WOVEN METAL MESH
AND FILTER SOLUTIONS

GKD INDUSTRIAL MESH

METALLIC MESH FILTER ELEMENTS FOR HOT GAS FILTRATION

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NEW EFFICIENCY IN HOT GAS FILTRATION

In hot gas filtration, recovering thermal energy after the filtration process not only prevents energy-intensive reheating of the exhaust gas, but also helps protect downstream units.

Whether for producing color pigments and catalysts, recovering reusable materials or burning wood chips, industrial and municipal waste: The filtration and treatment of hot gas flows plays a key part in addressing the increasing demands in terms of environmental protection and cost-effectiveness.

The use of filter media made from PTFE (polytetrafluorethylene) or other synthetic fibers is restricted to temperatures of maximum 260°C. What is more, they can also be damaged by smoldering particles or even catch fire, compromising the safety of the entire system.

Ceramic media are therefore often used at high temperatures. However, they can only be used up to a certain length, as they begin to vibrate due to the pressure pulse used for regeneration – which in turn leads to a risk of breakage. Filter media produced from metallic materials can handle temperatures of up to 600°C, are non-combustible, and capable of resisting any vibrations that occur thanks to their mechanical robustness. With the highly-porous Trimetric filter medium, GKD now offers a filter medium that unites all the positive properties of existing proven filter types in one medium.

TRIMETRIC: POSITIVE PROPERTIES COMBINED IN A SINGLE MEDIUM

The innovative, highly porous filter medium Trimetric combines in one medium everything that efficient hot gas filtra-tion requires: high retention rates, thermal resistance up to 600°C, mechanical robustness to vibrations, regenerability during operation, and external cleaning. With this new product range, GKD is making combinations of Optimized Dutch Weaves and nonwoven metal fiber mesh available for practical applications. Adaptable to specific applications, the inherently stable filter elements can be employed in all economical designs of standard dust filters – and also in bag filter systems with minimal adjustments to fixtures.

Thanks to their excellent regenerability, the Trimetric filter cartridges enjoy a long service life during operation.

UNIVERSALLY DEPLOYABLE

Generally speaking, there is no limit to the filter length with Trimetric filter media laminate: The required formats are comprised of segments up to 900 millimeters long mounted specifically for the application without the need for tools or expensive molds. As such, defective individual segments can also be repaired or replaced at any time.

With external diameters that can be individually selected between 60 and 600 millimeters, Trimetric filter media have a cylindrical form as standard. In principle though, square shapes or any other geometry are also possible. This modularity enables Trimetric filter media to be used in all economical designs of the standard dust filter. In this application, it guarantees optimal dirt absorption with the usual inflow speeds of 0.7 to 1 meter per minute.

The innovative Trimetric filter media from GKD can be used in existing cartridge filter systems without alteration. Even existing bag filter systems or systems based on filter leaves can be converted with only a slight modification of the fastening elements in the filter housing.

The cleaning properties and filtration efficiency of Trimetric filter media were tested on the basis of series constructions on VDI test benches (VDI = Association of German Engineers). Compared with pure metal fiber nonwoven cartridges or powder cartridges, they exhibit very good regenerability, are also resistant to breakage, and comparable with PTFE media in terms of their retention rate – however only for temperatures up to 600°C. All of which means that Trimetric filter media significantly contribute to increasing process efficiency, reducing CO2 emissions, and maximizing cost-effectiveness.

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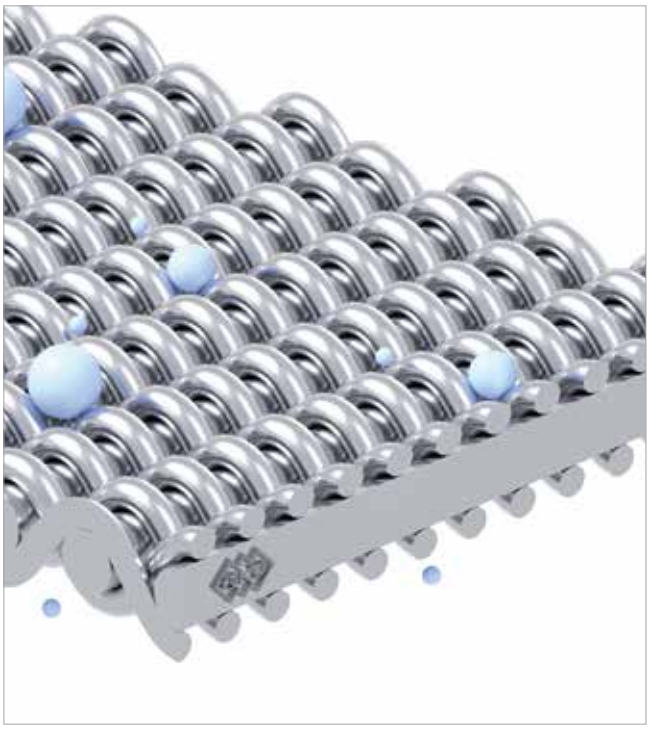
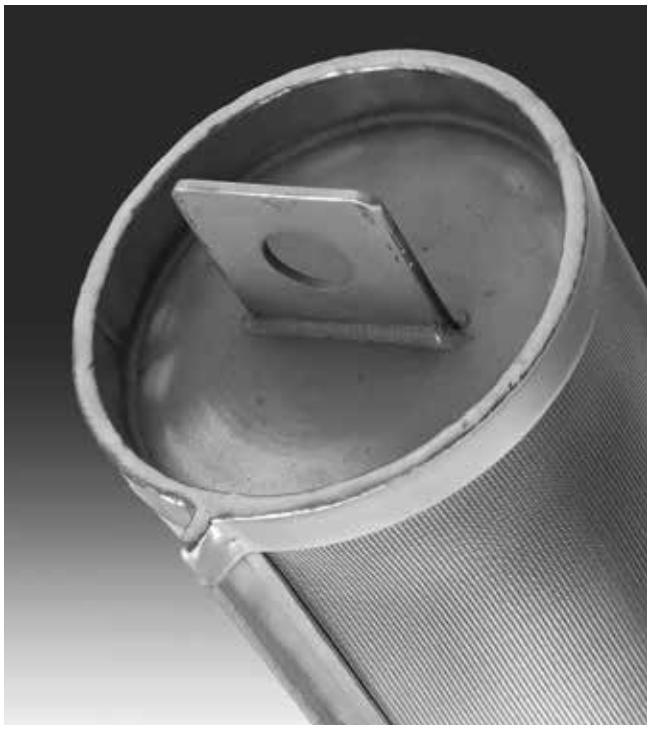
The combination of metal fiber nonwoven on the outflow side and Optimized Dutch Weave on the inflow side is unbeaten in terms of cleaning and filtration efficiency.

REPAIRING FILTERS AND REPLACING FILTER MEDIA



Metallic media for bag filter applications, Reversed Plain Dutch Weaves (RPDW)



Special seam technology developed by GKD: thanks to tight fixing, the mesh is only subjected to minimal bending/alternating stresses.

Hot gas filtration can be achieved with appropriate support baskets using pure wire mesh layers. The ideal meshes for this are Reversed Plain Dutch Weaves, which boast increased tensile strength thanks to their structure. This makes it possible to attach these meshes to standard supporting bodies that are already in place, including those typically used for textile media.

The meshes are held in place very securely using the special clamping fold seam technology developed by GKD, so that they are only subjected to minimal bending/alternating stresses. Depending on the application, special materials for high chemical or thermal stress can also be used here. These can be optimized for the respective application and then manufactured specially.

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GKD - GEBR. KUFFERATH AG

As a privately owned technical weaver, GKD-Gebr. Kufferath AG is the world market leader in metal, synthetic and spiral mesh solutions. Four independent business divisions bundle their expertise under one roof: **INDUSTRIAL** MESH (woven metal mesh and filter solutions), **PROCESS** BELTS (belts made of woven mesh and spirals), **METAL**FABRICS (façades, safety and interior design made of metal fabrics) and **MEDIA**MESH® (transparent media façades). GKD continuously develops new fields of application through its manufacturing technology and process expertise. We use GKD meshes to create efficient systems, equipment and components that are perfectly integrated into our customers' processes across all industrial sectors. GKD is active on the international stage from its headquarters in Germany, five further production sites in the US, South Africa, China, India and Chile, as well as branches in France, Spain, Dubai and representatives all over the world.

BUSINESS UNIT: INDUSTRIAL MESH

State-of-the-art mesh and filter solutions made of metal and plastic wires, as well as technical fibers – for use in all industrial sectors. With innovative web technologies and the latest simulation methods, we develop and produce efficient technical weaves, semi-finished products, components and filter equipment – optimally matched to the most diverse mechanical process engineering requirements. We use our high-level laboratory expertise to continually refine and further optimize our products. Leading manufacturing standards, certified processes and comprehensive testing procedures secure end-to-end high quality in all GKD filter media. This approach allows us to produce some of the most reliable, high-performance filter media in the world. Our innovative capacity, many years of experience with application processes and customer proximity, coupled with our cost-focused and user-centered approach, have made GKD the first choice international partner for industrial mesh.

CLOSE TO THE MARKET AROUND THE GLOBE.

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