

amafilter®

MOLTEN SULPHUR FILTRATION SOLUTIONS



amafilter[®]
Filtration Group[®]

Amafilter® is a Filtration Group brand, specializing in the design, engineering, and manufacture of molten sulphur filtration solutions for the mining & minerals, the fertilizer, the sulphuric and phosphoric acid and the oil refinery industries. Our expertise is built from over 75 years' experience of providing filtration solutions for sulphur applications across the world, using our expertise and knowhow to maximise customer's sulphur filtration processes.

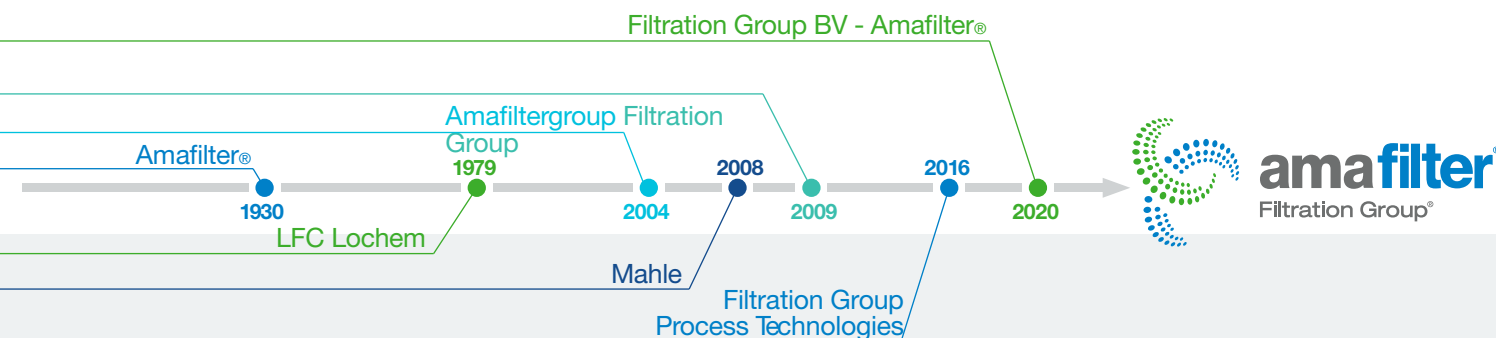
Our engineered sulphur filtration solutions ensure the effective removal of contaminants from the sulphur process, delivering an efficient and reliable process, with minimum maintenance. Our product portfolio offers a dedicated range of specifically designed products for the sulphur process which can be delivered skid mounted as a complete package and fully automated if required.

Amafilter® has extensive expertise in the molten sulphur sector of the sulphuric acid industry, having designed and supplied pressure leaf filter systems and cartridge filters across the globe assisting customers to optimise their molten sulphur total filtration process.

Our service team has built years of experience and knowhow in sulphur applications and delivers world-class service and support across the globe, optimizing filtration processes.

We believe in partnering with our customers to provide total filtration solutions throughout the life of a filter. Our experienced laboratory team can assist to optimise filtration processes and maximise efficiencies. We work closely with our customers throughout the process and can assist in the complete design, testing, commissioning and servicing of a project.

Our service teams deliver world-class service and support across the globe, using their technical know-how to optimize your filtration process.



We understand our customers rely on our knowledge, expertise and experience for innovative filtration solutions. Customers depend on us – we deliver.

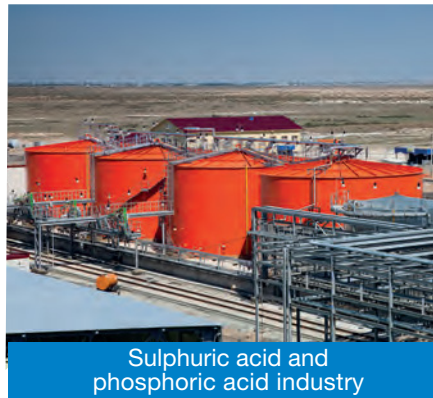
Molten Sulphur Filtration Solutions

Sulphur is one of the world's essential resources and plays an important part in many industrial production processes. Molten sulphur applications require effective filtration solutions to remove impurities such as ash, dust, organic particles and carbon particles, such as asphaltides and bitumen.

Without the correct filtration process these impurities can produce a negative impact on the further process, causing severe operational disruptions. The following main industries use Sulphuric acid as part of their process where molten sulphur is one of the raw materials for the production.



Fertilizer Industry



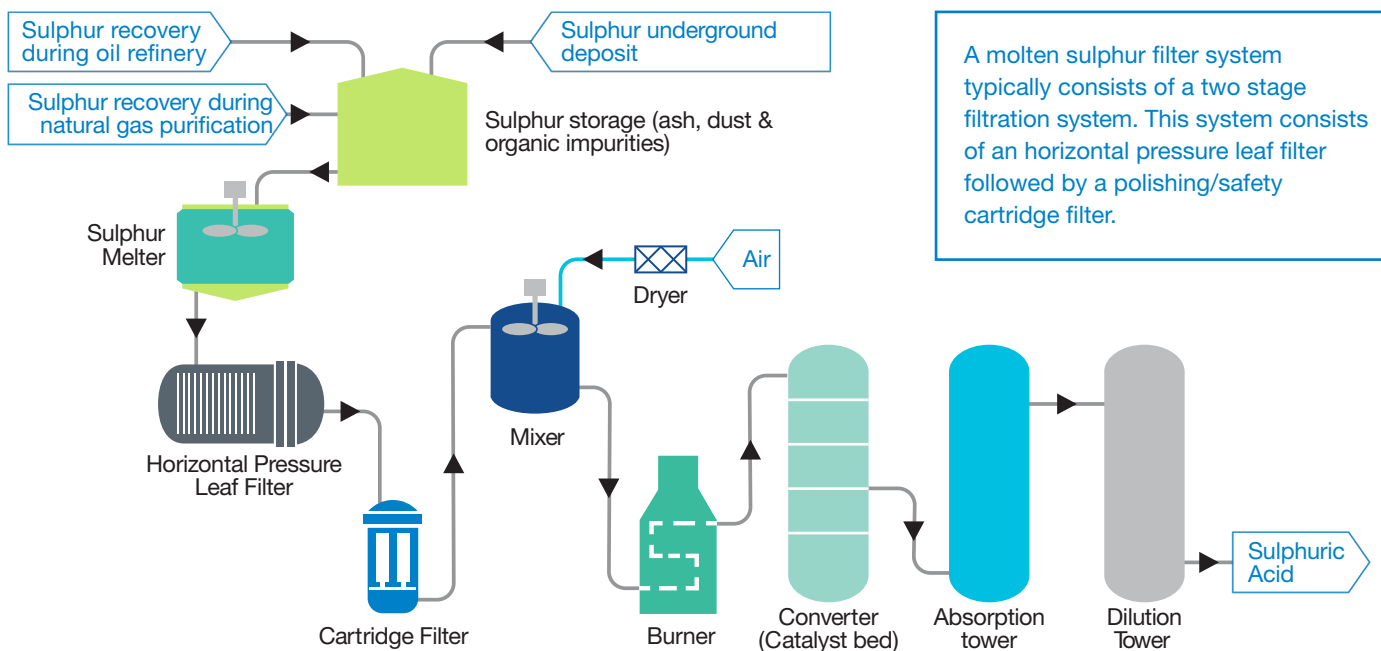
Sulphuric acid and phosphoric acid industry



Mineral processing industry

Selecting the correct equipment for your molten sulphur filtration process is essential in ensuring your sulphur plant operates efficiently, safely and productively.

Amafilter®'s product range of horizontal pressure leaf filter systems, VC cartridge filter system and amaCera ceramic filter cartridges are specifically suited for molten sulphur applications.



Horizontal Pressure Leaf Filter System

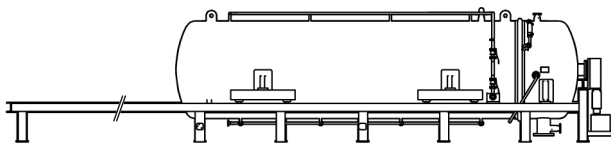
The amafilter® horizontal pressure leaf filter is a closed system ideally suited for both main and safety/polishing filtration of molten sulphur applications.

This system is also available as an advanced modularized pre-assembled mobile filtration system which can be tailored made to customers specific requirements.

Features & Benefits

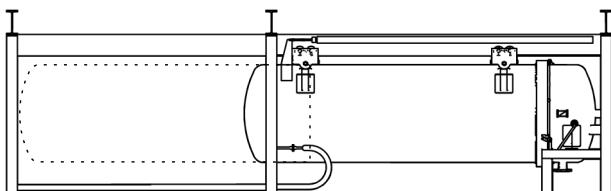
- Proven technology
- Fully automated, making it safer and requiring limited maintenance, hence lowering operational costs
- Larger filtration area due to the shape of the filter leaf elements
- The pressure leaf filter is a closed filtration system which ensures safety of use.
- Easy access to the filter leaves for removal of the cake
- Shorter regeneration time between filtration cycles, lowering operating costs as the filter can filtrate for longer periods without disruptions.
- The pressure leaf filter system has no rotating parts, keeping maintenance to a minimum.
- Exchangeable inlet manifold side bars on each side of the filter elements to ensure easy access
- Heating jacket to maintain high process temperatures
- 125cm space between each filter leaf to allow for precoat and longer filtration times
- Filter leaves are mounted on a manifold for easy access and removal of cake
- Easy to clean pressure filter leaves
- Reinforced filter elements, longer life time

RETRACTABLE SHELL VS RETRACTABLE BUNDLE



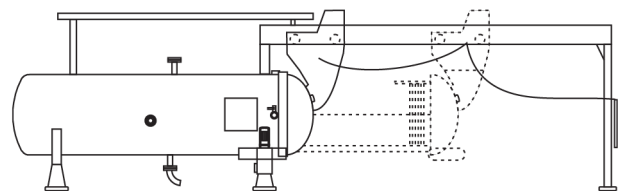
Retractable shell with a lower support frame:

The bundle doesn't move here, the shell is supported by rails and moves over the bundle.



Retractable shell with an overhead suspension frame:

The bundle doesn't move, the shell hangs from a support structure and moves over the bundle.



Retractable bundle:

The shell doesn't move; the bundle with filter leaves moves in and out of the shell.

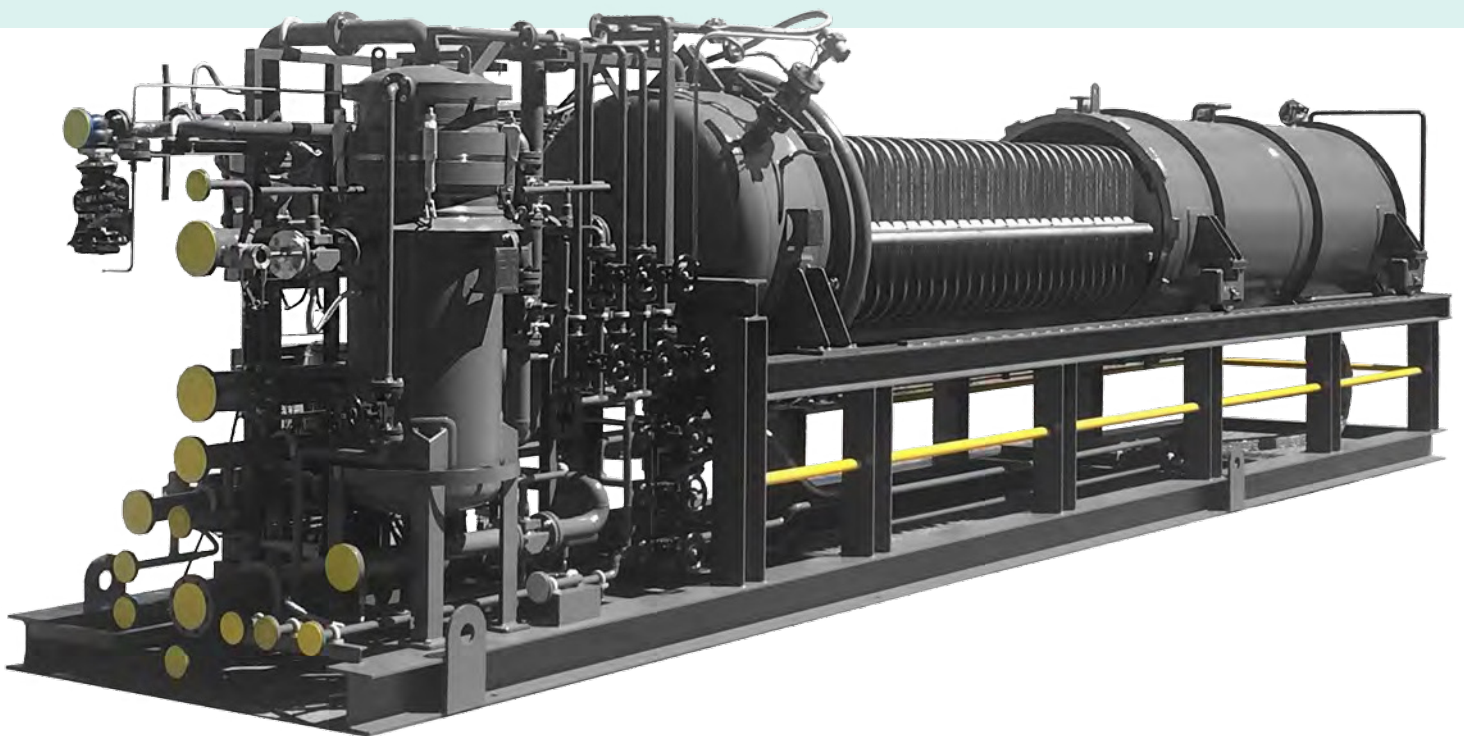
Modularized advanced mobile horizontal filtration system

The amafilter® advanced modularized mobile horizontal filtration system, is a pre-assembled all-in-one automated plug & play filtration system which is tailor-made to customer specifications.

The filtration system is designed to process a daily capacity of up to 540 metric tonnes and incorporates the horizontal pressure leaf filter and cartridge filter on one skid-mounted unit. The skid includes a plug and play installation, piping, instrumentation, automation and a control panel with a programmed PLC.

Features & Benefits

- Plug & Play unit ready for production
- Easy to install: minimum installation required
- Cost effective: limited on-site installation costs
- Easy to connect: quick connection to utilities like air/steam/power and to molten sulphur.
- Civil works are minimised. Quick return of investment as the system can initiate production promptly once delivered
- Low transport costs as it can be transported on standard containers and flat racks system can travel on universal standard truck sizes
- Heavy Duty, design for impact resistance
- High sulphur filtrate quality removing up to a maximum of 10 ppm of solid impurities
- Exchangable inlet manifold side bars on each side give easy access to the pressure filter leaf-making maintenance easy.
- Hydraulic bayonet mechanism for ease of opening and closing system
- Piping system connection on one side of the skid for easy plug and play





VC Cartridge Filter Housing

The amafilter® VC cartridge filter for molten sulphur safety/polishing filtration is used as a polishing filter for the removal of fine ash and other particles, which occasionally could find their way through (by-pass), when the main filtration is not 100% effective. The VC cartridge filter is also used as a safety filter (police) to prevent precoat material passing through the horizontal pressure leaf filter due to mistakes in switching valves, insufficient precoat and stranges in flow.

The VC cartridge filter is installed downstream the main horizontal pressure leaf filter.

Features and benefits:

- The filter cartridges are mounted on a septum plate making it easy and quick to replace the existing filter cartridge batch with a new set hence reducing servicing and minimizing downtime.
- Delivers effective polishing filtration ensuring that solid impurities are reduced from 20-30 PPM, generated by the first main filtration step, to an even lower value of 5-10 PPM. This is critical to the process as these solid impurities (contaminants) have a direct impact on the performance of the sulphur burners and catalyst converter beds (sulphuric acid production unit). They are progressively poisoned by dirt accumulation giving rise to increases in pressure drop and shorter operating durations.

The amafilter® VC polishing cartridge filter in combination with the amafilter® horizontal pressure leaf filter deliver significant benefits:

- the time between maintenance break downs (intervals) of the catalyst beds, sulphur burners and pipe reactors is considerably improved from 3-6 months to 2 years. This results in significantly lower maintenance costs.
- Improved safety as less interventions are required to optimise the system.



The amafilter® amaCera Ceramic PC filter cartridge

The amafilter® amaCera ceramic PC filter cartridge is specially designed for the polishing filtration of molten sulphur.

Porous ceramic filters are used for solid particulate removal in liquid and gas applications. These rugged porous ceramic cartridges are manufactured by fusing aluminium oxide grains using a porcelain bond to form a strong, uniformly porous and homogeneous structure.

Features and benefits:

- Temperature resistant to 800 °C (can be limited by the use of gasket or sealing material)
- High corrosion resistant
- Robust mechanical characteristics
- Abrasive resistant
- Absolute filtration rating
- Easy cleanable



Amafilter®'s reputation for delivering outstanding service and efficient filtration systems is built on decades of hard work, research and design. All of which allow us to produce industry-leading products which meet full international standards.

We are committed to service

We work closely with our customers to understand their filtration needs. And then use our expertise to customize their system processes to enhance performance and improve the total cost of ownership.

From our test laboratory in Lochem, Netherlands, we provide testing services using the latest filtration equipment so we can offer customers the right products for their specific application. And we carry out sample screening tests to demonstrate how amafilter® can improve your filtration process.

Should you wish to have tests carried out at your plant, we have an extensive range of testing equipment which can be rented and installed at your premises. This will provide you with information on the suitability of your chosen system, ensuring you reduce capital investment risk and achieve the best possible results for your operation.



Engineering Services

Consultancy & Analysis
 - System Optimisation-
 Process Engineering Package (PEP)
 Existing Vessel Evaluation
 New Vessel Design
 Software Engineering



Field Services

Field Service Support
 Installation & Commissioning
 Rental
 Site Inspections
 Spares
 Re-screening
 Maintenance programmes
 On-site (operator) training



Lab Services

Equipment and Process Optimization
 Upgrades and overhauls
 Fluid Quantification
 Quick Scan laboratory test
 Extensive laboratory test



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