When the going gets tough on the front line

Despite the recession, specialists in the conveyors and screens sector are holding their own. Dunlop Conveyor Belting explains how their continuing investment in research and development is paying dividends and *RWW* takes a look at two screens manufacturers whose products stand up well to industry demands.

THE HUGE laboratory housed in Dunlop's manufacturing plant in the Netherlands is at the very heart of Dunlop's quality process.

It is here that every single batch of rubber compound is checked and tested to the limit before being allowed to be used to produce conveyor belts that are guaranteed to perform exactly as they are designed to do. They fully admit that it can be a painstaking process, but Dunlop insists that it creates a consistency in the quality of every belt they make.

Exceeding the highest international standards rather than just simply complying with them is a long established part of the quality culture that exists within the company and Dunlop insist that this can only achieved by having the most highly skilled technicians using the most sophisticated testing equipment available.

"We are very fortunate to have a very experienced and dedicated team of laboratory technicians and engineers here in Dunlop," says Sytze Brouwers, Dunlop's chief application engineer. "They need to be because conveyor belt technology is far more complex than some people might believe."

Brouwers points out that there are literally dozens of international standards relating to almost every conceivable aspect of a conveyor belt. He should know because he also happens to be the chairman of the international standards committee for conveyor belts.

Standing still is like going backwards

Dunlop maintains that because of the growing demand for longer belt life economy as well as rapidly evolving technology, failing to move forward is the equivalent of going backwards. So, despite increasing market austerity, especially in terms of research and development, they have taken the bold step of expanding their laboratory and investing huge amounts in the very latest technology.

Technical director Dr Michiel Eijpe has been charged with the task of heading up a new wave of R&D. "Our competitors seem determined to try every trick in the book to cut costs so that they can offer lower prices but the old saying that you only get what you pay for has never been truer" says Dr Eijpe, "so we are sticking to the principle of greater economy for our customers through longer belt life."

Thanks to the developments that take place in the laboratory, Dunlop is creating 'new generation' conveyor belts that are increasingly able to withstand just about anything that can be thrown at them: from highly abrasive, razor sharp materials to ozone pollution and from extreme heat to extreme cold.

New demands, new tests.

The world of conveyor belts is changing in other ways just as quickly and none more so than the awareness of health and safety and the environment. For example, Dunlop Conveyor Belting claims to be the very first conveyor belt manufacturer to achieve full compliance with REACH (Registration, Evaluation and Authorisation of Chemical substances) regulation EC 1907/2006, which came into force in 2007. And once again, it was the Dunlop laboratory boffins who made it happen. All European manufacturers (not just those who make conveyor belts) are legally obliged to comply with the regulations relating to chemicals, preparations (mixtures) and substances used to create finished products. Perhaps not unsurprisingly, many European manufacturers have chosen to ignore this legal requirement because of the impact on production costs.

Due to the increasing importance of ozone resistance, Dunlop also invested in the latest, testing equipment so that they could introduce mandatory testing to EN/ISO 1431 international standards.

Although the damaging effects of exposure to ozone are now internationally recognised, what is less well recognised are the extremely harmful effects on the cover surfaces of rubber conveyor belts.

Belts that do not operate under shelter are prone to surface cracking, which has serious consequences in terms of the performance of the belt and its working life as well as significant environmental and health and safety issues, especially where fine particles penetrate the cracks and are then discharged (shaken out) on the return (underside) run of the belt.

To combat this problem, Dunlop's technicians successfully focused on providing increased protection by using special additives in all rubber compound recipes, thereby extending the operational life of Dunlop belts further still. The same 'we can do it' approach resulted in not just some but all their belts exceeding EN ISO 284/DIN 22104 electrical conductivity standards so that they can be used within ATEX regulated areas. And where ISO or DIN standards do not exist, such as resistance to oil and grease, Dunlop promptly apply a suitably tough alternative, in this case the ultra-demanding American ASTM D 1460 standard. They do love a challenge.

Proving the difference

When not testing their own belts to destruction, the lab technicians also have a constant stream of competitors belts to test in order to produce scientifically based performance comparison data sheets that their colleagues in sales use to prove the difference between Dunlop and 'normal' belts.

Sales and marketing director Andries Smilda is naturally a big supporter of this work.

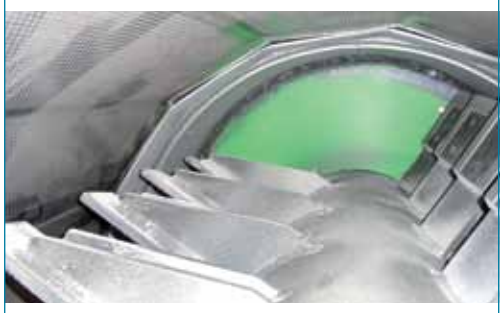
"In any business, you always need to keep one eye on the quality of the competition and from our point of view, the results are invariably motivating. One recent example was a so-called fire resistant belt that burned like paper," says Smilda with a twinkle in his eye.

So if you thought that all conveyor belts were just long pieces of black rubber and that there is not much to choose between them then think again. Think of men and women in long white coats working quietly behind closed doors. RWW

Thanks to work in the laboratory, Dunlop is creating conveyor belts able to withstand harsher conditions

Robust screens

EE Ingleton Engineering



TONY HODGES, MD of EE Ingleton Engineering, tells *RWW*: "In recent years we have developed screens for use in arduous environments such as processing truck tyres and mixed municipal waste.

"To achieve the extended wear life which operators seek, we have developed through-hardened screens in steel grades with a combination of hardness and fine carbide grain structure to produce durability superior to that of other common wearplate materials. These screens have typically been made in fairly thick plate.

"We have now applied the lessons learned in developing granulator and shredder screens to produce thinner, finer through-hardened screens for such applications as turbo-driers which are increasingly being used by processors in the recycling of plastics. Screens originally supplied by the OEMs for these machines have typically been fabricated in stainless steel, demanding frequent replacement and high screen prices. By developing a modular screen solution for a number of popular turbo-drier types, we have helped to substantially reduce operators' costs by reducing unit cost and extending screen life."

Baughans

BRITISH-MADE BAUGHANS barrel screens includes the aptly-named Mammoth which has the capacity for processing around 100 tons of waste material per hour.

With a 14.5m x 2m barrel length and 6m screen with hole sizes to suit customers' needs, the Mammoth is fitted as standard with a three phase 415 volt drive, seven ton capacity feed hopper, variable speed belt feed hopper and hydraulic drive.

Clients who have installed the Mammoth include skip hire specialist, Westridge on the Isle of Wight, who opted for the complete Mammoth recycling system which deals with up to 120 skips per day, as well as waste management specialist, Armstrongs, where the feeder on the Mammoth is fitted with a magnetic head drum to extract metals from fines.