Process and filter belt technology

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We get processes moving.

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Flue Gas Desulphurisation

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Flue Gas Desulphurisation

brown coal from

open cast mining

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black coal from

deep mining

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Flue Gas Desulphurisation

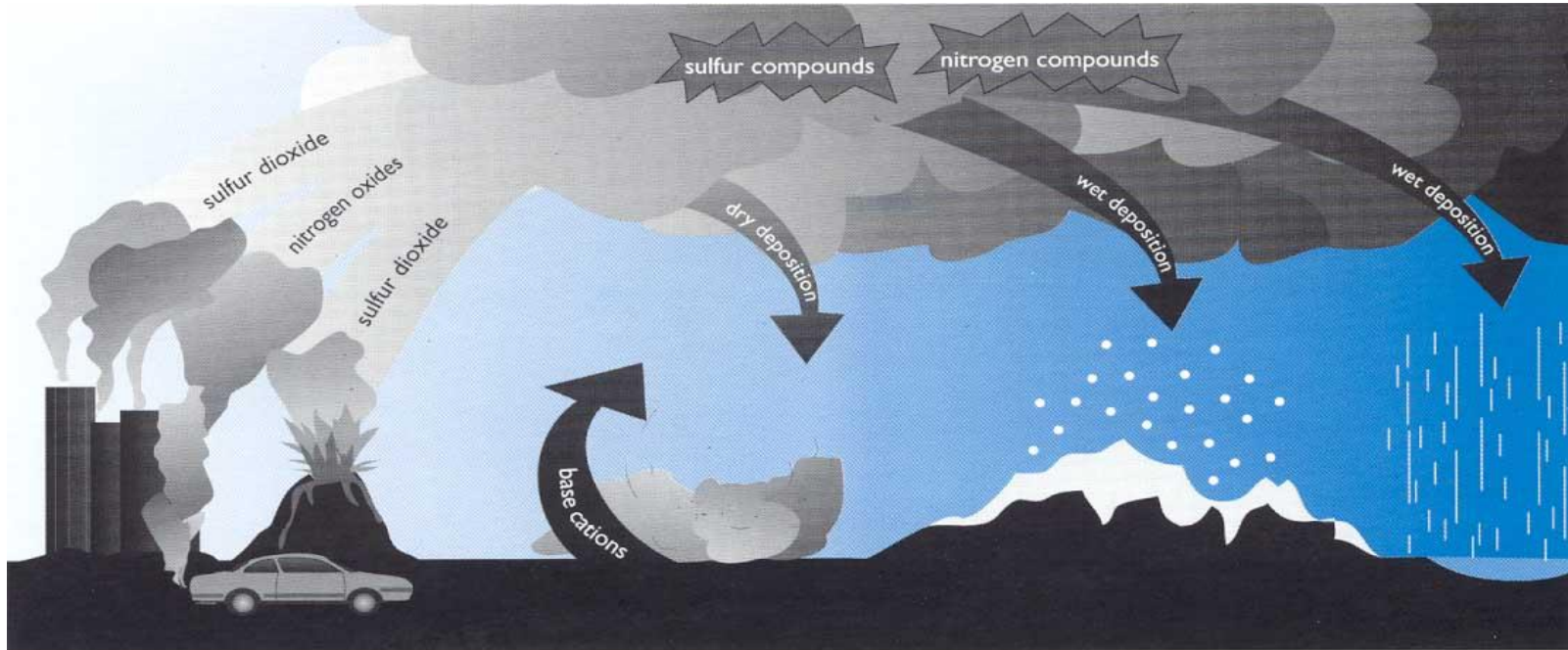fired in coal power stations

Flue Gas Desulphurisation

Flue Gas Desulphurisation (FGD) is the current state-of-the art

technology used for removing sulfur dioxide (SO2) from the exhaust flue

gases in power plants that burn coal or oil to produce steam for the

steam turbines that drive their electricity generators.

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Sulfur dioxide is responsible for acid rain formation. Tall flue gas stacks disperse the emissions by diluting the pollutants in ambient air and transporting them to other regions.

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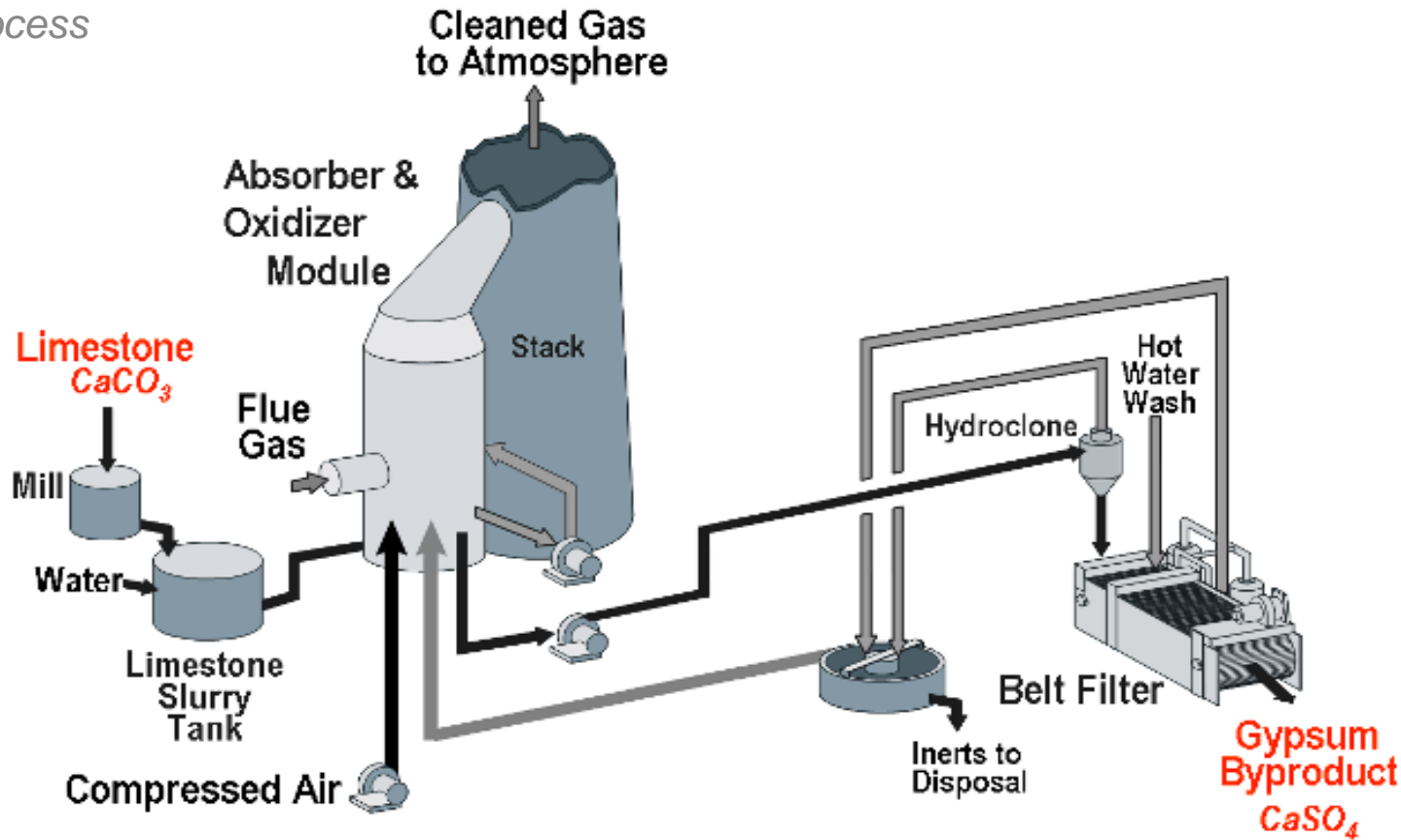
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Flue Gas Desulphurisation

The desulphurisation of flue gases from coal-fired power plants was initiated in Germany and has spread worldwide meanwhile.
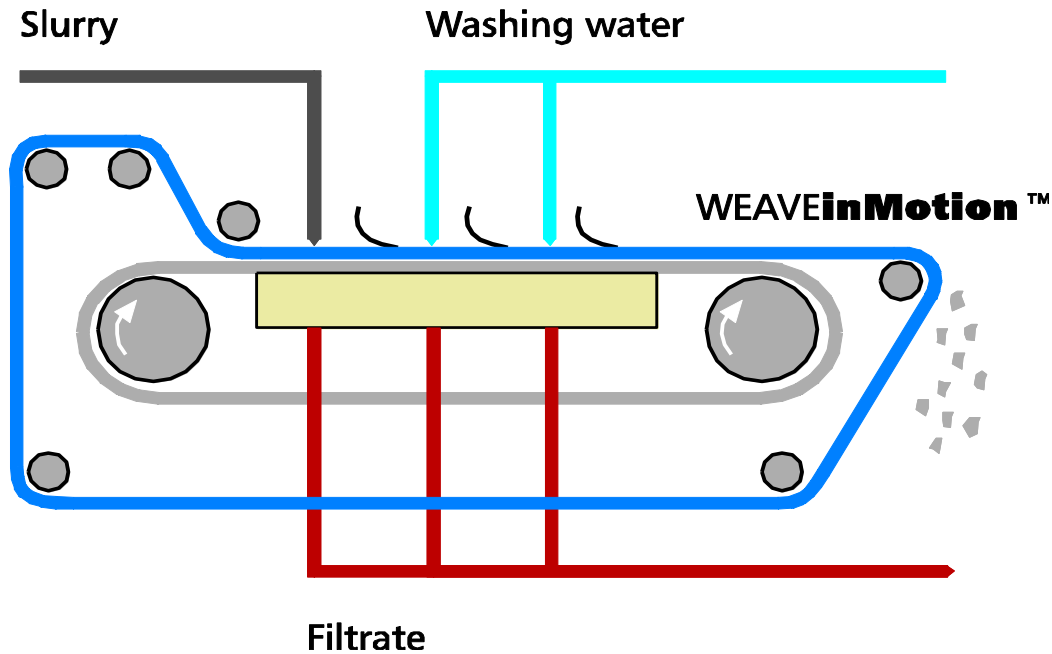
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FGD-Process

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Schematic Diagramm of Vacuum Belt Filter

Slurry

Washing water

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Filtrate

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Gypsum Handling

The gypsum handling system consists of a hydro cyclone thickening the gypsum slurry …

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Gypsum Handling

... followed by a vacuum conveyor belt filter for the final gypsum flushing and dewatering.
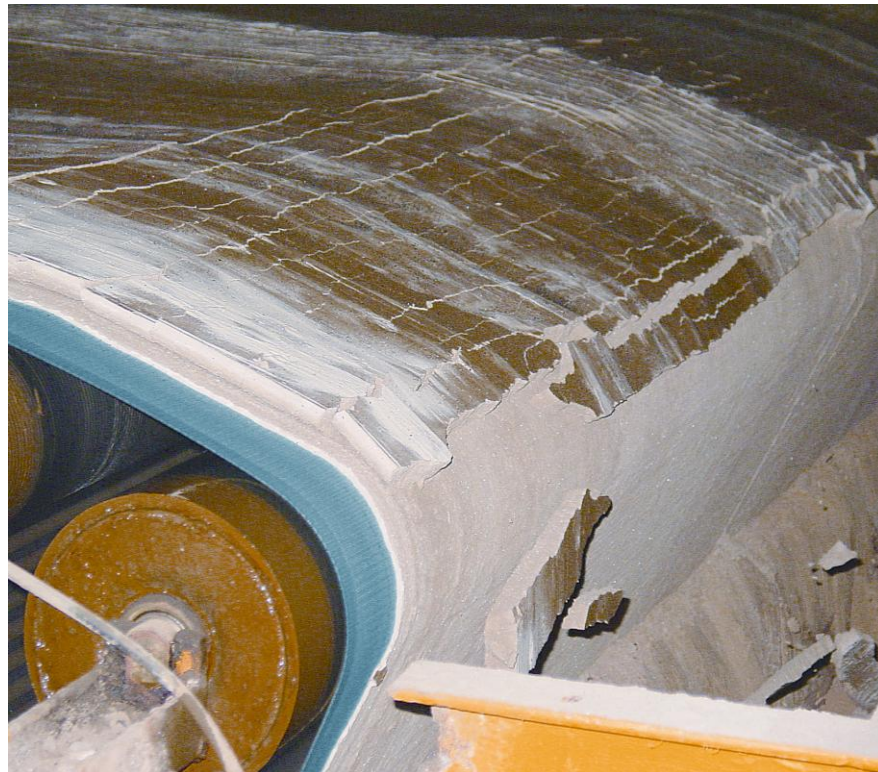
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Construction of Vacuum Belt Filter

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Utilisation of Gypsum from FGD Plant

Today basically all the produced gypsum is used for the production factories of gypsum boards. All gypsum is produced according to the stringent specification of quality and limits of impurities.

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Production of Filter Belts

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Aerial Image of GKD Dueren, Germany

Flue Gas Desulphurisation

Weaving Loom

Flue Gas Desulphurisation

Technical Data of VACUBELT® 2035

Material warp wire		:	PES
Material weft wire		:	PES
Meshcount	no. per cm	:	20 / 22
Wire diameter	mm	:	0.56 x 0.28 / 0.65 + 3340 dtex
Weave		:	double layer twill
Thickness	mm	:	1.70
Weight	kg/sqm	:	1.40
Air permeability	l/(sqm/sec)	:	300
Air permeability	cfm	:	45
Mesh opening	micron	:	90

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Technical Data of VACUBELT® 2025

Material warp wire		:	PES
Material weft wire		:	PES
Meshcount	no. per cm	:	20 / 23
Wire diameter	mm	:	0.56 x 0.28 / 0.50 + staple fiber
Weave		:	double layer twill
Thickness	mm	:	1.45
Weight	kg/sqm	:	1.25
Air permeability	l/(sqm/sec)	:	140
Air permeability	cfm	:	22
Mesh opening	micron	:	80

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Technical Data of VACUBELT® 2015

Material warp wire		:	PES
Material weft wire		:	PES
Meshcount	no. per cm	:	96.4 / 11.5
Wire diameter	mm	:	0.20 / 0.65
Weave		:	2/2 twill (single layer)
Thickness	mm	:	1.15
Weight	kg/sqm	:	1.10
Air permeability	l/(sqm/sec)	:	350
Air permeability	cfm	:	55
Mesh opening	micron	:	50

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Comparison of air permeability and mesh opening
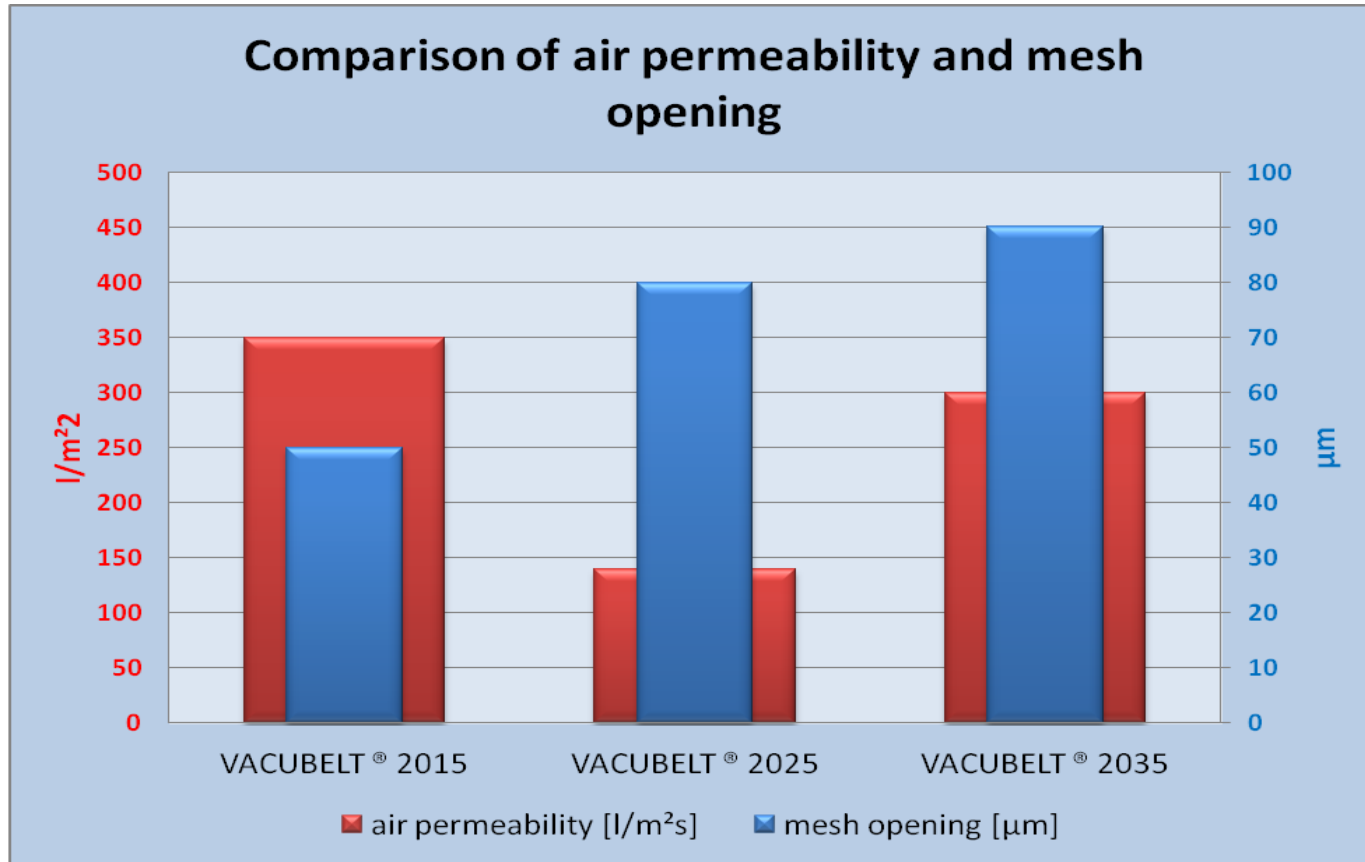
Benefits of polyester monofilament cloth Vacubelt® 2015 compared with multifilament weft yarns

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Questions and Answers

How low is typical moisture content?

With our VACUBELT 2015 we reach down to 7-8 %. The 2015 cloth has an air permeability of 350 l/m²/s (2025 = 140 l/m²/s, 2035 = 300 l/m²/s).

What about blinding of multifilaments, which will in turn drive up the final moisture content.
Blinding is the biggest problem for clothes with multifilaments in weft direction. This was one of the main reasons to create the 2015 cloth.

1000 µm / 100

1000 µm / 100

Flue Gas Desulphurisation

Questions and Answers

What is the typical availability of these FGD Vacubelts?

We weave multiple production runs over the course of a year. This allows GKD to stock all 3 of our main belt specifications and offer competitive lead times and pricing.

What kind of seam is recommended?

We use a stainless clipper seam with a pin wire made of polyester. Due to constantly bending of the edges a metal wire will break after a while. If this happens the scraper can cause a bigger damage to the cloth. A polyester wire is more flexible. After closing the seam the seam area will be sealed with a special silicone or 2-component-glue.

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