

Alderley

Technical excellence: delivered



Technical Bulletin

Cartridge Filters - Solids



Introduction

Alderley offer a range of solids cartridge filters - perfect for the filtration of produced water for re-injection purposes.

Cartridge filters

Provided in pleated or spun wound construction, filter cartridges are normally manufactured from polypropylene and are capable of filtering solids in Nominal and Absolute forms in the range 1 to 100 µm

The filter media utilised in the cartridges can be an absolute or nominal rated element and is designed to survive flow and pressure fluctuations.

Often described as *disposable polymeric filter cartridges constructed from 100% polypropylene and thermally bonded*, Alderley filter cartridges are typically supplied with a double O ring open end cap and a fin ended closed end cap for retaining purposes.

The pleated filters are constructed with a filter media and several support layers to achieve a high integrity and robust structure that has a high differential pressure resistance.

The cartridges have an internal support core and an outer guard for protection during handling.

Typical operating conditions are:

- Max Temperature: 80°C
- Max Diff Pressure: 4.0 barg
- Seal Materials: HNVR or Viton

Note: other cartridge materials and seal systems are available.

Packaged solutions

Incorporated in vertical vessels with quick opening closures for ease of cartridge replacement, Alderley packaged solutions are designed to reduce time offline as well as operator time and removes the need for torquing teams.

Vessels can be provided in Lined Carbon Steel, Stainless Steel or Duplex materials to suit the process conditions and pressure class to 2500#.

The filter cartridges in each vessel are typically mounted between two supporting plates one of which forms the seal between the inlet and outlet sides.

In application, produced water is fed into the cartridge filter through a side entry inlet nozzle. It then distributes itself freely around the inlet chamber and is channelled through the filter cartridges.

Pressure indicators are installed on the package to determine the pressure drop across the filters.

Once the cartridges become spent, the filters are removed and the spent cartridges are replaced with fresh cartridges.

Features	Benefits
Proven technology	Guaranteed performance
Good turndown capability	Copes with process variations
Efficient solids removal	Meets low level discharge targets
No moving parts	Minimal operations intervention
Small footprint	Weight / space / cost savings
Single stage process	Reduced process plant

Considerations

Solids concentration, size distribution and the velocity of the carrier (main phase) fluid can affect cartridge life.

Small quantities of oil are likely to remain present. This has the effect of forming flocculants and will change the way in which the solids will cake on the filter media.

This will encourage agglomeration of contaminants and potentially present as a larger species but may cause more rapid blinding on the surface of the filter media and may therefore reduce the life of the filter cartridges.

These factors are considered in the design and sizing of every Alderley filter cartridge.

