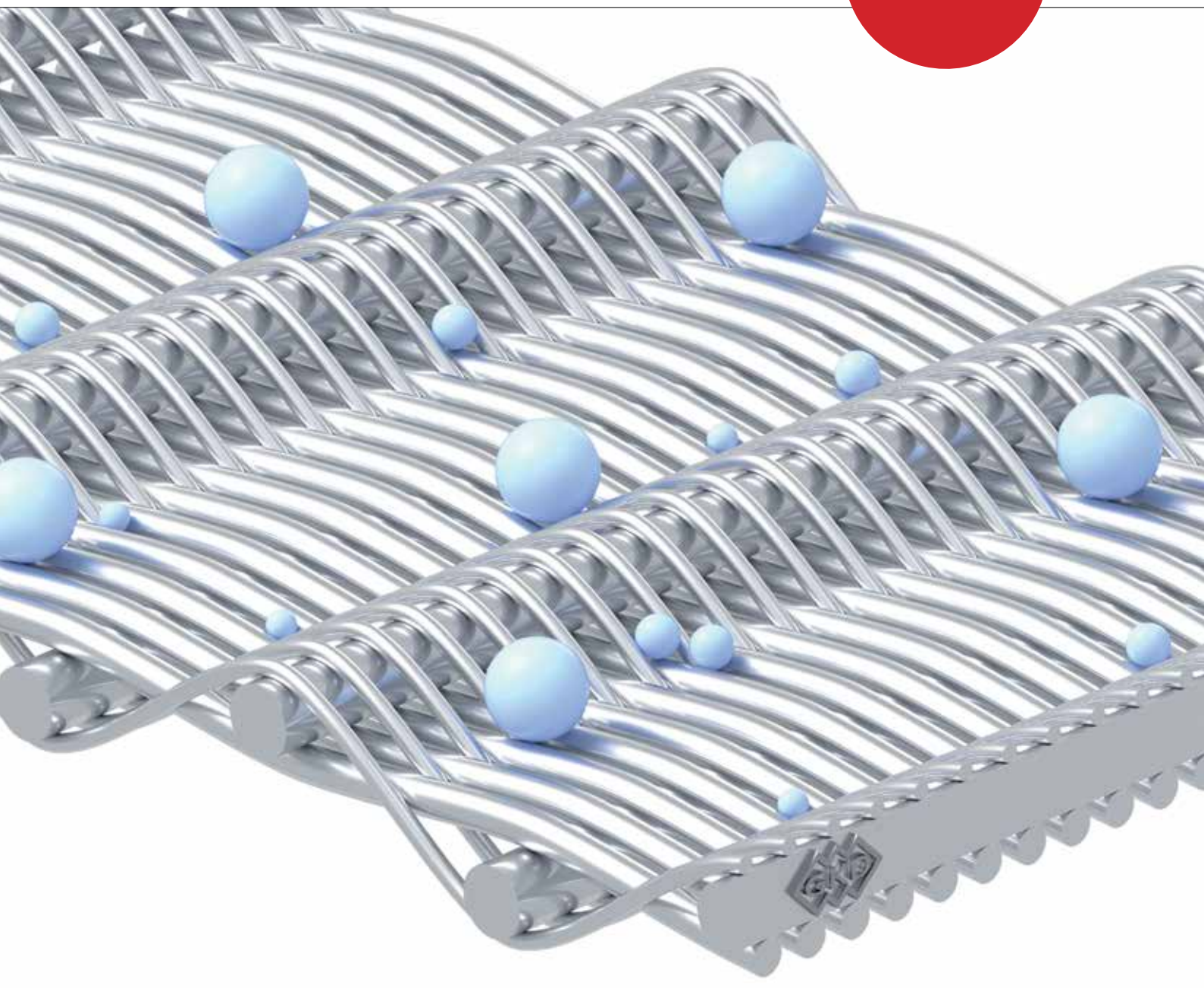
WOVEN METAL MESH
AND FILTER SOLUTIONS

GKD INDUSTRIAL MESH

POROMETRIC FILTRATION MESH

NEW



EXACT FILTRATION MEETS HIGH PERMEABILITY AND MECHANICAL INTEGRITY

The development of the Porometric media line has been forced by the requirement, that fine filtration has to be achieved at a very high accuracy. That did require the design of a media with an exactly defined pore and geometry. As in typical filtration tasks the driving forces, being the differential pressure, is partially just limited to hydrostatic pressure, a high permeability is most likely a key requirement to meet. The third "must" is the mechanical integrity and stability. Most industrial filters tend to work with elements of increasing dimensions and therefore increased mechanical stress on the media during installation into the machine as well as in operation. All three aspects have been integrated into the design of the Porometric Filtration mesh, by utilizing an exact defined 3-dimensional slot-shaped structure with rectangular pores, which also provide high permeability rates. As the design is based on wires which are significantly thicker than the pore size, a high stability is provided.

Just after the launch of Porometric Filtration mesh the renowned "AFS Product of the Year" award was presented to GKD-Gebr. Kufferath AG. The jury, constituted of experts in filtration business, decided that Porometric's performance is outstanding and therefore worthy of the title "Best Filtration Product of the Year".

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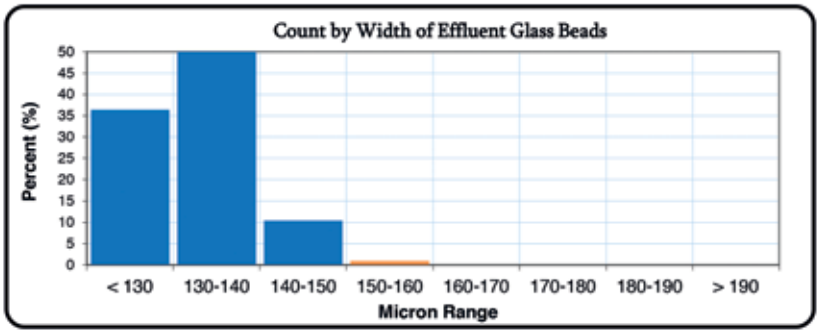
AUTOMATED LIGHT MICROSCOPE ANALYSIS OF EFFLUENT GLASS BEADS

Date:	Monday, December 19, 2016
Sample Type / Project:	Glass Bead Testing for SET Testing
Customer / PO:	GKD
Sample Submitted:	01 of 02, 150M

Basic Parameters:	
Magnification:	50x
Calibration:	1.09 µm / pixel
Micron Rating:	150
Glass Beads Applied:	
125 - 150 µm, 0.0050g	150 - 180 µm, 0.0075g
180 - 212 µm, 0.0050g	
Count By Range	
Count > Rating	7
Count ≤ Rating	743
Total Count	750
Std Dev	9.3

Count By Width of Effluent Glass Beads		
Range	Count	Percent
< 130	273	36.4
130-140	392	52.3
140-150	78	10.4
150-160	7	0.9
160-170	0	0.0
170-180	0	0.0
180-190	0	0.0
> 190	0	0.0
Total:	750	100

Ten Largest Beads	
Bead #	Microns
#1	153.3
#2	152.2
#3	151.9
#4	151.6
#5	151.4
#6	151.4
#7	151.4
#8	149.9
#9	149.2
#10	149.2



Porometric's performance was also confirmed in various third party tests. The table on the left shows a pore size analysis of the independent testing lab FTC. The report reveals the extremely exact filtration performance of a Porometric with a rated opening of 150 ± 3 micron.

POROMETRIC MESH: THE PORE IS THE KEY

Based on CFD Simulation and corresponding tests on physical media, GKD was able to prove the concept of the new Porometric filter media design, and opened the door for various possible applications within the water and general liquid media filtration, as well for applications with high viscous media. The high permeability, especially in comparison to other, more common media, qualifies Porometric mesh as the media for applications with pure hydrostatic pressure as driving force. But also in pressurized systems, Porometric's high permeability will reduce required energy consumption in the system. As the pore geometry forces the filtered particles to stay solely on the surface, excellent backwashing performance is achieved and has been proven in physical tests at the Karlsruhe Institute of Technology (KIT). As other innovative media made by GKD, Porometric mesh is almost the ideal surface filtration media. High permeability also results in reduced flow velocities within the pore. This is important, in case the filtration application have a high abrasion potential. The lower the velocity inside the pore, the lower the physical abrasion and wear to the mesh. This ultimately results in a longer lifetime of the media or filter element. The high permeability in combination with a high mechanical stability is the key for applications with high viscous media, where, even at high throughputs, the differential pressure should kept low. The mechanical properties of Porometric ensure that increased mechanical stresses, occurring in these applications, do not damage the woven media. The Porometric mesh also offers the possibility of combining different materials in one filtration media. This can be the key to create solutions for highly corrosive environments, such as seawater.

ADVANTAGES OF POROMETRIC FILTER MEDIA:

- Increased permeability
- Reduction of highest, local pore velocity
- Good backwashing properties
- High porosity
- High dirt holding capacity
- Good price-performance ratio
- Poresize down to 18 μm
- Seawater restistant down to 20 μm

COMPARISON OF 2 TYPICAL POROMETRIC MESHES WITH OTHER COMMON FILTER MEDIA.

Mesh type	Porometric 150	PDW 24 x 110	DTW 25 x 160
Maximum Particle Passed (MPP)	150 μm	150 μm	145 μm
Area weight	1.96 kg/m²	2.50 kg/m²	5.03 kg/m²
Wire mesh thickness	0.93 m	0.74 mm	1.07 mm
Air permeability at 200 Pa	4,670 l/m²/s	2,980 l/m²/s	1,320 l/m²/s
Porosity	73.5%	58.0%	41.3%
Mesh type	Porometric 25	ODW 25	DTW 165 x 1400
Maximum Particle Passed (MPP)	25 μm	25 μm	21 μm
Area weight	0.31 kg/m²	0.44 kg/m²	0.74 kg/m²
Wire mesh thickness	0.224 mm	0.151 mm	0.146 mm
Air permeability at 200 Pa	2,540 l/m²/s	1,790 l/m²/s	440 l/m²/s
Porosity	82.7%	63.6%	36.6%

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GKD_Porometric_Filtration_Mesh_Flyer_EN_04-18