyors are premature wear and fire safety. "Internal conveyors tend to be quite short, so materials land on the belt surface and leave the belt surface at much shorter intervals, which wears the covers of the belt considerably faster than belts fitted



*Belts made using cheap, low-grade raw materials end up on the scrapheap far sooner*

on longer conveyors,” he explains. “All of the belts we supply are fitted with top-grade abrasion resistant covers that considerably exceed international standards, so they wear much more slowly than those of our rivals. Fire-resistant belting is another specialism of ours. In fact, our company invented the first fire-resistant conveyor belts. On average, our fire-resistant belts self-extinguish in one second or less whereas the EN ISO 340 ‘pass’ standard average is 7.5 seconds. You cannot put a price on safety.”

### CLEAN-UP OPERATION

One project that showcases Martin Engineering’s abilities was its work for Blue Phoenix, the UK’s leading processor of incinerator bottom ash (IBA) from Energy-from-Waste (EfW) plants. Describing the work, Andrew Timmerman explains: “After having problems with competitors’ belt cleaners at several sites, Blue Phoenix turned to us, which led to the installation of Pit Viper primary polyurethane blades on a few critical belts at five operations.”

The project was so successful that soon after, Blue Phoenix sought a national deal to install and maintain Pit Vipers on all 200 plus belts nationally. In addition, several of Martin’s ‘set-and-forget’ SQC2 Secondary Belt Cleaners were installed following successful trials.

*Below: An installation of Martin Engineering’s CleanScrape belt cleaner, which aims to improve plant efficiency and profitability*



Engineering, which develops bulk material handling solutions including belt cleaners, dust management solutions and industrial vibrators. “We are constantly seeking new ways to improve the efficiency and safety of our equipment by reviewing the newest trends in artificial intelligence (AI) and machine learning to determine how to integrate these advances with our products,” Timmerman states.

### HAPPY SHOPPERS

The company’s vast range of customers certainly supports this view. But Smilda reports plenty of positive feedback on the efficiency side as well as regarding safety. One recent project saw an OEM that produces screening machines approach Fenner Dunlop after experiencing problems with an indoor screening machine used to de-bark logs. “The original belt used on the machine by the OEM was an EP400/3 6+2 abrasion resistant,” he explains. “This belt failed after only 10 weeks use. The top cover was becoming badly damaged and eventually ripped by a large piece of heavy metal that had become trapped.

“Following a technical consultation and recommendations provided by Fenner Dunlop technicians, the original 400mm drum was replaced by a 630mm version and an UsFlex 1000/2 installed using a cold-bonded joint. The UsFlex

belt has now been running for over 2.5 years (130 weeks) without problem and without any notable signs of damage.”

If current solutions are already delivering such impressive results, is there much further that belt technology can go? Smilda certainly believes so. “We have advanced laboratories on both sides of the Atlantic where our R&D teams and rubber compound specialists are constantly working on improvements and new concepts. We regard single and dual-ply belts as the future of modern conveyor belting so we want to expand the range and maintain continuous improvement in every aspect of the belts we supply. In this business, standing still is equivalent to going backwards!”

### KEEP ON MOVING

One person who agrees with that last sentiment is Andrew Timmerman, global engineering manager at Martin

## SEAL THE DEAL

Having solved conveyor sealing problems for decades, the manufacturer of Spill-Ex, TBK Group says it has taken another step forward in sealing technology with SealTek, which offers next-level sealing whilst being simpler to maintain. The next-gen skirting system is designed to minimise spillage and dust at transfer points with minimal maintenance, solving the problem of inefficient conveyor belt sealing.

As ever in conveying, many different sealing solutions are available: but inferior ones often struggle to provide a consistent seal to the belt due to several factors. The forces encountered when loading can overwhelm the seal and force material outwards. The uneven nature of the belt profile, for example between rollers, can also result in gaps between the seal and belt occurring.

Using an appropriate belt support system, such as an impact bed, and the Spill-Ex skirt sealing system in tandem has considerably helped to minimise this problem.




work. There's even a modular transfer point kit that can be pre-constructed for easier and faster installation during scheduled outages.

### SAFETY SELLS

This year has seen revised rules on industrial dust emissions issued in the USA and Timmerman reports a "cascade effect" across the world. "We've found belt conveyor operators and workplace safety managers over several regions are rethinking their approach to how bulk material is conveyed, discharged and transferred." Luckily for

them, Martin Engineering had been observing this trend toward better air quality for a long time and has developed technology that seals transfer points from spillage and dust emissions. "Our belt tracking technology ensures the belt stays aligned, preventing spillage, which in turn generates airborne dust and lost profits," explains Timmerman. "When the cargo gets discharged, it's

essential that the belt is properly cleaned so that adhered fines don't continue on the return side of the belt in the form of carryback that can further exacerbate spillage."

Ultimately, when working in any type of enclosed plant, dust mitigation is critical. Corners can't be cut and investing in cheap, ill-suited solutions is a false economy. "Bulk handling and flow can be made safer and more efficient by properly enclosing systems and identifying choke points where flow can be obstructed," notes Timmerman. 

**"I am proud to say that the only genuinely new trend in conveyor belt technology at the moment is unique to us, which is a ground-breaking range of super-tough single and dual-ply belts"**

"This technology will be pivotal in future designs and concepts, including performance monitoring and data collection."

Timmerman points out that another focus for Martin Engineering is supply chain and material availability. "We are a global manufacturer, so by assessing how we can bring our most popular conveyor accessories to underserved industries and regions, we're able to raise awareness on workplace safety issues and considerably improve efficiency." Timmerman explains that this is frequently done via design and localisation. "A recent example was the reengineering our Tracker HD belt conveyor alignment system to be constructed using widely available materials to increase availability and affordability for markets with fewer resources for new equipment. A mistracking belt produces excessive spillage and may cause contact with the mainframe, which increases the potential for a fire."

Like Fenner Dunlop, Martin also differentiates itself from others in terms

of quality and safety.

"The design engineering team at our Center for Innovation in Illinois, USA, takes time to rethink their designs from a boots-on-the-ground perspective, Timmerman says.

"Equipment needs to be long lasting and reliable, as well as easy and safe to service and maintain."

Expanding on this, Timmerman notes that maintenance staff are often stretched thin and may take shortcuts to faster servicing that could create an unsafe procedure. "We mitigate this by designing equipment for easier installation, inspection and servicing. Equipment that slides out from the conveyor for external servicing or wear parts such as belt cleaner cartridges on our SQC2S Secondary Cleaner," he explains. The company also offers externally placed wearliner and skirting systems that allow for maintenance and replacement without chute entry or hot



*Andrew Timmerman,  
global engineering  
manager, Martin  
Engineering*