DFX Series

DFX™ Series – Dust Filtration Excellence Built for Industrial Demands

DFX-PPS™ – PPS (Polyphenylene Sulfide) Dust Filter Bags Technical Overview

FiltraCore Asia's **DFX-PPS™ Dust Filter Bags** are constructed from **100% Polyphenylene Sulfide (PPS/Ryton®) needlefelt**, typically with a basis weight of **500–600 g/m²**. The felt is supported on a woven scrim to ensure dimensional stability during operation and is available with surface treatments such as **singeing, calendering, or PTFE coating** to improve dust cake release and resistance to chemical attack. **PTFE membrane lamination** is recommended for applications requiring ultra-low emissions and enhanced fine particulate capture.

PPS is classified as a **high-performance filtration media** with a continuous operating temperature of **up to 190 °C** and short-term tolerance to **200–220 °C**. Its main advantage lies in its **exceptional resistance to acids, alkalis, and hydrolysis**, making it highly durable in flue gas streams that rapidly degrade polyester, acrylic, or aramid fibres. PPS also demonstrates **excellent dimensional stability and mechanical integrity** under high particulate loading and repeated pulse cleaning cycles.

The primary limitation of PPS is its **sensitivity to oxidative attack**. Prolonged exposure to high oxygen content, elevated temperatures, or strong oxidisers (e.g. high O_2 combustion air, NO_2-rich flue gas) can accelerate fibre degradation. For this reason, PPS bags are often deployed **downstream of conditioning or gas cooling systems** where oxygen levels and temperature fluctuations are controlled. **DFX-PPS™ bags** are widely used in **coal-fired utilities, waste-to-energy incineration, cement kilns, smelting, and chemical processing plants**, where they deliver **long service life, stable pressure drop, and reduced bag changeouts** compared to conventional filter media.

Bags are supplied in **OEM-equivalent constructions**, compatible with pulse-jet, shaker, and reverse-air systems from **Donaldson®, AAF®, Parker Hannifin®, BWF® Envirotec, FLSmidth®, and other major OEMs**.

Engineered for Corrosion Resistance. Proven in Thermal Extremes.

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Technical Specifications

- **Material:** 100% PPS (Polyphenylene Sulfide / Ryton®) needlefelt, 500–600 g/m²
- **Operating Temperature:** Continuous up to 190 °C; short-term peaks up to 200–220 °C
- **Micron Ratings:** Typically 5–50 µm, application dependent
- **Finish Options:** Singed, calendered, PTFE-coated, PTFE membrane laminated, oil & water repellent
- **Construction:** Sewn with PTFE or aramid thread; double or triple stitched for strength under high-load conditions
- **Seam Style:** Standard double-needle or reinforced triple-seam for demanding applications

- **Air Permeability:** 8–12 m³/m²/min (pre-conditioning, finish dependent)
  Chemical Resistance: Excellent resistance to acids, alkalis, and hydrolysis; limited resistance to strong oxidisers
- **Hydrolysis Resistance:** High, suitable for humid and corrosive gas streams
- **Cage Compatibility:** Designed for standard round or oval cages; venturi options supported
- **Compliance:** OEM-equivalent constructions; food-contact compliant variants available (FDA 21 CFR; EU 1935/2004 & 10/2011)
- **Add-Ons:** Wear pads, anti-collapse rings, top-load guides, spark-resistant cuffs

Standard Dimensions

- **Lengths:** 1000 mm to 6000 mm (custom lengths available on request)
- **Diameter:** Standard diameters 120 mm, 125 mm, 130 mm, 150 mm, and 160 mm; other diameters available upon request
- **Top Options:** Snap band, raw cuff, corded cuff, compression cuff, flange collar, or ring top
- **Bottom Options:** Sewn disc (standard); reinforced bottoms or wear pads for abrasive environments
- **Customisation:** Sizes and constructions can be tailored to specific OEM housings and retrofit requirements

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Recommended Air-to-Cloth (A/C) Ratios[1] for DFX-PPS™

Application	Cleaning System	Recommended A/C Ratio (m/min)	System Type	Media Type	Notes
Coal-Fired Boilers	Pulse Jet	0.8 – 1.2	Baghouse	PPS Needlefelt	Excellent resistance to acidic flue gases; avoid high O_2 exposure.
Waste-to-Energy Incinerators	Pulse Jet	0.8 – 1.1	Baghouse	PPS Needlefelt	Suitable for SOx, NOx, HCl-rich gases; stable under humid conditions.
Cement Kilns & Lime Plants	Pulse Jet	0.9 – 1.2	Baghouse	PPS Needlefelt	Handles variable temperature exhaust; monitor for oxidising conditions.
Smelting & Metallurgy	Reverse Air	0.7 – 1.0	Baghouse	PPS Needlefelt	Withstands hot, corrosive particulates; extended bag life.
Chemical Processing	Pulse Jet	0.8 – 1.1	Baghouse	PPS Needlefelt	Ideal for aggressive vapours and dust with acid/alkali content.

[1] *Recommended air-to-cloth (A/C) ratios are indicative and provided as general sizing guidelines. Actual performance depends on dust characteristics, system design, cleaning method, and media condition. For high-temperature or corrosive dust environments—especially those governed by ATEX (EU Directive 2014/34/EU), NEC Class II (NFPA 652/654), or IECEx standards—ratios should be validated against certified design parameters and reviewed by qualified engineers. Please consult FiltraCore Asia's technical team for application-specific modelling and system design support.*

Pleated variants of this media are sometimes promoted but are not considered commercially reliable due to fibre and service-life limitations. FiltraCore Asia supplies only proven bag constructions in line with global OEM standards.

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