

WOVEN  
PROCESS BELTS  
FOR INDUSTRIAL  
APPLICATIONS



# PROCESS BELTS FOR BELT FILTER SYSTEMS

VACUBELT®



FILTRIEREN  
FILTRATION



ENTWÄSSERN  
DEWATERING



*GKD production operations, Düren*

## VACUBELT® PROCESS BELTS

For flue gas desulphurisation plants, used for the production of phosphoric acid, the filtration of cooling lubricants and the treatment of salts and minerals.

VACUBELT process belts from GKD are the #1 choice for fast, effective and low-maintenance vacuum filtration. The broad scope of industrial fields of application ranges from the chemicals industry, through the engineering industry, all the way up to the coal and steel industry. Intensive and continuous exchange with our customers also helps us develop new applications and technical innovations, which are also incorporated in the production processes of other GKD process belts. We generally use monofilament polyester as mesh wire for our VACUBELT process belts.

Our woven polyester fabrics offer high lateral stability, as well as excellent crease resistance – even in large widths. Other materials are also used in special cases. Thanks to our international web expertise and use of ultra-modern looms, we are also capable of producing single-layer fine-pored woven mesh fabrics. These allow us to achieve optimised cleaning results and significantly lower clogging, which significantly increase the useful life of our VACUBELT process belts. In addition to this, the smooth surface improves cake discharge.



40

60

80

100

120

140

*FGD gypsum*



160

180

200

220

240

260

*Cooling lubricants*

*Phosphogypsum*

*Application for particle sizes [values in  $\mu\text{m}$ ]*

## FLUE GAS DESULPHURISATION PLANTS

GKD manufactures robust and efficient VACUBELT filter belts for dewatering FGD gypsum. Our VACUBELT 2015, a type of fabric mesh developed specifically for this application, ensures significantly greater air / water permeability thanks to its large number of openings. This results in faster dewatering in vacuum belt filter systems, as well as filter cake with a lower residual moisture content. The single-layer woven fabric structure also makes the belts easier to clean. This significantly reduces the risk of clogging. Thanks to the high degree of lateral stability, we are also able to achieve excellent anti-crease characteristics, even in wide belts.

## COOLING LUBRICANT

We have developed VACUBELT filter belts with extremely fine pores for filtering cooling lubricants. When working with low filter cake volumes, these belts also do not require any additional filtration aids. This results in lower costs, as it simplifies disposal of the particulate material filtered out and generally leads to lower waste volumes. It also protects the environment. In addition to this, the service life is significantly improved. VACUBELT filter belts can be used in vacuum and gravity filtration systems. We produce belts from both polyester and stainless steel wires, based on the requirements of our customers.



280      300      320      340      360      380      400      420      440      460      480

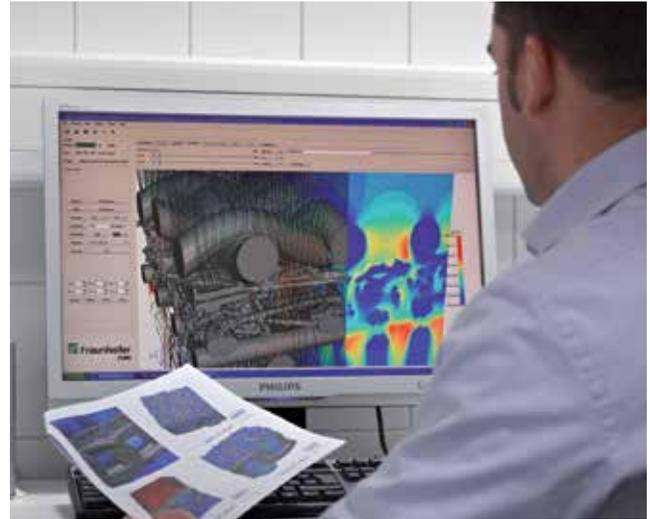
*Salts and minerals*

## PHOSPHORIC ACID

When producing VACUBELT filter belts for dewatering phosphogypsum, we always adapt the filter fineness to the individual local requirements at our customers' production sites. After all, local conditions of the minerals used for phosphate extraction mean that this gypsum is rarely the same at any two locations across the globe. We use single-layer polyester fabric mesh for all Vacubelt filter belts intended for dewatering phosphogypsum. Alongside a long service life, this material also offers optimum lateral web stability up to widths of at least 4.5 metres, as well as excellent cleaning properties.

## SALTS AND MINERALS

VACUBELT filter belts are an important component in the process chain for the treatment of salts and minerals. Not only are they used to dewater sodium chloride, they also support efficient dewatering of potassium chloride or kieserite, which is used in the production of fertilisers. At GKD, we always match belt selections individually to local circumstances. This helps us ensure optimum belt filter system results anywhere in the world. The single-layer meshes used offer a high degree of lateral stability and thereby facilitate both a long service life and optimum dewatering results.



1. PAD seam 2. Computer simulation

## SEAM SOLUTIONS

Tailor-made seam solutions for optimum process integration.

Like our meshes, the seams also have to withstand extremely tough conditions: depending on the application, we combine one of our many seam variants with the optimum mesh for our customers. We are happy to support and advise you in choosing the right seam for your individual requirements. The patented and particularly flat PAD seam is exclusively available from GKD. In a hot melting procedure, a special pad is melted into the belt mesh and pressed together with staples. This special seam is therefore highly strong and durable while offering improved belt running properties. Furthermore, the risk of damage to the seams is reduced significantly, the seam area is closed more tightly and product penetration is reduced.

## TECHNICAL EXPERTISE

Continuous innovation for efficient meshes in the familiar GKD quality.

GKD's guiding principle for all process meshes used in filtration plants. Alongside our existing product portfolio, we are constantly developing efficient new meshes – always focusing on the wishes and requirements of our customers. Our engineers and technicians combine their expertise in production, materials and plants with extensive practical knowledge. Computer simulations complement these processes. This results in innovative, efficient meshes in the familiar GKD quality. We deliver this standard by using the latest manufacturing processes that are subject to constant further development – just like our products themselves.



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**GKD – GEBR. KUFFERATH AG**

As a privately owned technical weaving mill, we are the world market leader in woven solutions made of metal and plastic. Under the slogan WORLD WIDE WEAVE, our company bundles four independent business divisions: **SOLIDWEAVE** (industrial mesh), **WEAVE IN MOTION** (process belt mesh), **CREATIVEWEAVE** (architectural mesh) and **COMPACTFILTRATION** (compact filtration systems). GKD continuously develops new fields of application with manufacturing technology and process expertise. We use GKD meshes to create efficient systems, equipment and components integrated perfectly in the customer's process across all industry sectors. With seven plants in Germany (headquarters), the USA, United Kingdom, South Africa, China, India and Chile, GKD is close to the markets all over the world. More subsidiaries and worldwide representatives are also available to our customers in France, Spain, Dubai, Qatar and elsewhere.

**BUSINESS UNIT: WEAVE IN MOTION**

As a technological leader, GKD offers a wide range of versatile, woven process belts for demanding applications under the **WEAVE IN MOTION** brand. Customers all over the world use our product range and custom-built solutions to dewater, press, filter, separate, dry, cool or freeze products. In addition, the process belts are deployed in applications including the embossing of wood, heat treatment and applications in the textile and non-woven industry. Thanks to production on state-of-the-art heavy-duty weaving machines, our meshes made of plastic, metal or a combination of materials are highly stable and at the same time flexible. Moreover, the ultra-flat PAD seam developed by GKD engineers demonstrates our innovative capacity. We are a reliable partner for all projects right from the beginning: from consultation and individual development, right up to procurement and assembly.

**GKD – PRODUCTS AND SERVICES CLOSE TO OUR CUSTOMERS, WORLDWIDE.**

- 01 GKD GERMANY, Düren (headquarters)
- 02 GKD UK, North Yorkshire
- 03 GKD FRANCE, Croisilles
- 04 GKD SPAIN, Barcelona
- 05 GKD USA, Cambridge, MD
- 06 GKD LATIN AMERICA, Santiago de Chile
- 07 GKD SOUTH AFRICA, Randfontein
- 08 GKD INDIA, Jaipur
- 09 GKD CHINA, Beijing
- 10 GKD MIDDLE EAST, Dubai
- 11 GKD MIDDLE EAST, Doha

