



WORLD WIDE WEAVE

Threefold improvement: three-dimensional woven metal mesh

More efficiency, lower costs, special materials available

Peter Wirtz, manager of the industrial mesh business unit SOLID WEAVE at GKD – GEBR. KUFFERATH AG looks back with complete satisfaction on this year's FILTECH, the world's leading event and conference for filtration, in Cologne: "We really set the pace with our products and processes." Visitors flocked to the GKD stand to see what further developments the filtration experts had come up with. There was particularly strong interest in three-dimensional Porometric mesh. But the flow-optimised mesh type ODW 6, with a pore size of just 6 µm and – compared to other products on the market – a three-times higher throughput rate, also drew visitors in crowds. The third highlight of this GKD business unit's presentation at the trade show was a procedure – premiered at the FILTECH – for the simulation of the bubble point test.

A further development in high demand

Based on the findings of a study into the erosion behaviour of filter media in well pipes, GKD has developed a three-dimensional mesh type with rectangular pores. This further development, based on the successful YMAX[®] product range, surpasses the performance spectrum of conventional constructions on three different counts. The lower weight of the weave – achieved through modification of its construction – means lower costs. The higher porosity of the multi-layered mesh construction reduces local pore velocity by up to 40% – compared to the performance of standard twilled or plain dutch weaves currently available on the market – while maintaining a constant volume flow rate. This means that the throughput increases by a



similar factor. Particles above the required cut point are quickly and reliably separated, while at the same time the special mesh structure ensures extremely high dirt-holding capacity.

Flow-optimised mesh type ODW 6

With its further development of the flow-optimised mesh type ODW 6, GKD meets requirements for the finest separation rates. This mesh construction combines a geometric pore size of just 6 µm with a high throughput rate, a low tendency to clog, and optimal backwashing capability. Since GKD achieves the requisite pore size through its weaving process – and not through finishing stages like calendering – a consistently high degree of porosity is guaranteed. Thanks to the rectangular, slot-shaped pores on the surface of the mesh, which are smaller than the pores in the interior of the mesh, particles above the required cut point are reliably separated on the mesh surface. Smaller particles pass freely through the larger inner pores, thus preventing any clogging of the media. This special pore geometry also explains the combination of high dirt-holding capacity and very low flow resistance of the ODW 6 mesh.

Novel procedure for numerical simulation

The third highlight at the show was GKD's in-house development of a procedure for the numerical simulation of the bubble point test. Up to now, time-consuming screenings were required for the determination of the maximum pore diameter. For GKD, these are now a thing of the past. Through the numerical simulation of the bubble point test and the reliable capillary pressure constants determined from the simulation, GKD's filtration experts have now found a procedure with which they can precisely calculate the maximum pore size for all standard woven meshes – optimised dutch weaves, twilled dutch weaves and reverse dutch weaves – in a matter of seconds. Whether for quality control during production runs, application-



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specific optimisation or the development of new mesh types – with its numerical simulation of the bubble point test GKD has reinforced its claim to technological leadership in the production of high-precision industrial meshes. No wonder, then, that the talk on the simulation given by Dominik Herper, Development Engineer at GKD, enjoyed massive interest. His presentation – along with the groundbreaking further developments of leading GKD products on show at the FILTECH – impressively demonstrated the eminent research and development expertise of GKD.

Avid visitor interest was also evident in intensive conversations at the stand regarding GKD's planned follow-up projects. For example, GKD is currently working on the development of finer and coarser pore sizes of the three-dimensional mesh type Porometric, which has already proved itself with a pore size of 150 µm.

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GKD – GEBR. KUFFERATH AG

The owner-run technical weaver GKD – GEBR. KUFFERATH AG is the global market leader for metal and plastic woven solutions as well as transparent media facades. Under the umbrella of GKD – WORLD WIDE WEAVE the company combines three independent business units: SOLID WEAVE (industrial meshes), WEAVE IN MOTION (process belt meshes) and CREATIVE WEAVE (architectural meshes). With its six plants – including the headquarters in Germany and other facilities in the US, South Africa, China, India and Chile – as well as its branches in France, Great Britain, Spain,



WORLD WIDE WEAVE

Dubai, Qatar and worldwide representatives, GKD is never far from its customers.

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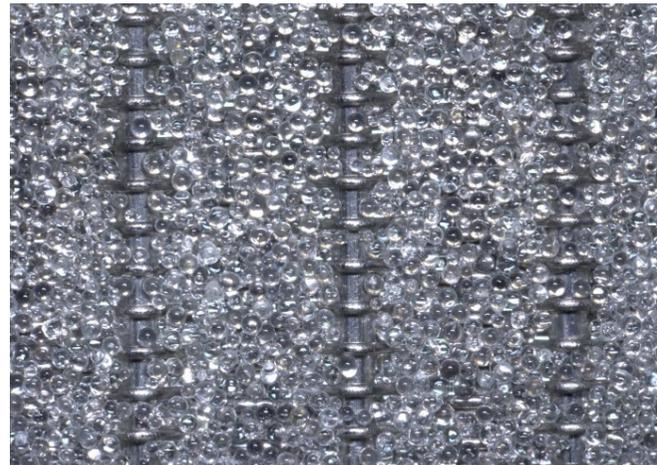
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Picture 1: Visitors flocked to the GKD – GEBR. KUFFERATH AG stand to see what further developments the filtration experts had come up with.

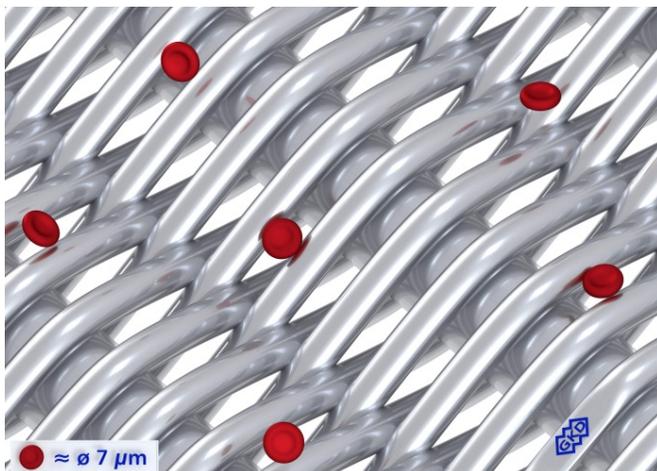


Picture 2: GKD – GEBR. KUFFERATH AG has developed a three-dimensional mesh type with rectangular pores, which surpasses the performance spectrum of conventional constructions on three different counts.

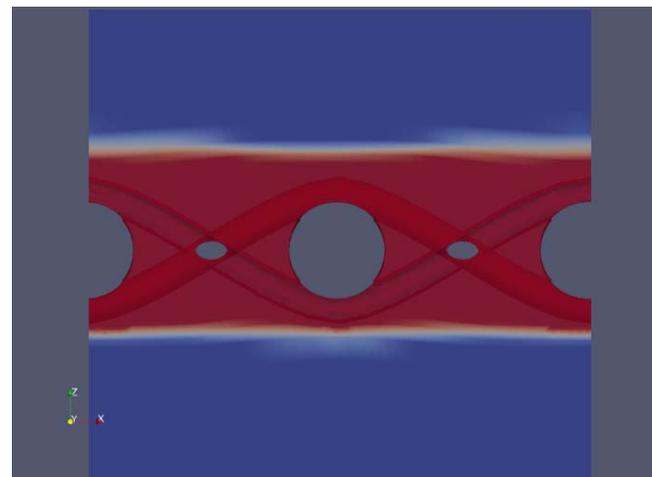
Picture 1-4 © GKD

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Picture 3: The flow-optimised mesh type ODW 6 from GKD – GEBR. KUFFERATH AG combines a geometric pore size of just 6 µm with a high throughput rate, a low tendency to clog, and optimal backwashing capability.



Picture 4: Output configuration for the bubble point test. For its numerical simulation GKD – GEBR. KUFFERATH AG developed a procedure.

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