New steps in recycling SUSTAINABILITY

A respectable circular shoe

In 2017, old safety shoes all meet the same fate: they disappear into the incinerator. This is about to change. October will see visitors to the major trade show A+A introduced to the world's first almost completely circular safety shoe.

by Peter Passenier

Spend a while chatting with Pascal van Ophoven and you'll begin to see a few things in a different light - your bannister, garden furniture or car armrest, perhaps. Or maybe your leather handbag, shoelaces or belt. Not too long from now, it seems, they could all be made from old safety shoes. Van Ophoven is a marketing manager at Emma Safety Footwear, a shoe manufacturer launching quite a novelty at the A+A show in Düsseldorf. “We'll be presenting a circular safety shoe there. When it wears out, all its component materials will be re-used in all kinds of different products - with no loss of quality and no toxic effects.”

Clothing industry

A novelty indeed, as little progress has been made in the recycling of safety shoes thus far. “We're playing catch-up with the clothing industry in that respect,” says Van Ophoven. “They've already made great strides in this area. That makes sense, though. Take a safety vest, for example - it's just a length of fabric. They generally consist of only a few materials that are easy to separate. With shoes - particularly safety shoes - it's a different story. Those are specially made to withstand extreme conditions, so they're difficult to dismantle. They're also composed of a range of different materials, which makes recycling more tricky.”

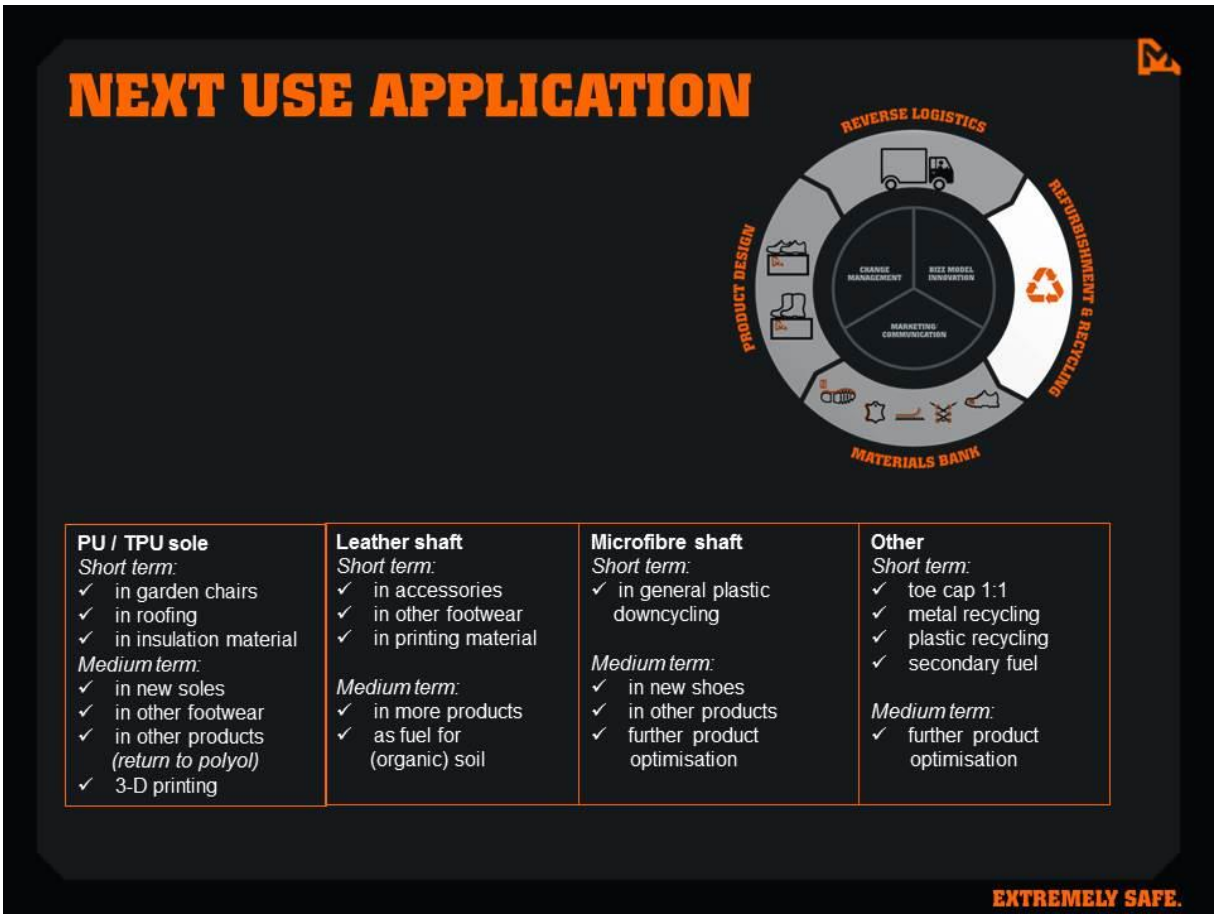
Some cautious attempts at recycling had nevertheless been made - and not by the manufacturers at first. “Two years ago I was speaking with a contractor who reprocesses metal from waste incineration,” says Van Ophoven. “He was telling me he already used to separate the old steel toecaps and soles, selling them as scrap iron. We were at the A+A show around that time, and we made a promise then: we would introduce a widely-recyclable shoe within two years.”

Manufacturers looking to carry out such a plan would need a full analysis of their products - they would need to be able to determine which components and raw materials are suitable for entering a cycle. “We did that in detail,” says Van Ophoven. “Some components will need to be altered based on the *Cradle to Cradle* programme, which assigns a letter to every material used. This is an A, B, C or X, where an A is completely recyclable - rubber springs to mind. An X means that recycling is practically impossible, as is the case with PVC. We were using PVC in the little label that contains our logo, for example. Replace that with rubber, and manage to replace all the other Xs with As, Bs and Cs, and you can expect to gain a cradle-to-cradle certificate for material use.”

Entire chain

But for an environmentally-conscious shoe manufacturer, this is only the beginning. To supply a truly eco-friendly product, after all, you have to look at the entire production chain - so not just at the product itself, but at the processes behind the manufacturing. “Safety shoes contain leather,” says Van Ophoven. “And this is usually tanned with chromium. This isn't good for the environment, because it means using chemicals. That's why we want to switch to organic (i.e. vegetable-tanned) leather. Making the shift would be tricky, as this method of leathering can influence the end product's durability and waterproofing. That's precisely where we can't make any concessions, though, as our first priority naturally remains safety. Another point for consideration: we'll need to make sure our leather producers in Brazil and India are well-supervised throughout the switchover period.” Isn't it even more eco-friendly to replace that leather completely? That may be an option in time, Van Ophoven thinks, but not just yet. “We've also made shoes using microfibre. These meet the ISO standard, but they're

mainly used in the food industry, where the commercial risks are smaller; shoes like those turn out less tough and sturdy, and are less resistant to wear-and-tear.



They're also more susceptible to punctures from sharp objects." Looking at the entire chain also involves more humane personnel management. "We have a long tradition of taking on staff through social employment programmes," says Van Ophoven. "If we'll shortly be recalling our worn-out safety shoes from customers for dismantling, we'll have even more opportunities to offer to these people. We'll also be taking a critical look at our international suppliers. We've made clear agreements with them on safe working conditions, with no child labour. They have to produce certificates and our partners conduct regular visits to inspect their social security arrangements."

Market

A circular shoe, made in respectable conditions. According to Van Ophoven, the demand for this is also driven by the market. "When we're bidding for a public tender, they ask for documentation, for proof that the shoes were made without child labour. You see this same social engagement with companies, certainly the larger ones. They're also working on environmental efforts, and more and more are hiring QHSE Managers. Some are even including circularity in their strategic planning."

And so Emma will present its new safety shoe in October. Almost completely circular - which is not to say that old shoes will be reborn as new ones.

"On the one hand that's not a requirement, and on the other it's not feasible yet," says Van Ophoven. "Yes, we could re-use those steel toecaps and soles, but the leather will gain a new lease on life in laces or handbags. We've found a new use case for all our components, be it in shoes or in other products - wherever they're most suited. You'll even find some of them in bannisters, garden furniture and car arm rests. But remember: I'm saying this in 2017. Alongside these efforts, we're working

towards more recycled components in our shoes, whether from old shoes or other products. In five years' time we'll have progressed even further, including in the area of circularity.”

Collaboration

The new circular safety shoe is the result of a collaboration between a range of partners:

»» Emma Safety Footwear, the Dutch manufacturer of safety shoes and boots;

»» FBBasic, a specialist in the development of circular products and recovering raw materials;

»» a number of technical engineering service providers.

Around 60 mesh containers have recently been introduced at a large number of ENGIE premises in the Netherlands to recover all old workwear and safety shoes from any brand.