

Pall Corporation is upgrading its Ultipor® and Coralon® filter element technology



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CASE STUDY

Introduction

Our new Supralon™ filters represent a significant advancement in equipment protection and are a direct replacement (same form, fit, and function) for current Coralon and Ultipor III filter elements (typically part numbers prefixed with “HC”). Supralon filter elements have been designed to deliver the best performance features its predecessors plus more. We have added static charge resistance properties and increased the filter performance rating to $\text{Beta}_{x(C)}=2000$, the highest rated performance in industry today.

Having completed extensive laboratory trials to evaluate the performance of this new advanced filter, Pall undertook a significant number of field trials globally, to test the performance across a number of challenging applications.

Application

A major automotive component supplier utilises a ring main to supply fluid to 30 test rig stations for the pumps and injectors for off highway vehicles.

The ring main currently utilises Pall HC8314FCPZX321 deep pleat Coralon filter elements to control the cleanliness to ISO 4406 maximum level of 16/14/12 (Fuchs Calibration fluid to ISO 4113. 2.5 cSt @ 40 deg C).

The customer agreed to trial 3 off new Supralon HC8314FRP39Z (3 micron rated $\text{Beta}_{3(C)} \geq 2000$) replacement filter elements, to test the performance and life in this known high particulate ingress application which also sees assembly debris and grease contamination.

The ring main was chosen as the challenging application had previously experienced shorter filter element service life before being changed to a deeper pleat, 'X321' filter element design in 2016.

Field trial

The trial started April 21 under increased production conditions. The first filter element lasted 4 ½ weeks and next two, 3 and 3 ½ weeks respectively, the same filter element service life as the previously fitted X321 element life.

Results

Pall engineers returned to site to take online fluid samples using the Pall Cleanliness Monitor PCM 500 and bottle samples to verify the fluid cleanliness in the laboratory.

The cleanliness was consistently maintained below the required specification and ranged from highest (taken just after changing an element) at ISO 15/13/10, to two samples below ISO <11/<9/<7 per ISO 4406.

A blocked element was also returned to the laboratory for further analysis. It was noted that the media was fully utilised with evidence of black / bright metal, silica and grease, as expected.

In conclusion the cleanliness of the fluid and service life of the filter element was the same or slightly better than utilising the original Coralon X321 filter element, achieved with no adaptation to the existing housing or increased cost of filtration.

The customer was satisfied with the trial and has agreed all future supply to the system be with the new Pall Supralon replacement filters.

As numerous applications can now be covered by one Supralon part number, the customer is also reviewing his site to standardize supply.

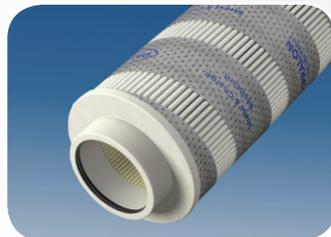
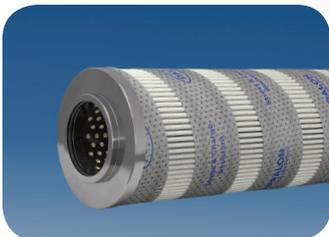
Although no evidence of ESD (electrostatic discharge) or varnish was seen in the system on this occasion, the customer has peace of mind that the ring main system is further protected by the anti-static properties additionally offered by the Supralon filter element.

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Pall Supralon: Next Generation Filter Design

- Higher Beta_{x(c)} ≥ 2000 rating for faster system cleanup and improved cleanliness levels
- CST (Cyclic stabilization test) ratings to ensure high performance consistency over the full element service life
- Asymmetric pack construction for optimized pleat stability and drainage
- High basis weight filtration medium for long service life and resistance to upset conditions
- Static charge resistance as standard across the full product offering
- Low clean pressure drop



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IF APPLICABLE Please contact Pall Corporation to verify that the product conforms to your national legislation and/or regional regulatory requirements for water and food contact use.

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