

Hitting below the belt

Explaining the underhand methods used by conveyor belt manufacturers in South East Asia to increase their market dominance.

Conveyors are a major part of any bulk handling stockyard, writes *Leslie David*. As any big brand owner in the world will tell you, impersonation, counterfeiting and plagiarism are a constant problem. The higher the level of brand recognition and the more of an association the brand has with premier quality then the higher the chances that an unscrupulous manufacturer somewhere will try to take advantage. Growing over 10,000% in the last two decades, counterfeit products exist in virtually every industry sector. Even now, it seems, in the world of industrial conveyor belting.

Coinciding with that time, the biggest single source of rubber belting imported into Europe is from South East Asia, the vast bulk of which is from China. As with the approach they use for virtually every other market, the strategy is based on mass volume manufacturing at a barely acceptable (and often unacceptable) standard of quality at hugely subsidized prices. Much of the European-based conveyor belt manufacturing capacity has disappeared as a result, creating an unhealthy reliance on low-grade imports.



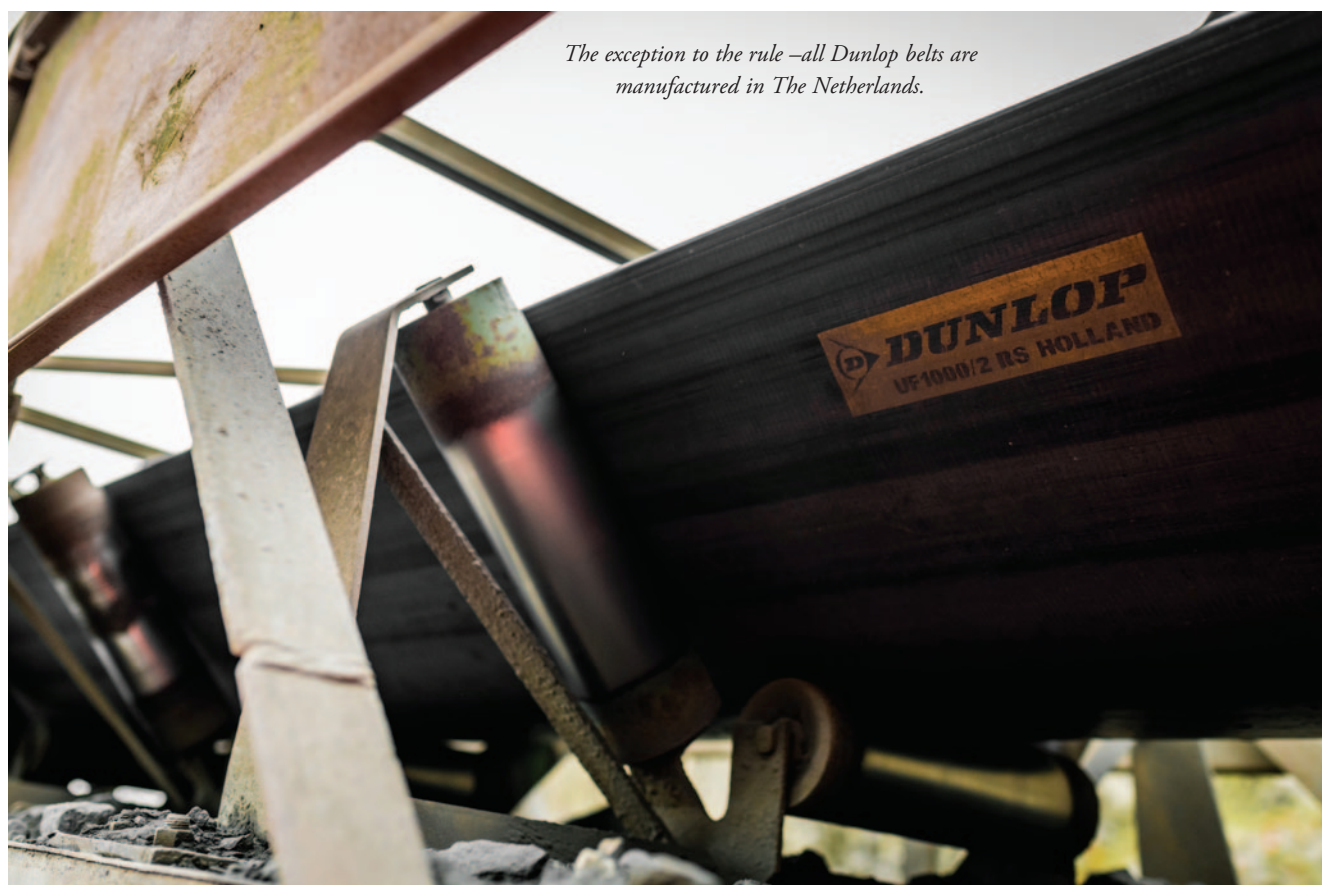
Indeed, with only one exception, European manufacturers now supplement their production with imported belting.

That one exception is Netherlands-based Dunlop Conveyor Belting which, despite the best efforts of its competitors in Asia, has continued to prosper thanks to an unwavering market strategy of selling premier quality belts that are exclusively manufactured in its own facilities. The 'unique selling proposition' that it uses in the face of the extremely low prices being offered by Asian manufacturers and their importers is one of 'lowest lifetime cost'. To support its arguments, Dunlop provides a wealth of technical evidence based on

laboratory testing and real-life examples in the form of numerous case studies that demonstrate how its belts can quite easily last for up to four or five times longer than low grade import belt. To understand the technical reasons why there is such a vast difference in longevity and performance, it is first necessary to understand the methods used by Asian manufacturers that enable them to offer prices that, for apparently similar specification products, are so much less than their European-based competitors.

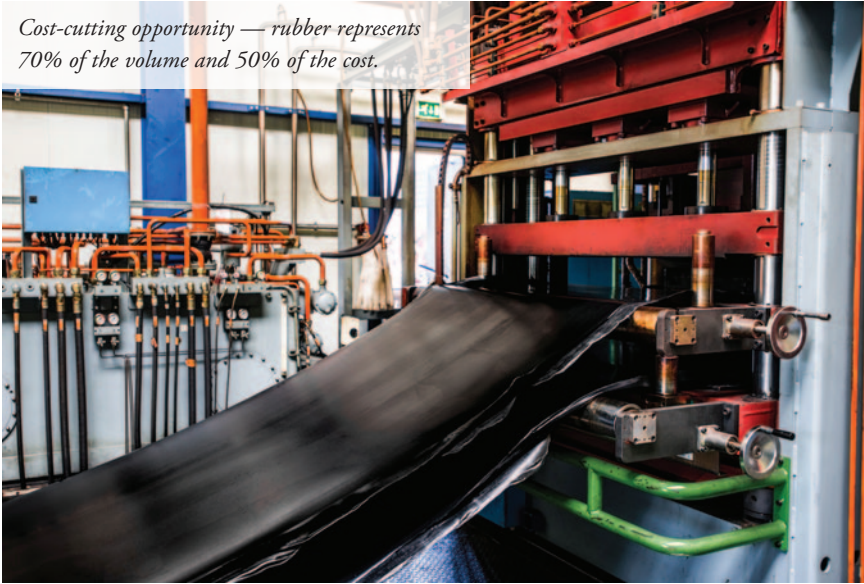
THE ART OF DECEPTION

It is a common misconception that



The exception to the rule – all Dunlop belts are manufactured in The Netherlands.

Cost-cutting opportunity — rubber represents 70% of the volume and 50% of the cost.



products imported from China are of a similar quality but simply cost less because labour costs are much lower. The reality is that in the case of conveyor belts, the very high level of automation nowadays means that labour costs do not make a significant difference to the ultimate selling price. As a rule, the labour element represents around 10% of the total cost whereas the materials used to make a conveyor belt can constitute up to 70% of the ultimate cost and are available on the global market. As with just about any product, price ultimately determines the quality. Logically, this means that if there is a big difference in price then there must be a comparable difference in the quality of the materials used.

It is the quality of the rubber covers, in particular the ability to resist wear and tear, which has the biggest influence on the durability and operational lifetime of a conveyor belt. Rubber usually forms at least 70% of the volume mass of a conveyor belt and more than 50% of the cost. It is therefore the single biggest cost-cutting opportunity.

Because of its adaptability, most of the rubber used to make conveyor belts is synthetic. Dozens of different chemical components and substances are used to create the numerous different synthetic rubber compounds needed to cope with the different demands that may be placed upon them. These chemical components and additives are very costly so a combination of using low-grade chemicals at the absolute minimum levels or in some cases not using them at all, all contributes towards the manufacturer's 'lowest possible price' objective.

CONVENIENT OMISSIONS

Perhaps the best example of these



Shorter lifespan – belting imported from Asia is very rarely ozone and UV resistant.

'convenient omissions' concerns ozone and ultra violet light. From a product longevity point of view, there is no question that all rubber conveyor belts need to be fully resistant to the damaging effects of ozone and ultra violet light. This is because at low altitude ozone becomes a pollutant. Exposure increases the acidity of carbon black surfaces and causes reactions to take place within the molecular structure of the rubber. This has several consequences such as surface cracking and a marked decrease in the tensile strength of the rubber.

Likewise, ultraviolet light from sunlight and fluorescent lighting also accelerates deterioration because it produces photochemical reactions that promote the oxidation of the surface of the rubber, which results in a loss of mechanical strength. Once again, laboratory testing consistently reveals that belting imported from China and Asia in general is very

rarely, if ever, ozone and UV resistant. This is almost certainly because the anti-ozonants that should be used during the mixing process of the rubber compounds is seen to be an avoidable cost.

UNREGULATED

Manufacturers based in Asia are not subject to REACH regulation or EU regulations concerning the use of potentially hazardous chemicals that pose hazards to human health and the environment. This includes those that may have category 2 carcinogenic classifications as well as Persistent Organic Pollutants. This means that they are free to use unregulated raw materials that cost much less on the global market compared to their regulated counterparts, even though those materials may be prohibited or have strict usage limitations within Europe.



Asian manufacturers are not subject to EU regulations concerning the use of dangerous chemicals and pollutants.

One of the biggest concerns involves short-chain chlorinated paraffins (SCCPs). These are commonly used by Asian manufacturers to reduce production costs by accelerating the vulcanizing process. REACH regulations clearly stipulate that SCCPs should either not be used at all or at least only used on a very restricted basis because of their category 2 carcinogenic classifications. Their presence can usually be identified by the unpleasant smell of the rubber whereas good quality rubber usually has very little smell at all.

A key component contained in every black rubber conveyor belt is carbon black. It makes up around 20% of a typical rubber compound. The important role that it plays should not be under-estimated. For example, it prolongs belt life by helping to conduct heat away from the surface area of

the belt, thereby reducing thermal damage. It also acts as a reinforcing compound. Belts offered with significantly lower prices are virtually certain to contain carbon black that is of a much lower quality that has been produced much more cheaply. For example, by burning scrap car tyres without, of course, the hindrance of compliance with environmental regulation.

Other methods used to minimize rubber costs include the use of recycled rubber of highly questionable origin and cheap 'bulking' fillers such as chalk, which is used to replace part of more expensive rubber polymers.

HIDDEN SAVINGS

Although they may be the same basic specification, there are often huge differences in the quality of the fabric plies between one belt and another. This is because cheaper, lower quality fabrics are used where the more costly nylon transversal weft material is kept to a minimum. Although the required tensile strength may be achieved, rip and tear resistance is noticeably reduced and the elongation (elasticity) is too low. A fact confirmed by countless laboratory tests of belts imported from Asia is an even more blatant deception involving the use of totally polyester (EE) fabric plies in a carcass that has been sold as having the much more common EP carcass (polyester/nylon mix) construction. The whole basis of using fabrics that contain a mix of polyester and nylon fabric (EP) is that it has the best balance of mechanical properties including allowing a conveyor belt to run straight and true, to trough, to flex round pulleys and drums, stretch, provide sufficient transversal rigidity, longitudinal strength and much more besides.

Lower-grade carbon black can be produced cheaply by burning scrap car tyres.



The use of totally polyester (EE) fabric compromises a whole range of essential mechanical properties*. The biggest danger is that a polyester weft can cause low transverse elasticity, which reduces both the troughability and impact resistance of the belt as well as causing tracking issues. In addition, less weft in the belt can also reduce rip resistance, fastener strength and the ability to handle smaller pulley sizes. The seriousness of the detrimental physical effects should never be underestimated.

The fabric plies are a major cost component in any multiple ply conveyor belt. However, polyester (EE) fabrics cost around 30% less than EP so using cheaper polyester fabric is a big help when trying to

achieve the perception of a lower 'like for like' price*. As far as the manufacturer using these underhand tactics is concerned, they know that it is highly unlikely that the end-user will ever have laboratory tests carried out that would reveal their trickery and dishonesty.

EVERYTHING IS FAKE BUT YOUR MOTHER

Dunlop places considerable emphasis on being contactable and accountable for the quality of its products and backs it up with the reassurance of a 24-month warranty. The company sees this as an important advantage over its rivals, especially those based in Asia. It has been a hard and long-running battle but in recent years there have been strong indications that the market is turning away from low grade import belts and realizing the far greater value of using premium, long-life belting. As if in answer to this trend, one Chinese manufacturer, Zhejiang Fuda Rubber, has

**Author's note: The use of fabrics made entirely of polyester (EE) has its place in certain belt types and constructions. However, in those cases the declared specification of the belt should clearly be EE and not EP.*



Not what they seem — the use of totally polyester (EE) fabric instead of polyester/nylon mix (EP) in order to cut costs can cause significant problems.

DUNLOP
CONVEYOR BELTING

GUARANTEE OF QUALITY

THIS IS TO CERTIFY THAT BELTS MANUFACTURED BY DUNLOP CONVEYOR BELTING ARE GUARANTEED FOR A PERIOD OF 2 YEARS FROM THE DATE OF DELIVERY AGAINST PREMATURE FAILURE CAUSED BY FAULTY WORKMANSHIP OR MATERIALS

ZHEJIANG FUDA RUBBER CO., LTD.



Not the real thing - ruined and worn out multi-ply belting imported from China.

stepped up the level of dishonesty by audaciously claiming to be a manufacturer of Dunlop conveyor belts. To support this deception, it has actually adapted a Dunlop Conveyor Belting quality guarantee certificate by adding its name and logo at the top and their 'signature' and stamp and company details at the bottom.

It seems hard to believe that something like this could happen but should we really be surprised? After all, 70% of all counterfeit goods seized globally come from China. The Chinese often joke that in China, "everything is fake but your mother" and "we can copy everything except your mother." It may be a joke to them but it is certainly no joke to honest manufacturers such as Dunlop and indeed end-users that have effectively been tricked into buying what they believe to be genuine Dunlop quality belts, only to discover to their cost that they bear no comparison in terms of performance, safety and longevity.

Andries Smilda, Dunlop Conveyor Belting's sales & marketing director, is understandably outraged. "We will not stand by and allow this kind of cheating and deception to take place. Apart from anything else, we will use this example to highlight the lengths that belt manufacturers in Asia will go to in order to sell their belts to unsuspecting customers. If anyone in the market was unaware of their dishonest practices we will now do all we can to make sure that they know otherwise"

SPOT THE DIFFERENCE

Compliance with CE quality standards is increasingly being stipulated by purchasers



CE mark,

China export.

of industrial conveyor belts even though conveyor belts are not a product category that is subject to specific directives that are required to be CE marked. The letters 'CE' used in the CE Marking are the abbreviation of French phrase 'Conformité Européene' which literally means 'European Conformity'. By placing the CE marking on a product, a manufacturer is declaring conformity with all of the legal requirements to achieve CE marking. The manufacturer is therefore ensuring validity for that product to be sold throughout the EEA, although the mark does not mean that the product was made in the EEA. The danger is that some conveyor belt manufacturers use CE marking to create an illusion of quality and safety based on the understandable assumption that goods with CE marking is proof that the product meets EU quality standards even though no such standards exist.

Unfortunately, Chinese manufacturers have ingeniously created a very similar mark that the majority of consumers may mistakenly believe is a genuine CE mark of European conformity but in reality actually means 'China Export', meaning that the product was manufactured in China.

CONSEQUENCES

The consequences of these dishonest activities are much more far reaching than many might realize. As the market share of Asian belt manufacturers grows, European-based conveyor belt manufacturing capacity is diminishing. As I touched on earlier, this



Buying better quality, longer lasting belt saves money and the environment.

is creating an unhealthy reliance on low-grade imports and with it the loss of options for those end-users who genuinely need to use high-grade belting for their most demanding applications as well as those where fire safety is paramount.

Genuine European-made quality belting can easily last for up to four or five times longer than belting imported from Asia. The first big benefit to end-users is a vastly reduced 'lifetime cost' together with increased productivity as a result of far fewer stoppages for repairs and replacements. There are also direct consequences in terms of the impact on the environment. Firstly, belts with increased longevity mean that the amount of belting that first has to be produced and which is ultimately sent to the scrapheap could easily be halved. Yet another important environmental benefit of sourcing European-made belts is the vastly reduced carbon footprint created by the transportation of a few hundred kilometres within Europe compared to the several thousand kilometres that belts have to travel from Asia.

I would like to think, especially in light of the underhand practices and fakery that I have described, that end-users in Europe and Africa and the Middle East will question the sense of relying so heavily on Asian manufacturers for their supply of conveyor belts in the future.

ABOUT THE AUTHOR

After spending 23 years in logistics management, Leslie David has specialized in conveyor belting for over 15 years. During that time, he has written numerous technical guidance features and papers and has become one of the most published authors on conveyor belt technology in Europe.

