

### **S3.2.2 MICROSIEVING WITH ENHANCED PERMEABILITY – ODW 6 µM FOR WATER FILTRATION**

Dominik Herper\*<sup>1</sup>, <sup>1</sup>GKD - Gebr. Kufferath AG

Making progress in weaving technology and using modern development tools, GKD improved their highly permeable Optimized Dutch Weave meshes, reaching a pore size ranging between 4.9 and 6.9 µm without any additional process steps like coating or calendaring involved. This achievement marks a pore size which has never been reached before. The ODW weaving pattern has already proven its efficiency in a wide field of filtration processes due to their long-term reliability of filtration rates combined with a high permeability. Especially in microfiltration ODW 6 allows flow rates which are up to three times higher than those of conventional filter media below 10 µm. The slit-like pore geometry helps to reduce the pressure loss coefficient by a factor of 8.5. Due to the special construction of the mesh, particles above the separation limit are deposited on top of mesh's surface. This feature does not only prevent clogging and results in an extremely high dirt holding capacity but also ensures the excellent cleanability of the mesh. The low flow resistance helps to minimize the area as well as the pumping power needed in a filtration process. This makes the process as such more economic. The ODW weaving pattern has substantially more stainless steel wires woven into its surface. This explains not only the great stability of the individual pores but also the unrivalled overall mechanical strength of ODW meshes, which is far beyond anything other filter media with comparable throughput rates can offer. The three-times-higher throughput rate of these even further optimized ODWs is made possible by their more porous mesh structure. In this way, their further improved filtration rates and their larger open surface contribute to even more efficient filtration processes.