





TIME IS MONEY

When comparing imported conveyor belts with those manufactured by major European brands the price discrepancy is large, yet conveyor specialist Leslie David explains why this may be justified when considering the ‘whole life’ cost.

For most cement plants, conveyor belts are an indispensable part of the cement manufacturing process. They can also be a considerable overhead. The conveyor belt market is extremely competitive, something often signified by huge variations in the selling price of belts that are supposedly the same specification. No matter what price one pays, it is how long the conveyor belts last before they need to be replaced that actually dictates how much they cost. So, are cement producers getting the best value for money?

‘Price is what you pay, cost is what you spend’

It is fair to say that the ‘headline price’ of an item usually has the biggest influence on the purchasing decisions consumers make both in their professional and personal lives. In private life, it is usually simply a question of ‘can I afford it?’ but in business it is most often budgetary constraints that come first, followed by a number of other considerations. However, buying something because it is ‘competitively priced’ compared to other offers but which then proves to be unreliable or unsuitable can be a very costly mistake.

To calculate the true cost to a business, particularly when buying complex and vitally important components such as conveyer belts, it is first necessary to include as many other directly related costs as possible in the calculation. The ‘above the line’ price that is paid for a conveyor belt is one thing but the perhaps less obvious ‘below the line’ costs are what companies will actually spend. People who are responsible for conveyors will probably know how much has been lost in terms of volume when there is an unplanned stoppage, but they may not necessarily know the full cost associated with that lost output.

Not all conveyor belts are created equal

Although they may outwardly look the same, there are often huge differences between the performance of one conveyor belt and another, even when they both claim to meet certain specifications and international quality standards. Compared to

other industries, the cement industry arguably places the toughest demands on rubber conveyor belts because nothing destroys a rubber conveyor belt faster than high temperatures. There are numerous, well-documented reasons for these huge differences



There can be a very big difference between one conveyor belt and another.



The price ultimately determines the quality and longevity.



'Throwaway' imported belting is more profitable for contractors than higher grade, European-made belts.

in performance and longevity, but they are not always easy to spot at the buying stage.

Ironically, one of the best warning signs is the price. The biggest source of rubber belting imported into Europe is from China, which now dominates the market. The approach these suppliers use for the conveyor belt market is the same as is used for virtually every other industrial market, which is mass volume manufacturing at a barely acceptable (and often unacceptable) standard of quality at hugely subsidised prices.

It is not uncommon to see belts manufactured in Southeast Asia that are half the price of those being offered by European manufacturers. However, as with virtually any product, price ultimately determines the quality. In the case of imported conveyor belts, the difference in quality is invariably reflected in the need for repeated repairs, a general lack of resistance to wear and heat damage and ultimately, much shorter operational lifetimes. Indeed, all the evidence points to top quality European-made belts being able to provide up to four or five times longer operational lifetimes than those of their Asian counterparts. Their overall cost over their working life is therefore appreciably less.

Unfortunately, it is extremely rare for those who are responsible for purchasing and capital expenditure to understand the technical differences associated with the performance and longevity of a conveyor belt and consequently do not consider them. To be fair, they cannot be an expert on every product they are required to source. Trying to convince buyers and accountants can be difficult but it becomes a lot easier when they are presented with an argument that is based on factual, 'whole life' cost comparisons.

Calculating 'whole life' cost

The principal of 'whole life' cost is simply the sum total cost (excluding VAT) of the conveyor belt itself plus the cost of its installation including splicing. The time spent removing and replacing the old belt before normal service can be resumed should be included as part of the 'lost output' calculations. Added to this are the labour and material costs incurred in repairing the belt (including the splice joints) during its lifetime plus the estimated costs of the production lost while those running repairs are carried out. These calculations are easier to make if conveyor maintenance and repair is contracted out to a vulcanising company. However, if these functions are performed 'in house' then it is important that accurate maintenance records are kept.

In their best interests

It is necessary to include a quick word here regarding outside contractors because many plants outsource routine conveyor maintenance, repairs, splicing and belt fitting to external vulcanising and maintenance companies. Such contracts usually include the supply of replacement components such as rollers and the conveyor belts themselves. Consequently, these contractors can have considerable influence on

technical decisions including trialling a different belt or belt supplier. However, although it helps to reduce fixed overhead costs, outsourcing arrangements can also expose the site owners to potential waste and inefficiency.

If a contractor is charging for carrying out repairs and supplying replacement components, then it is fair to argue that it is not necessarily in the best interests of that contractor to provide the most reliable and longest lasting equipment. This is because they are effectively being 'rewarded' for each repair, failed component, and prematurely replaced conveyor belt. Supplying imported belting provides a much greater profit margin compared to supplying higher grade, European-made belts. In fact, this has arguably been a key driver behind the ever-increasing use of low-priced, 'throwaway' imported belting. This makes the case for making purchasing decisions based on the 'whole life' cost even stronger.

Time or tonnage?

Having collated the various elements of cost, the final step is simply to divide the total. This can either be done by the period of time that the belt has run or, if known, the amount of material conveyed during its operational life. On conveyors that are usually running non-stop during the day then time is usually the best measure. However, if the conveyor only operates intermittently then using tonnage as the basis for the calculation may prove more accurate.

Choosing a different supplier

Having calculated the cost of the belt in use, the question then becomes one of comparison. It may well be that producers are shocked by the high level of costs involved, in which case it becomes easier to make the decision to try something different. Either way, there is little or no point in making the calculation unless there is something to compare it against. This, of course, means trialling a higher grade of belt or a different type of belt entirely, perhaps both.

Although manufacturers at the bottom end of the market are plentiful, there are relatively few premium-grade European manufacturers to choose from. However, even at the 'top end', cement plant operators still need to tread carefully because surprisingly, with only one exception, European manufacturers are now supplementing their production with imported belting. This means that operators may inadvertently replace an under-performing imported belt with another imported belt of a similarly poor standard, albeit from a different supplier.

At the very least, plant operators should always insist on a certificate of origin from the manufacturer when requesting quotations. A little research is also a good idea, especially checking a potential new supplier's website for product data, specific performance claims, testimonials, and case studies.

Predicting the lifespan

Without doubt, the most challenging aspect of selecting conveyor belts based on 'whole life' cost is that it can be difficult to accurately predict the lifespan of a new type of belt or one from a new, untested supplier. As one might expect, suppliers of conveyor belts, regardless of their reputation for quality or otherwise, can never guarantee how long a belt will last before needing to be replaced. There are simply too many factors involved. However, do not despair. Although there is inevitably some degree of risk in almost any business decision, if a tried and trusted manufacturer is chosen, especially one actually manufacturing in Europe, then the potential gains can be considerable. As the old saying goes, 'If you never try something different then you will always get what you already have'.

As mentioned earlier, it is not uncommon to see good quality European-made belts provide up to four or five times longer operational life. For example,



'Whole life' cost calculation.



Good quality European-made belts can provide up to four or five times longer operational lifetime.

a maintenance leader in a cement plant in Columbia recently reported that, “We had to replace the heat resistant belt on a critical conveyor carrying hot clinker after only 10 months. We had to re-build the splice joint many times. When we fitted [a premium belt from a European supplier], it lasted for more than three years and we never had to re-build the splice”. No doubt that the high-grade belt would have an appreciably bigger price tag. However, it is highly unlikely that it would have been 260% more expensive than its cheaper, low-grade predecessor, so the cement plant saved time, money, and lost output.

The best approach is to select a conveyor that places the toughest demands on the conveyor belts or, in other words, has had the most problems in terms of the frequency of repairs and replacements. The next step would then be to discuss the application and the plant's specific requirements with an experienced representative of each potential supplier. If the selected conveyor is particularly problematic then it is often a good idea to make absolutely sure that the specification of the belt is correct by using a belt calculation programme overseen by a professional conveyor belt engineer.

For conveyors where heat damage such as delamination is a problem, fitting a conveyor belt that has been specifically engineered for the task is invariably the most cost-effective solution. Specialist heat resistant

belts such as Dunlop Deltahete and Dunlop Optima Heat Xtreme will provide much longer lifetimes because that is exactly what they have been designed to do.

Standing the test of time

Thanks to technological advances, the effectiveness and value of modern-day conveyor belts should be measured over several years rather than just a year or two. In fact, in the cement industry a growing number of belts only last a few months and, in some cases, only a matter of weeks before needing to be replaced. Cement plant engineers should never accept that it is not possible for a belt, even one on the toughest of applications, to last many times longer than is currently being achieved.

It is no coincidence that the decline in operational lifetimes has been accompanied by the increased use of low-grade imported belting. As the cost of energy for European manufacturers continues to soar, the price gap will continue to widen, certainly for the foreseeable future. Ironically, this actually strengthens the case for calculating the cost of conveyor belts on a ‘whole life’ basis rather than simply the ‘headline’ price. Although there will always be a desire to reduce expenditure, belts that need frequent replacement have exactly the opposite effect. Conveyor belts that will stand the test of time will invariably prove cheaper in the long run. ■