

SULPHUR PROCESSING SOLUTIONS



Experience



Recognising outdated technology, Sulphurnet was founded in 2007 with the intent of delivering custom solutions for sulphur melting and filtration plants, armed with a background of more than 30 years' expertise in industrial filtration.

From Culemborg in the Netherlands, we now design, plan, manufacture and ship filtration equipment, complete sulphur plants and accessories to more than 200 clients all over the world.

Sulphurnet is not just about sulphur processing systems; it's about helping our customers around the world reduce their production costs, heighten their product quality and yields, and improve their safety, health and environmental performance.

Sulphur processing



Lately, Sulphurnet has focused its activities on the production of liquid sulphur plants. We engineer total sulphur melting and filtration systems to the strictest production and environmental parameters, with a typical turnkey project covering everything from feeding the solid sulphur and filtration, up to to the clean sulphur storage tank.

Our activities range from cooperation during FEED (front-end engineering design) to EPC (engineering procurement construction) contracts, and turnkey solutions for sulphur melting and purification, including utility equipment and control systems.



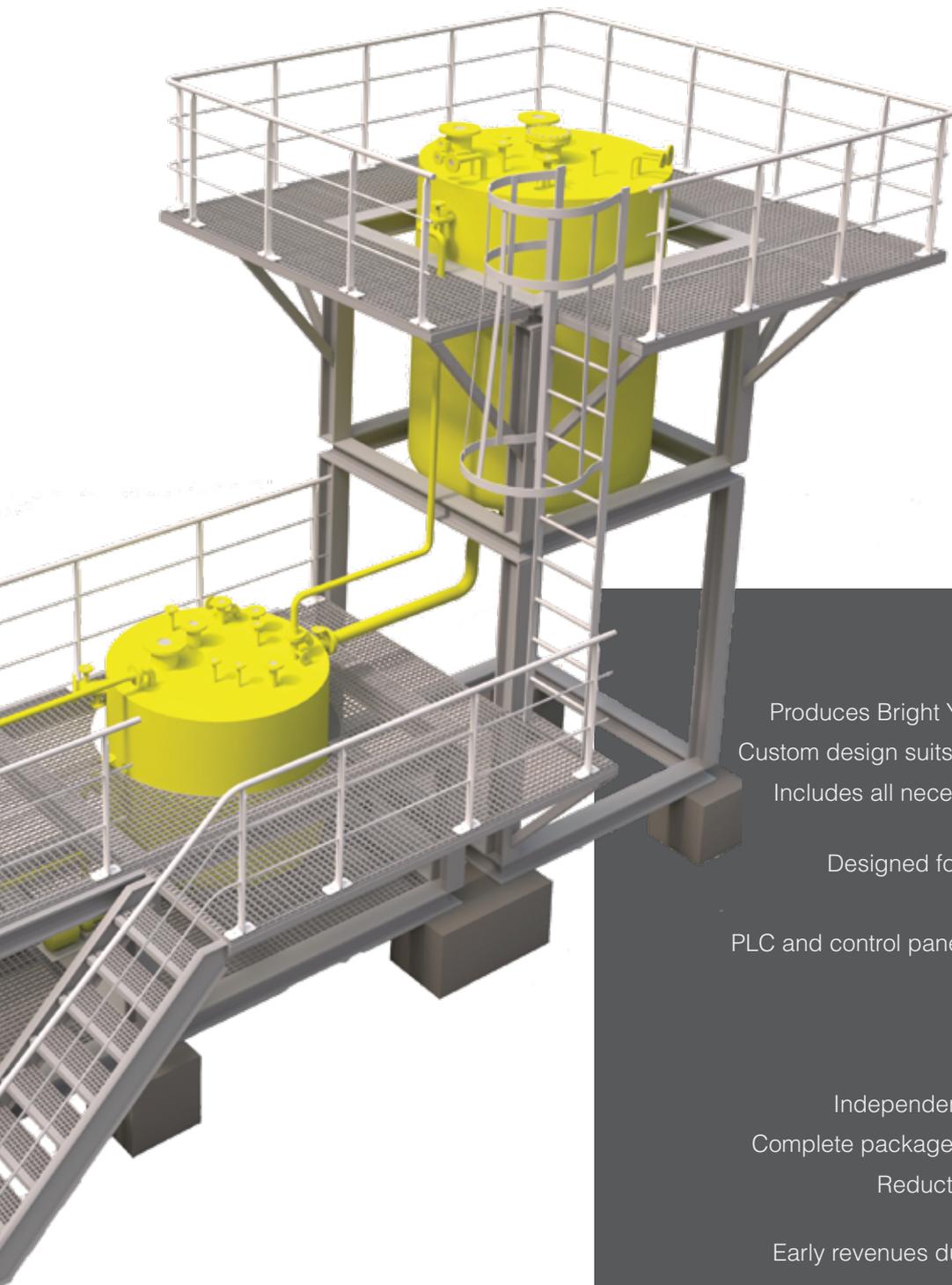
Sulphurnet has developed modular units for sulphur melting and filtration. These units can be combined to create a complete compact sulphur melting and purification plant that is adaptable for a broad range of capacities, from 5 to 300 Mt clean sulphur/day.

The design is meant to be "plug and play" and completely efficient, giving high quality sulphur output and minimising sulphur losses.

The liquid sulphur filtration is based on a flow-controlled system monitored by filtration dP; this is done to ensure proper filtration. The filter has an easy cake drop and is easy to clean. The use of modules allows us to upscale the system if required; this gives users the freedom to increase production with the introduction of new modules.

Liquid Sulphur Plug and Play Modules





ADVANTAGES

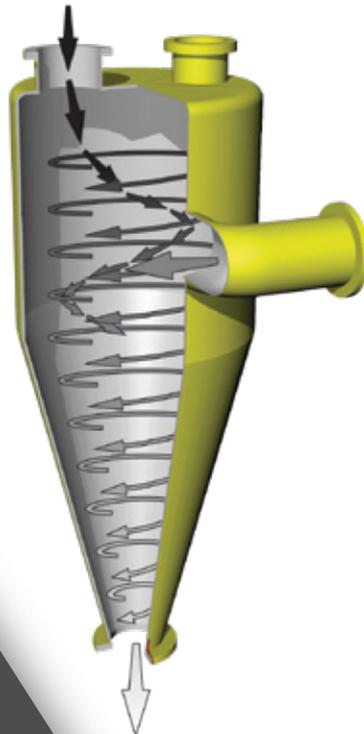
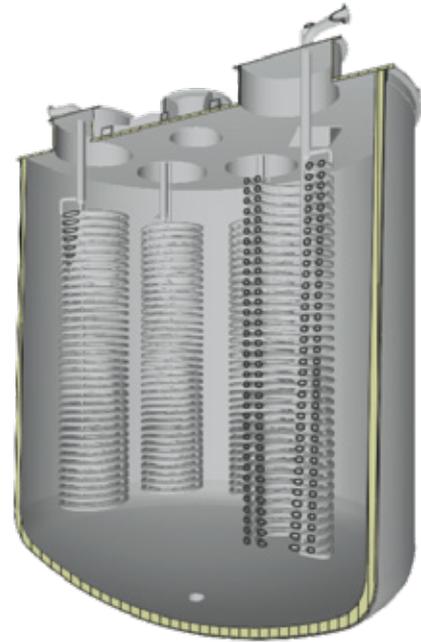
- Produces Bright Yellow Sulphur (ash < 10 ppm)
- Custom design suits your production requirements
- Includes all necessary operating equipment for plug and play installation
- Designed for longevity, avoiding corrosion
- Automated to your needs
- PLC and control panel for remote or local operation
- Low operating costs
- Easy to transport and install
- Lower overall project costs
- Independent timewise of building permits
- Complete package pricing, no more cost overrun
- Reduction of overall construction and commissioning time
- Early revenues due to shorter project execution

ABOVE-GROUND SULPHUR MELTER

Sulphurnet melters are above-ground tanks with steam coils, which provide the energy required for melting solid sulphur.

The tank has a conical bottom with the ability to drain without stopping operation, and is executed with a brick internal lining for corrosion prevention. To intensify the melting rate, the melter is fitted with an agitator that increases the velocity of the sulphur along the heating coils, keeping solids in suspension and improving the neutralisation by improving the contact with lime. To guarantee good operation, the geometric factors--such as the coil design, agitator choice, position of the solid sulphur inlet--are analysed with a CFD Simulation.

The main advantages are: better heat transfer, less settling, continuous operation due to heavy solids remaining in the melting tank, no need to shut down the melter and no manual cleaning, which saves time and has less sulphur wasting.



FLASH SULPHUR MELTER™

Specialised to handle sulphur with high impurities and moisture contents.

Benefits:

- Compact design (small plot space)
- Increased capacity of existing melting plant
- No moving parts, low maintenance cost
- No internal coils, less corrosion
- Can handle sulphur with high water contents
- Suitable for powder type of sulphur
- Less foaming issues

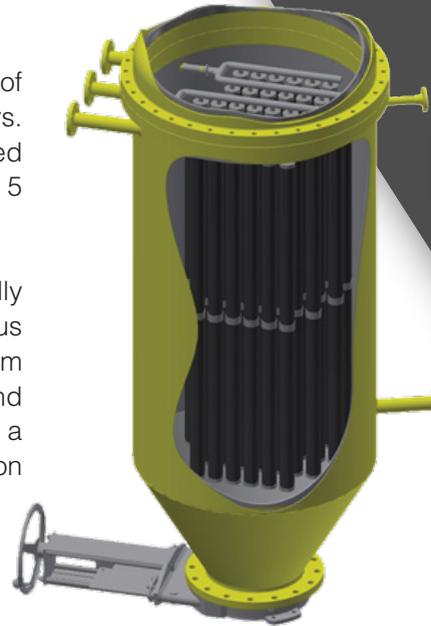
**Sulphur
Melting
Equipment**

Sulphur Filtration Equipment

LIQUID SULPHUR POLISHING FILTER

Liquid Sulphur Polishing Filter is used for the removal of fine particles passing the primary pressure leaf filters. Fine solids--such as ashes and filter-aids--are removed to a level of less than 5 ppm for particles smaller than 5 microns.

The porous ceramic filter cartridge is specially designed for the polishing of liquid sulphur. Porous Ceramic cartridges are manufactured from aluminium oxide, which exhibits high chemical resistance and mechanical strength. The fine porous types with a smooth surface are particularly suitable for fine filtration utilising back-washing by steam.



SELF-CLEANING CANDLE FILTER

The primary purpose of the Self-Cleaning Candle Filter (SCCF) is to achieve the most optimal filtration results and to remove any remaining contaminants from the sulphur. A filtration efficiency as low as 5 ppm can be achieved.

Benefits for Sulphuric Acid Plants:

- Cleaning is performed by efficient and thorough back blowing with air
- Helps to reduce the pressure differential build-up in the converter
- Reduces maintenance costs and operational losses of the acid plant
- Can also be installed in existing plants
- Automated cleaning
- Fine filtration at the sub-micron level for acid plants / catalyst protection
- Closed systems, no emissions

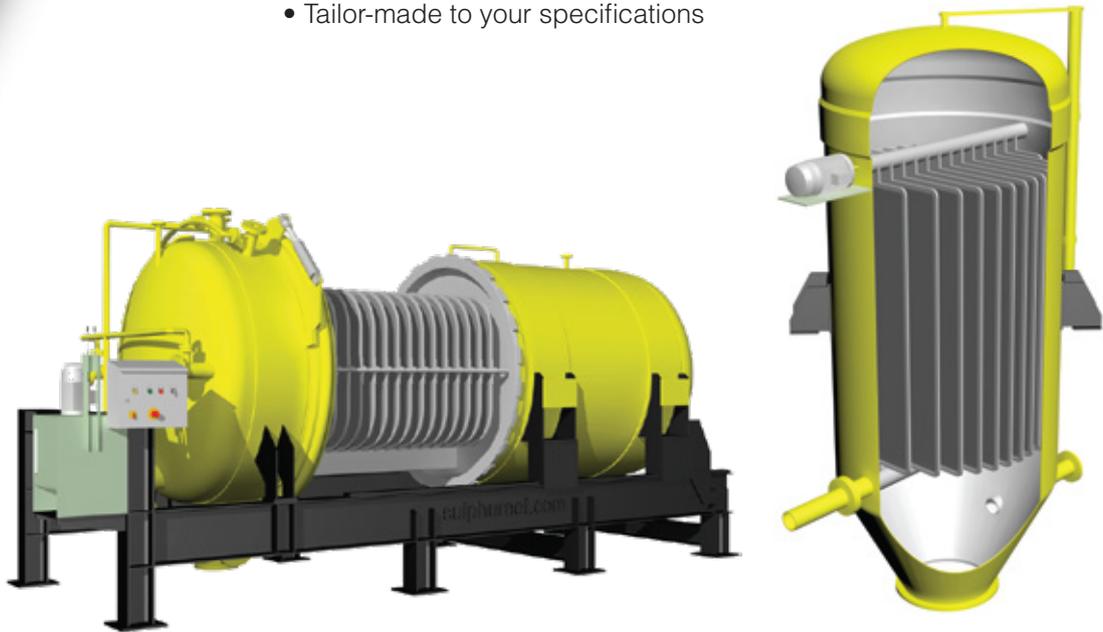
Pressure Leafs Filtration

PRESSURE LEAF SULPHUR FILTER

The Pressure Leaf Sulphur Filter removes contaminants--such as ash and bitumen--can plug the catalyst mass downstream in the converter.

Some of the advantages are:

- Decreased maintenance costs and improved plant operation time
- Reduction of contamination reduces the acidity of the sulphur and corrosion
- Retractable tank and fixed cover; no need to disconnect pipelines for cleaning procedures
- Filter leafs remain stationary; no cake dropping during opening
- Quick closure with long gasket lifetime
- Durable filter leafs with optional acid-resistant filtration mesh
- Fully hydraulic operation
- Tailor-made to your specifications



*We make custom designed filter leafs
for all filter brands*

FILTER LEAFS

Good filtration performance begins with high quality filter leafs. We will help you find the perfect design for your needs to achieve better filtration performance and lower operating and maintenance cost.

- Rigid and durable construction
- Long lifetime
- Customizable designs
- Fast filtration rate
- Sufficient drainage area
- Bolted construction
- Filter Leafs can be re-meshed on site
- Mesh possibilities:
 - 316L SS Standard
 - 316 NSCD (higher corrosion resistance)
 - 904 SS (higher corrosion resistance)



POLISHING CARTRIDGE

Porous ceramic filters are designed especially for the polishing filtration of liquid sulphur.

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.



- Temperature resistant to 900°C
- High corrosion resistance
- Removes solids to less than 8ppm
- High mechanical strength
- Easy to clean

Consumables

TURBIDITY ANALYSER

An online turbidity measurement system designed to provide online, real-time control of the ash content in the sulphur filtrate line. Measures in low ppm range. The system is fitted with a jacketed measuring device and a control box with outputs to the control room.



JACKETED RADAR LEVEL INDICATOR

Maintenance-free level measurement; no condensation of sulphur. For agitated melters/vessels as well as storage tanks. Equipped with a 4-button touchscreen display and accuracy of ± 3 mm from 1 to 10 m.

PRESSURE INDICATOR

The pressure indicators are designed for pressure and pressure differential measurements. Sulphurnet offers various forms and connections.



JACKETED FLOWMETER

Coriolis-mass flow meter with premium accuracy, robustness and extended transmitter functionality. The custom jacketed design prevents condensation of sulphur.

THERMOWELL

Temperature indicators and temperature transmitters.



Engineering Services

Our engineering focuses on the design of all the special challenges and demands you meet in sulphur melting and purification plants. Corrosion issues, cold spots problems, auxiliary installations such as sulphur dust collection, firefighting—all are included in our engineering package. We carefully determine an optimal sizing of melters in combination with the sulphur filtration process, so the processes can work ideally and avoid oversizing of equipment.

We offer a complete service: basic engineering, detailed engineering, management, audits and consultancy, executions, after sales, training and maintenance support.

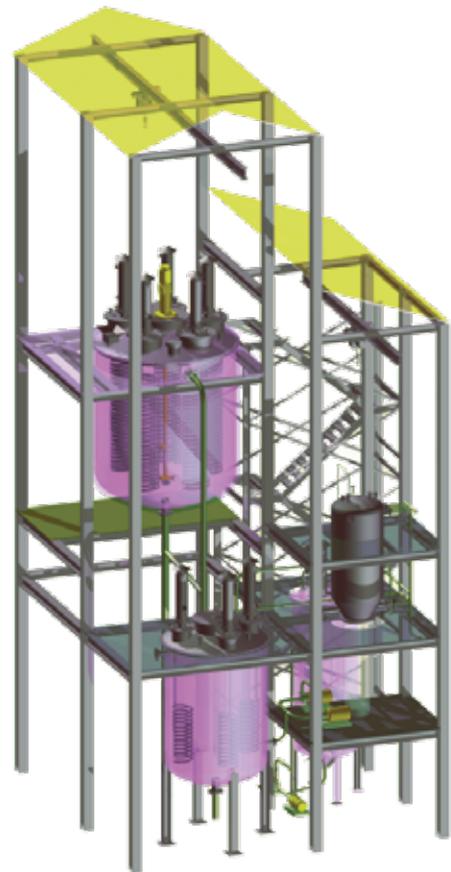
BASIC ENGINEERING

The basic engineering design phase is generally associated with an economic and financial feasibility study for one or two solutions. Details of the design are given, including the Process Flow diagrams with mass balance, piping and instrumentation diagrams, including the datasheet of the equipment. An operating description and process control philosophy helps in understanding the plant set up.

DETAILED ENGINEERING

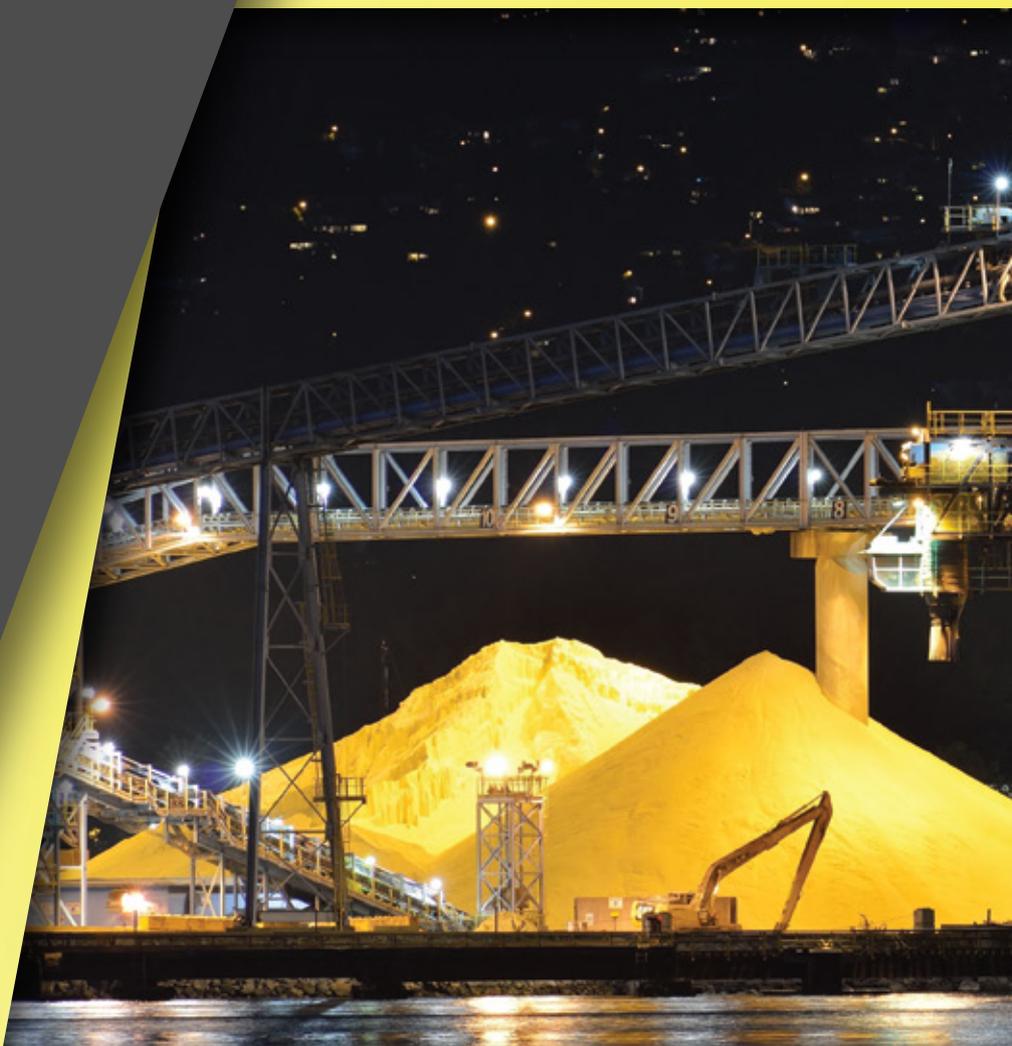
After basic engineering, documentation ready for construction of the plant structures and main equipment is part of the detailed engineering package. For the remaining equipment, sourcing details of suppliers and all technical details can be engineered and supplied, ready for purchasing.

Detailed engineering can be performed for any project size, from small modular skid-sized units, to large-scale production, including heavy project requirements, specifications and documentation.



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