

A STORY WITH VARIOUS PERSPECTIVES

SUSTAINABILITY INCLUDES A LOT MORE THAN JUST ATTENTION TO THE PRODUCT ITSELF



Jens Fandrey and Lena Edinger (Kleiberit)

“Renewable is the most important thing we can offer”

Sustainable and ecologically responsible working has outgrown the stage of mere product thinking for some time now. What can a far-reaching 'green' way of working look like when we talk specifically about adhesives? We ventured into the market and found the ideal interlocutor in Kleiberit. Based in the southern German town of Weingarten Baden, Kleiberit has more than 75 years as a specialist in adhesives, with the flooring industry as one of its main markets.

Our choice of Kleiberit did not come by chance. After all, in previous editions of Floor Forum International, we briefly highlighted how the company strives to implement sustainability and 'green' thinking to the maximum in all areas. There are the adhesives themselves, of course, but there is so much more besides: using 'clean' energy, transport management, waste treatment, dealing with packaging materials, and so on.

Jens Fandrey, technical director Hot Coating & Surface Technology, and Lena Edinger, project manager wood and construction and technical sales assistant, provide further explanations at this company which, with 725 employees worldwide, achieves an annual production of about 60,000 tonnes of adhesives. In the process, it exports around 85% of its products, offers around 500 active products and relies on a network of 75 sales engineers worldwide, which clarifies that, in the case of Kleiberit, we are dealing with a world leader.

Comprehensive CCF analysis and PCF system

"It seems best to first clarify the company's efforts in general," Jens Fandrey opens. "Important to know, for example, is that we are currently conducting a comprehensive CCF [Corporate Carbon Footprint] analysis to assess all our processes, identify areas for improvement and initiate the necessary changes. Furthermore, we are developing a system to generate Product Carbon Footprints [PCF] to improve targeted collaboration with customers to promote the development of environmentally friendly products. Our company also has dedicated charging points for electric cars, with free charging for employees, for whom we even provide work bikes."

In terms of products, we already proposed a very innovative solution a few editions ago. Back then, we specifically talked about adhesive systems with bio-content and micro-emission [ME] PUR hot melt adhesives. It doesn't stop there, of course, Lena Edinger clarifies how far the company goes.

Bio-based raw materials

"One way we implement sustainable and green thinking is through the use of bio-based raw materials. Here it is good to know that all our adhesive groups are included in this programme and that the amount of bio-based raw materials varies from a minimum of 5% to 60%. Our goal for the near future is to make adhesives with 100% bio-based raw materials, while we currently already supply more than 20 adhesives with bio-content. A good example is the Kleiberit 380.3 PVCAc Dispersion with 60% bio-based raw materials, which can be used for parquet production."

"It doesn't stop there, of course. For example, we are also using recycled raw materials in adhesives, we are further developing ME or micro-emission products at the PUR Hotmelts [see Floor Forum 163], we are looking for a combination of ME + Bio and/or combination of ME + recycling, and we are going to certify the adhesives to the maximum extent. We went into the ME products earlier, but when it comes to using recycled raw materials, one of the things you see is that some of our materials are made from recycled PET bottles."

Thereby, we take a cradle-to-cradle approach and apply current technology with recycled materials in adhesives for textile bonding. In fact, developments are already underway to use these recycled materials in other adhesives for furniture, flooring and window profile wrapping. For the combination of ME + BIO we already offer an edgebanding product with an amount of 35% bio-based raw materials and other products will follow. In terms of certification for sustainability and health, we can present certifications such as EMICODE. At present, 13 of our products already have the EMICODE label and 12 of them achieve the highest category EC 1 PLUS. Specifically for parquet installation, I can point to the certification of our Kleiberit 583.5."

Energy management, circularity and critical thinking

As we indicated above, sustainable and ecologically responsible business goes far beyond merely rethinking products down to the smallest detail. At Kleiberit, for instance, we notice a pronounced focus on its own energy management, an emphatic general commitment to moving as far as possible in the direction of a circular and sustainable economy, and an enormously critical approach to its own production.

"In energy management, our goal is to replace 100% of our electricity consumption with renewable sources by 2025. We plan to increase the share of renewable sources by 33% each year until we reach the target of 100% by 2025. As with electricity, we further aim to consume only Green Gas by 2025, albeit with the help of compensation certificates. As a company, we currently installed one solar power plant already, but have two more planned," Jens Fandrey picks up. "Our circular and sustainable thinking is illustrated, among other things, by our preparation for certification according to the ISCC+ standard. We also conduct annual sustainability reporting. Where evaluations in 2023 and 2024 are still informal and purely internal matters, things will be different in 2025, when official sustainability reporting begins."

"As it should be, we are simultaneously taking a close look at our various production methods. One and all, we are prioritising the use of regenerated solvents and have now implemented an in-house recovery system at the plant. Furthermore, we do not throw away Intermediate Bulk Containers [IBCs], but make them undergo a 'recycling process', thus recovering and reusing them. And of course, our packaging materials, including plastic and cardboard, contain recycled raw materials."

"To conclude, I backtrack briefly to our products. If I make the comparison with the competitors: when they state that they are committed to renewable materials, they are talking about 5%, and that while in the Hot Coating range we are already playing in the 50+% category. If you want to sum up Kleiberit in one sentence, you could say that renewable is the single most important thing we can offer!"

Sustainability plays a leading role in the modern world. We're seeing a rise in demand year by year for ecological adhesives on site and in floorboard production. It's now clear that products which present themselves as ecological in terms of performance are the counterparts of classic resources, but at the same time this raises an extra question. What exactly is it which makes a product ecological?

Until now, almost the only thing we've considered in this matter has been the adhesive itself. And so, we've defined ecological [floor] adhesives as products made with great attention to environmental impact and health aspects. For instance, they are produced with raw materials which are less harmful to the environment and public health than classic adhesives. That includes mainly the avoidance of volatile organic compounds (VOC) and toxic chemicals such as formaldehyde and toluene.

The composition of ecological floor adhesives varies, but they usually contain biologically degradable polymers, natural resins, vegetable oils, and renewable raw materials such as maize, soya, or potato starch, so they don't leave any waste or pollution. The production of these adhesives is designed to minimise the ecological footprint through the use of sustainable sources and processes with a lower environmental impact. Innovative production methods such as water-based formulas also help to reduce the pressure on the environment by limiting solvents.

Sustainability in energy, packaging, and transport

Gradually, however, people are realising that the term ecology comprises much more than just that. In other words, as we strive for sustainability, we need to consider not only the composition of the adhesive, but also the related process because producers also have a big responsibility in that area. What about the use of renewable energy sources such as solar and wind energy in their production installations? And what about the packaging in which adhesives are presented? Does this comply with recyclable or biologically degradable standards? And so, it is to their credit that they are actively setting up programmes for the return and re-use of packaging materials. By promoting recycling, they reduce the impact on landfill sites and ration the use of new raw materials. If we go a step further, we also consider the means of transport. After all, efficient transport methods, such as the maximisation of truck loads and the optimisation of routes, reduce the ecological impact of the distribution.

The open time

As an extension of this, we also have to consider the processing of the adhesive itself. You might have taken all the prescribed ecological steps, but you will undo a lot of your good work if an excessively limited open time means that you have to discard large quantities of unused product. An excessively limited open time can result in a waste of adhesive and floor covering, whilst an excessively long open time can be the cause of reduced adhesion and a longer drying time. You also have to check this out, and you have to realise that great strides have been made in this area in recent years. Producers are innovating