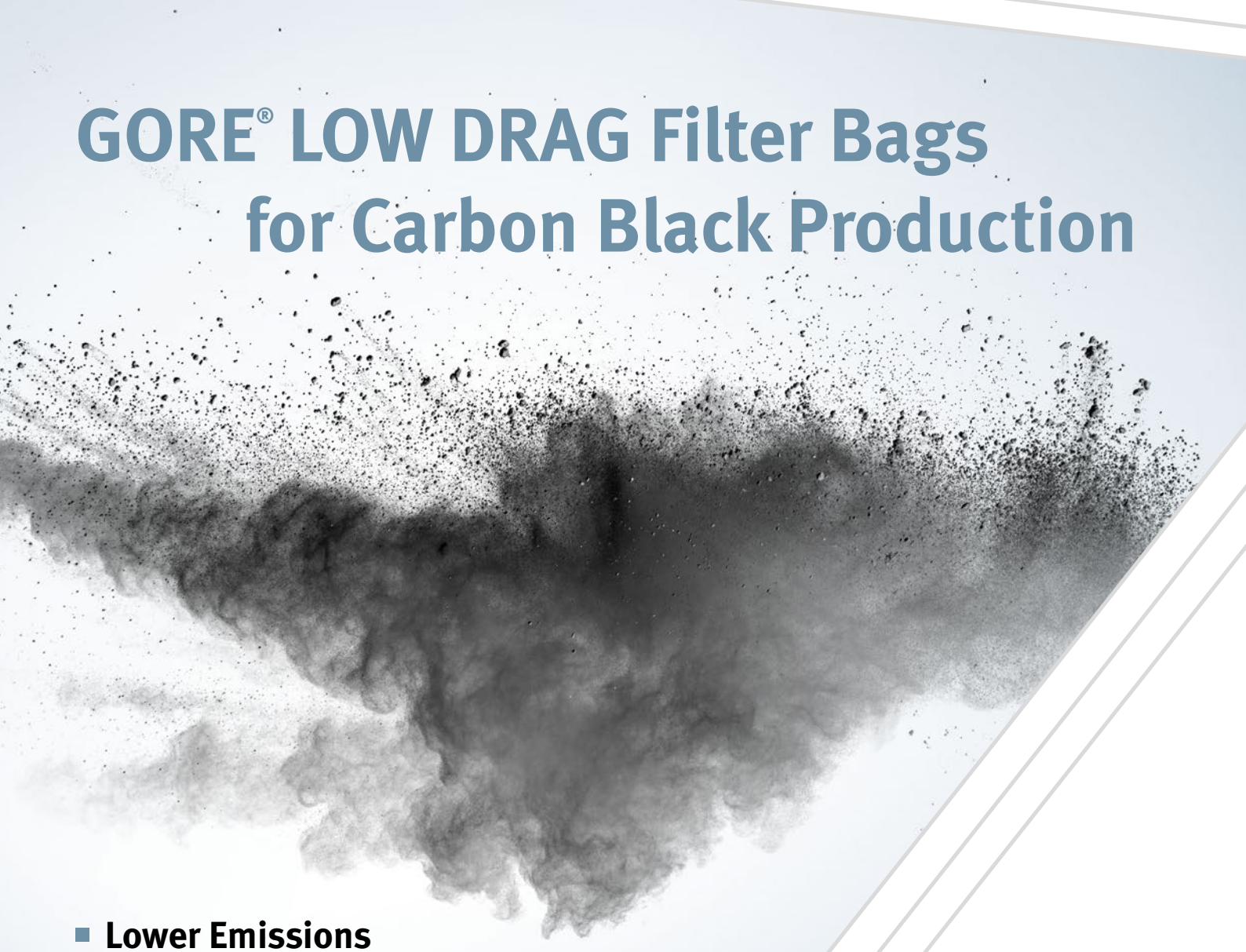
GORE® Filtration Products

GORE® LOW DRAG Filter Bags for Carbon Black Production



- Lower Emissions
- Low & Stable dP
- Longer Bag Life
- Lower Cost of Ownership

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Carbon Black Production Challenges

Carbon black producers know that filter bags are one of the most critical components of the production process. After feedstock and refractory materials, filter bags represent the third highest input cost component for typical carbon black production. As a result, it is essential to source the most cost-effective filtration solution to ensure high productivity and product quality while maintaining low cost of ownership.

GORE® LOW DRAG Filter Bags are a game changer in filtration technology. Through the incorporation of an innovative, proprietary ePTFE membrane, robust design and construction methods, and our expertise in application support and system optimization, GORE LOW DRAG Filters Bags offer carbon black producers the best solution for high-performance, cost-effective product collection.

Proprietary Technology

Building on a tradition of innovation, W. L. Gore & Associates has developed a next-generation expanded PTFE membrane structure with a morphology that resists blinding and emissions while maintaining a high porosity index. Combined with high-quality, durable backing materials, the result is a step change in filtration performance.

What is Filter Resistance?

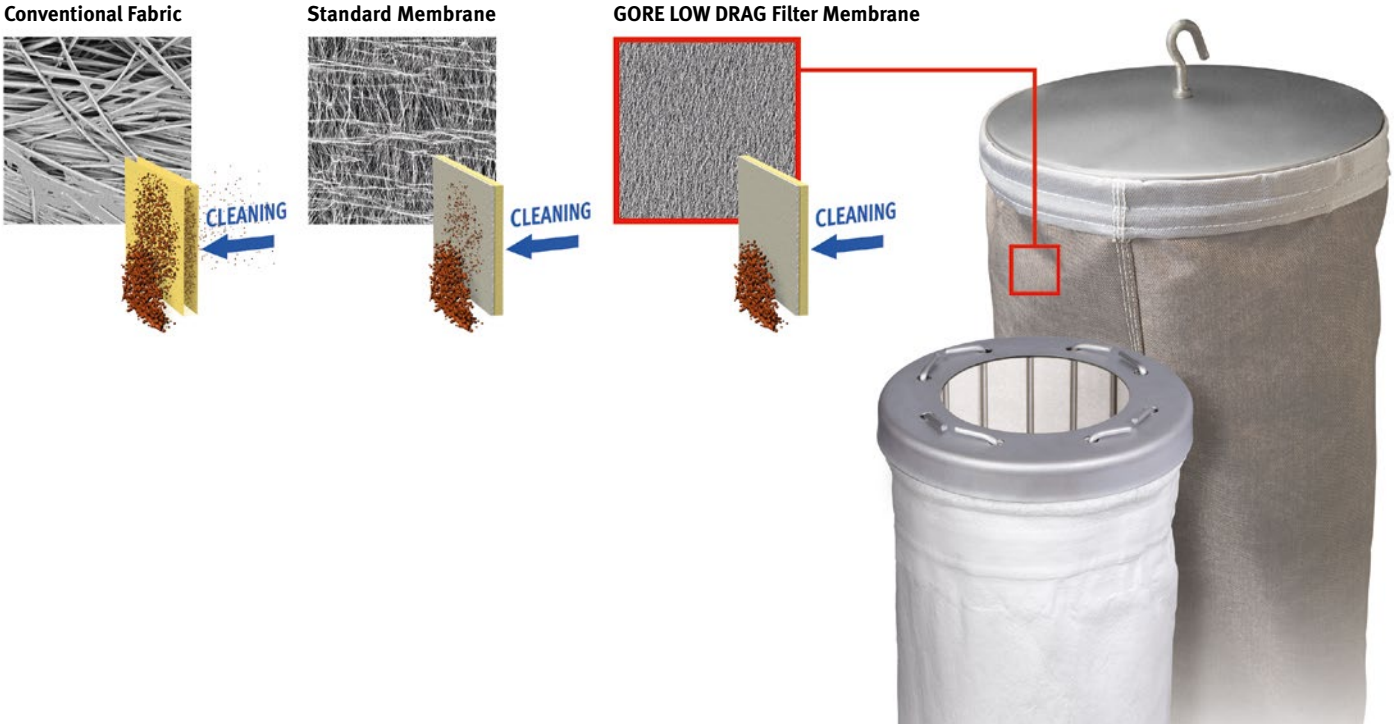
Most baghouse operators are familiar with differential pressure (dP), a measure widely used as a control and monitoring variable for process optimization. Normalizing dP to airflow (or air/cloth ratio, ACR) results in filter resistance:

$$\textit{Filter resistance} = \frac{dP}{ACR}$$

Filter resistance is an important factor in baghouse performance, as it combines the optimal process parameters. Low dP and high ACR are both desirable conditions that result in lower cost of ownership. GORE LOW DRAG Filter Bags can help to optimize any of the components of the filter resistance equation, leading to improved performance and production.

- Lower dP – Longer Bag Life or
- Higher Airflow – More Throughput or
- Lower Cloth – Less Filter Bags Required

GORE LOW DRAG Filter Bags maintain a higher permeability over the lifetime of the bag. As shown below, less dust penetrates the GORE LOW DRAG Membrane than other technologies after an extended period of use, translating directly to the filter bag's increased "cleanability."



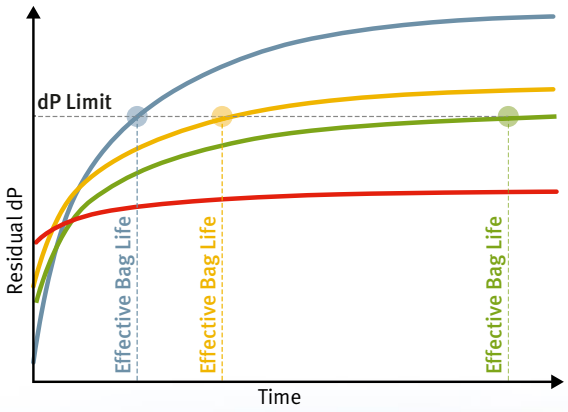
Benefits

Longer Bag Life: The improved cleanability of the GORE LOW DRAG Filter Bag is evident in the measurement of dP over time. Exceeding a dP limit is often used as an indicator of effective bag life. GORE LOW DRAG Filter Bags maintain a lower persistent dP, thereby extending the bag life beyond that of alternative filtration technologies.

Higher Airflow and ACR: Baghouses operate more efficiently with higher airflow. Without sufficient airflow, the system may not be vented adequately, which can be detrimental to process components. In addition, elevating the air-to-cloth ratio (ACR) enables the baghouse to operate at peak efficiencies, improving product collection. In situations where improved throughput is not valued, the higher airflow enabled by GORE LOW DRAG Filter Bags can be leveraged to minimize the number of filter bags required, thus lowering the initial investment.

Improved Energy Recovery: For carbon black plants who employ downstream heat exchangers for the production of steam and/or electricity, GORE LOW DRAG Filter Bags can improve the efficiency of these components. The GORE LOW DRAG Membrane facilitates a higher filtration efficiency, lowering the “sifting” and residual emissions that are typical in alternative technologies. As a result, the heat exchanger components experience less fouling, which improves steam and electricity production efficiency over time.

Lower Risk of Emissions Upsets: Carbon black producers are bound to strict environmental standards for emissions. Unexpected emissions upsets can result in expensive penalties and lost production due to unscheduled shutdowns. GORE LOW DRAG Filter Bags reduce persistent emissions by design, and can be upgraded with Gore Low Emission (LET) technology. Using proprietary materials and construction techniques, this technology enables cost-effective compliance with the strictest particulate emission requirements, including the latest consent decree, NESHAP and PM2.5 regulations.



GORE LOW DRAG Filter Membrane

Outstanding Cleanability

Lower Emissions
- Lower Risk of Environmental Penalties
- Improved Heat Exchanger Efficiency

Unique Performance
- Higher Airflow
- Lower Persistent dP

- Sustained Steady Throughput
- Improved Process Stability
- Fewer Required Bags

Higher Durability
- Lower Required Pulse Pressure
- Longer Effective Bag Life
- Less Unscheduled Downtime

Lower Cost of Ownership

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As an advanced materials company committed to sound science, Gore has changed lives and industries since 1958. Whether it's protecting explorers atop the world's highest peaks, traveling deep into space to enable new discoveries, or working inside the human body to save and improve lives, Gore develops solutions that deliver performance, quality and value. Across industries and applications – from fabrics to medical implants, filtration to space exploration – Gore's commitment to innovation shapes everything we do.

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