

WATER - OUR RESPONSIBILITY

Water – Our Responsibility

The focus topic of November's Performance Days was: 'Water – Our Responsibility'. This theme was chosen in recognition of the textile industry's significant contribution to the creation of wastewater and of water pollution. As well as having its own dedicated space in the hall, the topic was the subject of a number of interesting presentations and expert discussion groups on the second day of the fair. The issue was attacked from two angles: how water usage in the textile industry can be reduced; and the increasingly urgent need for solutions to the problem of microplastic pollution.

The microplastic dilemma

The presentation programme was opened by marine biologist Christian Lott, director of Italy-based marine research and training institute Hydra Marine Sciences. Although ostensibly an outsider to the textile industry, his work has become increasingly intertwined with the issue of plastic pollution in the planet's oceans. He offered an overview of the research that has been carried out into the extent of the problem. His talk included a number of incredible points, such as the fact that plastic waste has been found everywhere, including in the Arctic, the Antarctic and at the deepest point in the ocean. He also brought the somewhat surprising news

that deep sea pollution is dominated by cellulosic fibres and revealed there are suggestions that dyeing and other treatments can alter the inherent biodegradability of natural fibres. Mr Lott used a portion of his talk to question the effectiveness of ocean clean-up efforts. His reason for doing this is that only 1% of plastic pollution that makes it into the ocean stays on the surface. He did stress, however, that he appreciates the work ocean clean-up groups are doing to raise public awareness of the problem.

In her presentation, material futurist Sophie Mather discussed how textiles could be re-engineered so as to avoid the release of microfibrils. She began by explaining that there is a difference between microfibrils and microfragments, insisting this difference could be key to changing how things are designed. She believes transforming product development can be a proactive solution to the problem of microplastic pollution. Ms Mather revealed that the goalposts have shifted in the past two years with regards to this issue, with the examples she gave including a greater urgency to tackle it and the fact that the industry now talks about it in relation to all fabrics (not just fleece). She said that natural fibres as well as synthetic fibres are now also part of the debate. Her conclusion was that the more details known about the different stages of the textile/garment production process, the more chance the industry has to make real changes in or-

der to tackle the problem of microplastics in the ocean.

Sophie Bramel, technical editor of WSA magazine, hosted a panel discussion about ocean waste, with marine biologist Christian Lott again featuring. They were joined by Niccy Kol, brand development manager for the Waste2Wear group. Perhaps surprisingly, Mr Lott described plastic as "a great material". He qualified this by saying that this is only the case if it is used properly. He added that while durability is one of plastic's best qualities when it is in use, this becomes an extremely negative property once it comes into contact with the environment at the end of its usable life. Ms Kol used her interventions to highlight work Waste2Wear has carried out to look at where ocean waste actually comes from. In this way, the organisation can help manufacturers better understand the part they play in creating this problem. Responding to comments from the audience, the speakers agreed that educating the next generation about plastic pollution is important, but Mr Lott was passionate when insisting that it cannot be left for them to solve. He said everyone has a responsibility to change the way they interact with plastics to prevent this issue from becoming even more serious.

Addressing water waste

A change of gear in the afternoon brought discussion about high water usage in textile manufacturing. The first speaker on this topic was Christina Jönsson, from the Research Institute of Sweden, who explained how the textile industry contributes to the issue of scarcity of water. As well as pointing out that water is rarely recycled in the industry, she highlighted the clear links between water usage and energy consumption. The main reason for this is that water in the textile industry is often used at high temperatures. Research carried out by her organisation brought the startling information that a 150-gramme white cotton T-Shirt requires around 500 litres of water to create, which she said highlights the problems with cotton in particular. She also emphasised the importance of accurate measurements with regards to water usage, posing the question: how can we reduce the amount of water we use if we don't know how much we are using at each stage of production?



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The first of three afternoon panels was led by Anna Rodeweld of GreenroomVoice, who focused on how changes to the dyeing process can contribute to reducing the amount of water the industry uses. With textiles still mostly dyed using water, the industry is faced with the challenge of finding better ways to do this stage of manufacturing. Among the solutions mentioned were dope-dyeing technologies, such as those developed by e.dye, which was represented on the panel. There was also discussion about the recyclability of water and how more of this important resource can be returned to the supply chain after use. To make this possible, there will need to be more research into biodegradable chemicals, the panel concluded. The participants also came to the consensus that cross-supply chain collaboration and partnership is key to reducing water usage. This includes leaning on the knowledge of researchers and scientific institutions.

Representatives of Polartec and PrimaLoft, two companies that presented their solutions for the problem of microplastic pollution at Performance Days, featured on the next panel, moderated by textile expert Ulrike Arlt. Polartec CEO Gary Smith talked about Power Air, a new fabric engineered to reduce microfibre shedding. This is achieved by encapsulating lofted fibres within a multilayer, continuous yarn fabric construction during the knitting process. The company

developed a whole new testing protocol to measure shedding due to home laundering while working on Power Air. This involved simulating dozens of laundings in a single cycle in order to accurately capture data about the microfibrils lost over the fabric's lifetime. The test can then accurately determine the percentage of weight loss due to shedding.

PrimaLoft has approached the issue from a different angle with the creation of biodegradable recycled polyester fibres suitable for use in both insulation and performance fabrics. President and chief executive Michael Joyce explained that this solution, known as PrimaLoft Bio, is primarily designed to deal with the microfibre shedding that occurs when a garment is washed during its normal lifecycle. PrimaLoft has enhanced the fibres so they are more attractive to the naturally-occurring microbes found in anaerobic environments, such as those in landfill or the ocean. This means the microbes eat away at the fibres at a faster rate.

A fascinating day of discussion was rounded off by a high-level panel featuring Mats Georgson (CMO of Polygiene), Carlo Centonze (co-founder and CEO of HeiQ) and Genady Fedotov (general manager of HDWool), among others. They focused on how water consumption can be reduced by creating garments that don't need to be washed as frequently. They compared different an-

ti-odour solutions and also examined wool's well-known natural antibacterial properties. Mr Fedotov said the main problem was convincing consumers that they don't necessarily have to wash a garment after every wear. For his part, Mr Georgson said the onus is on technology developers to prove their solutions work so that the consumer realises they can wear things multiple times between washes. The panel also mentioned that as well as reducing water consumption, fewer washes means less risk of microfibrils being released into wastewater and so into the environment.

Recognising responsibility

More than 1,500 products were entered for November's Performance Award, with an expert jury spending two days assessing their merits. A total of 240 pieces were selected for inclusion at the fair's regular Performance Forum, with a further 24 displayed in an area dedicated to this edition's focus topics. The materials chosen to feature in the Focus Forum were a mix of fabrics produced in a way that uses less water (such as solution-dyed fabrics from Green Threads, Sympatex and SpinDye, a fabric from Tintex dyed with natural products, and a CO₂-dyed fabric from Eclat) and fabrics made from recycled ocean waste (like those from Seaqual, HoYu and Grand Textile).

The Performance Award was given to Japanese company Green Threads for a lightweight functional fabric that offers the same performance qualities as a much heavier material. It weighs only 17 grammes per square metre, but it is said to have the same tear resistance as a fabric weighing 50 grammes, for example. In addition, it is made with a four-denier yarn. Less material is required, reducing the amount of energy that needs to be used and resulting in considerably less waste.

The jury decided to also hand out a second prize this year, the Eco Performance Award, which went to Taiwan-based Jou Jou Fish. This company has developed an extremely sustainable laminate, which the jury decided is the best ecological solution currently available on the market. The fabric is made from 100% recycled nylon and is solution-dyed, which saves a lot of water. The micro-porous membrane is created without the use of solvents, while the DWR coating is applied using a revolutionary dry process.

