

# Coal-Fired Power Generation



Products & Solutions  
**The SOLAFT Edge**

Filtration solutions you can rely on

# Coal-Fired Power Generation

The Coal-Fired Power Generation segment is a primary focus for our business. SOLAFT has been designing and manufacturing custom engineered specialty filtration solutions for the sector since 1972. Our goal is to be the most respected supplier of high performance filter products to the Coal-Fired Power Generation segment globally and we have orientated all parts of our activities to achieve this goal.

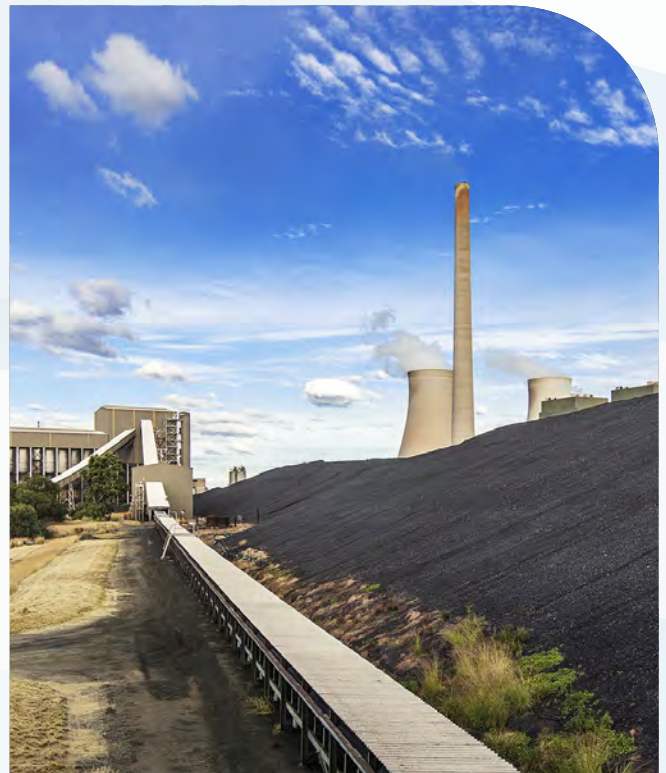
We specialise in providing a complete range of products and services to enable operators of Coal-Fired Power Stations to achieve optimal performance from their baghouses. From filter bag design and supply, filter bag installation, total baghouse maintenance, monitoring and optimisation, we cover it all. We also work with our Coal-Fired Power Generation customers to provide expert advice on alternatives to costly baghouse refits.

We deliver a range of high quality custom-engineered filter bags that are best suited to any requirements your baghouse may have.

In a large global industry, we have developed a niche market, providing unique high performance solutions that meet the exacting and specific requirements of Coal-Fired Power Generation operators around the world.



**Whether these requirements are lower emission, longer or more predictable filter life, lower differential pressures or higher production rates SOLAFT has a solution or will develop a solution for you.**



## Proven Solutions

### Performance issues due to excessive fabric shrinkage

A Coal-Fired plant in NSW Australia was experiencing significant performance issues due to shrinkage of a competitor filter bag. This had reduced load and performance, and raised safety concerns due to the constant requirement for inspection and maintenance of the hanger bars. The plant approached SOLAFT Filtration Solutions to provide a quality filtration solution to improve performance, longevity and stability.

### The SOLAFT Solution

SOLAFT Filtration Solutions worked closely with the plant's engineering, production and service teams to design a custom engineered homogeneous fibre blend combining Polyacrylonitrile (PAN) and Polyphenylene Sulfide (PPS) fibres. The non-woven media was fabricated into filter bags on precision equipment, and adhered to SOLAFT's strict quality control processes.



## Outcome

After successful trialling, the filter bags were introduced into all four baghouses, with significant performance improvements including:

- Increased load capacity with record low filter bag defects
- Reduced flue gas particulate to  $0.05 \text{ g/m}^3$
- Reduced emissions and maintenance costs
- Extended filter bag life
- Improved safety from reduced maintenance requirements



## Excessive filter bag failure in the baghouse

A Coal-Fired Power plant in Arkansas USA was experiencing premature failure of their filter bags, which not only posed them emission issues, but also financial implications for replacement bags, lost downtime and maintenance costs. The plant approached SOLAFT to solve an issue of premature filter bag failure.

The plant found that they were making excessive filter bag changes due to premature failure, generally occurring within 2-3 weeks of installation. This resulted in higher operating costs, significant diversion of scarce labour resources from other valuable tasks and lost production. The method of failure was holing between the middle and the bottom of the bag, particularly for those bags in line with the inlet of the dust collector.

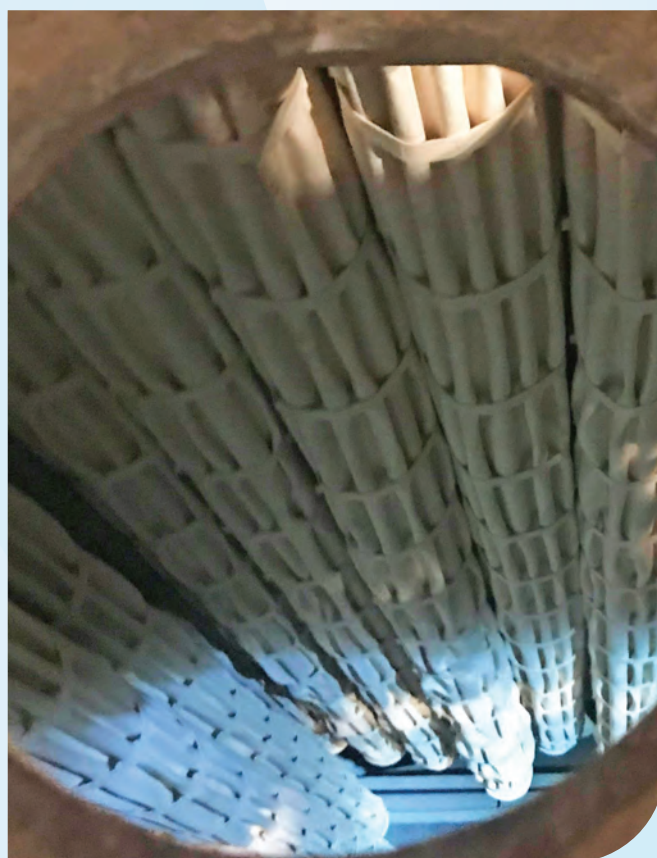
## The SOLAFT Solution

SOLAFT proposed introducing shorter StarBags™, which represented a significant reduction in filter bag length from the existing 8.5m bags. The increased surface area of the shorter StarBags™ enabled the reduced length without compromising particulate capture and production rates. The reduction in filter bag length enabled the filter bags to be removed from the direct line of the dust inflow, thereby eradicating premature failure.

## Outcome

The trial was a success, and the benefits to the Coal-Fired Power Generation plant were:

- Operating DP was reduced 30% whilst maintaining gas flow
- Pulse pressure was reduced 50%
- Significantly improved uptime and reduced maintenance costs
- Air-to-Cloth ratio remained unchanged



## High differential pressure across the baghouse

A Coal-Fired Power Generation plant in Brazil was experiencing significant problems for a few years and could not with their incumbent supplier source a solution. These issues had led the plant to have high differential pressure across their baghouse, along with emissions problems and a high rate of filter bags spot change (weekly basis), which required a constant crew to change bags.

SOLAFT approached this customer and assisted on an investigation as to why the bag house was underperforming, discovering a number of issues in diverse areas, including the supply of low quality filter media. SOLAFT was able to specify and supply first grade quality Filter Bags fully made from fibre to finished bag by SOLAFT.

SOLAFT also assisted the customer during the installation and start-up phase so that the customer could achieve the best outcome.

## The SOLAFT Solution

This 1,500,000 Nm<sup>3</sup>/h and over 25,000 m<sup>2</sup> of filtration area bag house is now operating with SOLAFT bags on emission levels close to 2 mg/Nm<sup>3</sup> and a reduction of 27% in Pressure Drop average, whilst maintaining gas flow and same cleaning frequency. Part of the reason of the pressure drop decrease is SOLAFT's PrimaShield™ finish, which enhances the fabric's ability to repel water (highly desired in a process where high moisture levels can be continuously present). Another benefit is that the customer had ZERO spot changes in the first 6 months of operation. This provided the customer with a high degree of confidence on the reliability of the equipment and peace of mind.

## Outcome

- Emissions much lower than site limit
- Pressure drop reduced by 27% resulting in better process control and energy savings in ID fan
- Considerably lower cost in maintenance for spot changes
- Increased baghouse reliability and availability



## PrimaShield™

SOLAFT PrimaShield™ is a fluoro carbon treatment developed to increase the chemical and temperature resistance of the filter fabric and to enhance oil and water repellence.

PrimaShield™ is ideal for use in challenging environments particularly in Power Stations, where aqueous based acid in dew point conditions, or acid ash problems exist.

## The benefits of choosing SOLAFT

- Vertically integrated manufacture from fibre to finished product
- Proven longer filter life
- Full maintenance service options
- Technical support on hand when you need it
- Continuous optimisation of filter performance
- 100% Australian owned and operated

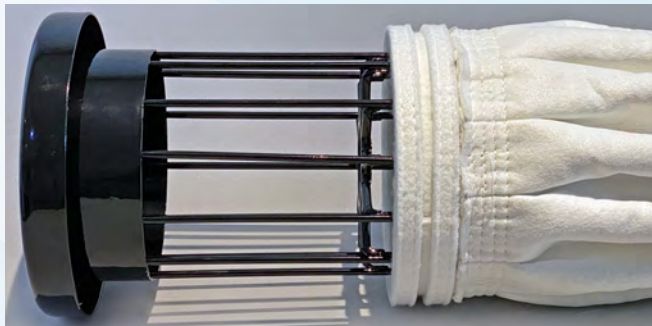


## Products

Our products have been designed to optimise the performance and meet the customised needs of your Coal-Fired Power Generation plant. We work closely with our customers to design custom engineered filter bags with strict quality control measures, to ensure filters are manufactured with precision fabrication, to meet your exacting requirements.

SOLAFT supplies custom engineered woven filter solutions for all fabric filter baghouses, including Shaker, Reverse Air and Pulse Jet.

Tailored products we provided in the Coal-Fired Power Generation Industry include:



### Cages

SOLAFT Filtration Solutions has been designing and delivering standard cages and StarCages™ globally, with a strict adherence to quality and performance in any type of industrial baghouse.



### Low Emission Filter Bags

SOLAFT Filtration Solutions have been working in conjunction with OEM's to formulate specific Low Emission filter media to specifically address the need to lower particulate emissions including PM10 and PM2.5 emissions. We have specific expertise in developing multi-polymer and multi-layer felts



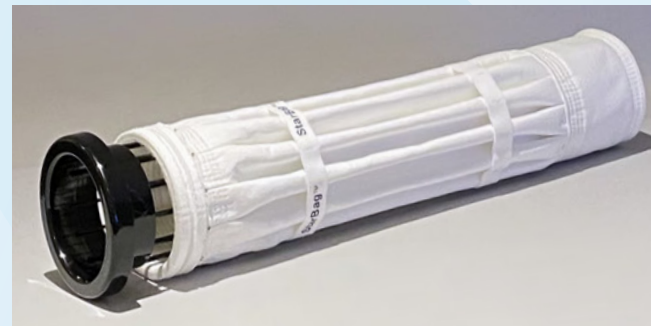
### Filter Bags

Since 1966, SOLAFT has manufactured over 20 million filter bags, which have delivered numerous filter solutions for multiple industries and applications. SOLAFT filter bags will deliver the solution.



### High Temperature Filter Bags

SOLAFT has since 1972 produced High Temperature Filter Bags for a variety of applications, including to the Coal-Fired Power Generation market.



### StarBags™

Since StarBags™ was launched in 1994, SOLAFT Filtration Solutions has been the driving force with extended surface filter technology, and is now recognised as the world leader in this field. Starbags™ are now recognised and accepted as a superior solution in addressing operating constraints faced in many baghouses.

## About Us

SOLAFT Filtration Solutions is an Australian headquartered global environmental solutions company. We have been supplying high performance customised filtration solutions and products to the heavy industrial sector around the world since 1966. We proudly service our customers through 10 points of presence across the Americas, Asia and Oceania and more broadly through our distributor network around the world.

We understand that our customers' needs and expectations change over time due to internal and external operational and environmental requirements. Rather than resisting or ignoring this reality, SOLAFT is completely orientated around embracing this evolution by building best practice capability in:

- Understanding our customers problems and objectives
- Designing and manufacturing customised filtration products to the highest quality standards
- Supporting the deployment and operation of these products on our customers' sites.

This approach ensures that our customers reliably and consistently achieve decreased air-to-cloth ratio, improved particulate capture, lower emissions, reduced costs and extended bag life due to reduced pulsing.

For solutions, advice or just more information, please contact us.



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