

Coralon Filters

Coralon Anti-Static Filters for Lube and Hydraulic Systems

Coralon® anti-static filters represent a significant advancement in equipment protection and are a direct replacement for Pall Ultipor® filter elements. The filters feature SRT (stress-resistant technology) media in a static charge resistant pack design for unsurpassed performance and value.

Coralon anti-static elements provide:

- Beta $\chi(c)$ > 1000 particle removal efficiency
- Greatly reduced static charge build-up
- Low element pressure drop
- Optimum performance under cyclic flow and pressure conditions
- Consistent, high performance equipment protection at all stages of filter life

Coralon Anti-Static Filter Technology

Designing filter elements has traditionally been a question of balance. Make a filter finer and more efficient and you have to sacrifice clean pressure drop and/or service life. Today, with the higher flow rates being put through filter elements, static charging/discharging has become more prevalent and can lead to significant operational problems.

Coralon anti-static filter elements provide consistent, high particle capture efficiency, low pressure drop and high dirt holding capacity coupled with the added benefit of significantly reducing static charge generation.

Filter Media Charging Measurements

Sample description	Average charge generation in turbine lube oil (currant, nA)	
	No heat exposure	After 149°C (300°F) for 1 hour
Standard glass fiber material	620 ± 100	1,200 ± 200
Surface modified standard glass fiber material	250 ± 40	490 ± 70
Coralon Anti-Static material	80 ± 20	80 ± 20



Coralon Anti-Static Filter Elements

Electrostatic Charging

- Electrostatic charging can be a problem in hydraulic and lube systems (Varnish formation)
- Grounding housings and pipes does not reduce the charge generated
- Standard glass and paper media can create electrostatic charging
- Anti-static filters substantially reduce charging and its impact on systems (noise, sparking, and component and filter damage)

Problem System	Result from Using Anti-Static Element
Power plant lube system-clicking noise	Eliminated noise and burn marks and reduced charging by ~98%
Power plant varnish formation	Maintained varnish potential levels

Specifications

Element Collapse

Pressure Rating: 10 bard (150 psid) minimum for Coreless filter elements (polymer end caps)
20 bard (300 psid) minimum for standard filter elements (metal end caps and core)

Temperature Range

Fluorocarbon: -29°C (-20°F) to +120°C (+250°F)

Nitrile: -43°C (-45°F) to +120°C (+250°F)

Note: Maximum 60°C (140°F) in water based fluids

Seals: Fluorocarbon or nitrile

Fluid Compatibility: Compatible with petroleum oils, water glycols, water-oil emulsions, and high water containing fluids.

Filter Construction: Cored filter elements - Corrosion protected end caps and core
Coreless filter elements - Polymer end caps only

Filter Element medium: Inorganic fibers impregnated and bonded with epoxy resins.

All Coralon filter elements are manufactured by Pall to exacting procedures and strict quality controls. Elements are validated to the following ISO test protocols:

- Filter Ratings:
 - Cyclic Stabilization Test (80% Δp) based on SAE ARP4205. For ISO Code ratings, see Table 1
 - $\beta_{x(c)} \geq 1000$ multi-pass filter ratings (per ISO 16889)
- Element Collapse Pressure Rating (ISO 2941)
- Fluid Compatibility (ISO 2943)
- Flow vs. Pressure Drop (ISO 3968)
- Flow Fatigue (ISO 3724)
- Fabrication Integrity (ISO 2942)

For further information on test protocols and certification, please contact Pall sales.

Measuring Filter Performance - the Cyclic Stabilization Test (based on SAE ARP4205):

Conditions such as varying flow, cold starts, shock and vibration can potentially reduce the effectiveness of a filter in an operating system.

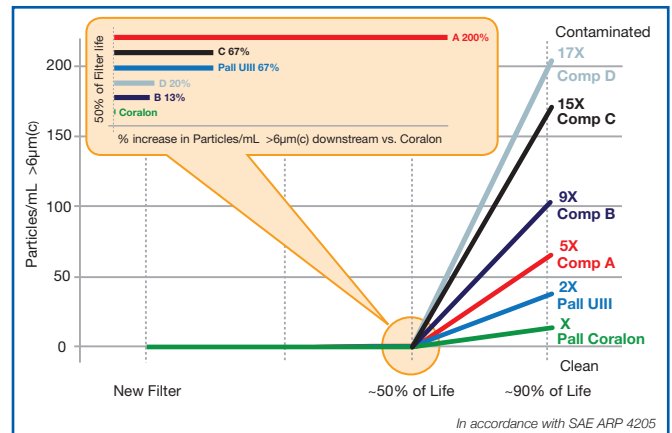
The Cyclic Stabilization Test examines the effects of cyclic flow conditions and dirt loading on the capture and retention characteristics of the filter. The result is an improved filter performance reporting method that simply tells the user via ISO Codes (see Table 1) the level of contamination control that can be maintained throughout the filter's service life.

Table 1 - Filter Performance Ratings

Coralon Filter Grade	$\beta_{x(c)} \geq 1000$ per ISO 16889	ISO Code Rating per Stress-Resistance Test (80% Δp)*
AP	5	12/09/07
AN	7	14/11/06
AS	12	15/11/06
AT	22	16/14/08

* based on 60 psid terminal pressure drop

The Coralon Filter Performance Advantage



A critical measure of a filter's performance is its ability to sustain fluid cleanliness throughout its service life.

This graph compares a Coralon 7µm(c) rated filter to an Ultipor III filter and four competitors' products with equivalent ratings.

Only Coralon filters produce sustained fluid cleanliness over the full life of the filter.



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