

THE CLARIFIER

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API/IP 1581 5th Edition Testing

Velcon Filters, Inc. has tested and qualified a comprehensive range of products to meet the latest API/IP-1581 5th Edition Specification. The new categories for the new specification are:

Category C

This category replaces the previous class A, B, & C of API/IP-1581 Third Edition. Velcon's new coalescer cartridges that meet Category C requirements are our

I-6xxC5 Series (the xx denotes nominal cartridge length). These new cartridges have been developed to provide better water removal performance of surfactant-laden fuels, and improved filtration efficiency combined with longer life. Category 'C' cartridges can be used at any point in the fuel distribution system – from refineries to into-plane fueling.

Velcon's Teflon Separator Cartridges for Category C vertical vessels are **SO-6xxV5**, **SO-6xxPV5**, and **SO-6xxVA5**. For horizontal vessels our previously qualified Teflon Separator Cartridges **SO-6xxV**, **SO-6xxC**, and **SO-6xxVA** would be used.

Category M

This is a brand new specification for military fuels, like JP8 (similar to Jet A but containing anti-icing additives). Velcon's coalescer products for this



Velcon's new 5th Edition-qualified coalescer, I-614C5TB

series are our **I-6xxMM** cartridges. The separators for this category are our **SO-6xxC**.

Category M100

This specification is for military fuels like JP8, but it also includes a surfactant additive called +100. The '+100' allows fuels to run at higher operating temperatures and reduces maintenance for high performance military jet engines. Velcon's coalescer cartridges for the M100 Category are our **I-6xxA4** Series. The Teflon Separators for M100 are currently our **SO-6xxCM** and **SO-6xxGS** (three-stage).

New to the 5th Edition is a specification that allows operators to incorporate a third stage water absorbing cartridge with each category. Velcon has currently qualified our CDF-2xxK Series monitor cartridges for Category M100.

Also new is the description of filter/separators as "Type S" & "Type S-LD." (S= Significant levels of water & dirt, LD for low dirt.) All of Velcon's qualified products are Type S, which also qualifies them to Type S-LD, as specified in Paragraph 2.4.2. See also 2.3.1 - 2.3.3.

The API/IP-1581 5th Edition incorporates new rules for similarity calculations, and these are detailed in API/IP-1582 Feb. 2001. The major ones are:

1. Maximum flow rate that a vessel can be qualified to is 2500 GPM (~ 9,500 lpm)
2. A vessel can only be qualified by similarity if the flow rate is equal to or less than the tested flow rate.
3. Category M cartridges/vessel combinations can be qualified by similarity to Categories M and C only.
4. Category M100 cartridges/vessel combinations can be qualified by similarity to Categories M100 and M only.
5. Filters already installed may be qualified (see Paragraph 4.4.1.2 of API/IP-1581 5th Edition) by meeting similarity criteria (as defined in API/IP-1582) for flow rates above 2500 GPM (9,500 lpm) and up to 5000 GPM (19,000 lpm).

It should also be noted that we can continue to supply cartridges qualified to API/IP-1581 3rd Edition for those applications where there is not a qualified API/IP-1581 5th Edition product.

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API/IP 1581 5th Edition Qualifications Continue

API/IP 1581 5th Edition Monogram Program, Part 3 – Full Scale Test Report **Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators**

In early June, 2003, at Velcon Filters' Test Lab in Colorado, several people witnessed Velcon's qualification test of vertical vessel, VV2752B, with 7 x I-644C5TB coalescers and 3 x SO-644V5 separators. The flow rate for this Category C, New Equipment Qualification is 900 GPM. Also the horizontal vessel, HV2856M qualified with 7 x I-656C5TB coalescers and 2 x SO-648V separators, at a flow rate of 1312 GPM for Category C, Existing Equipment.

On July 23 - 24, 2003, Velcon passed another API/IP 1581 5th Edition Full Scale Test for the Monogram Program. For Category C, New Equipment, at 1000 GPM, HV2856 horizontal vessel was qualified with 7 x I-656C5TB coalescers and 2 x SO-648CM separators.

Clay Vessels and Cartridge Changeout Procedures

We have had several questions recently concerning clay vessel operation and cartridge changeout. Velcon recommends the following procedures. This information is also available on our web site - go to the "Library" page, then click on "Vessel Manuals" and then "Clay Vessel Manual". See page 8 of the manual.

CARTRIDGE CHANGE REQUIREMENTS.

Clay Cartridges should be changed whenever one of the following events occur:

- A. Differential pressure exceeds 15 psid.
- B. Effluent quality checks indicate the clay is spent and is no longer removing surfactant materials.
(e.g. Unsatisfactory filter membrane color, MSEP, or IFT Readings)
- C. After one year of operation.

CARTRIDGE CHANGE OR INSPECTION PROCEDURE.

- A. Shut off the pump.
- B. Close the inlet and outlet pipe valves.
- C. Open drain valves and remove product from the Clay Vessel.
- D. Open the manual air eliminator valve. This will permit the unit to drain faster.
- E. Open cover and inspect cover gasket. Replace gasket if it is damaged.
- F. Remove spent cartridges.
- G. Wipe off or wash down any foreign matter from the vessel interior.
- H. Install elements in accordance with installation instructions PN 09-843, Form 1046.

Check cover gasket for alignment, replace cover and secure tightly. The Clay Vessel is now ready for the start-up procedure.



Installing clay cartridges

Monitor Cartridges Service Life

Along with API/IP and all filter manufacturers, Velcon Filters is continuing to investigate the performance of two-inch water absorbing monitors. Please check our web site, www.velcon.com, on the "What's New" page, for the latest information on this important issue.

Please also see the following web site for the most recent API/IP statement concerning this issue: www.petroleum.co.uk. Then click on left side "Publications", then "Publications Database". On that page enter "1583" and click "Submit Query" at bottom. The API/IP statement begins in the middle of the page, "14 May 2003".

Frequently Asked Questions & Answers

Q What is the shelf life of a filter cartridge?

A First of all, it is extremely important that all cartridges are kept in their original packing and kept stored in a dry environment and away from the sun. Avoid extreme temperatures and moisture. Also ensure that cartridges are used in rotation. Most cartridges if stored correctly should be suitable for use up to five years. It's always wise to check gaskets, examine the seams and end cap adhesive.

Paper separator cartridges should receive careful attention and should be placed in service within one year of receipt. Some operators will permit paper separators being used up to two years in storage, but only if the cartridges have been carefully checked for dryness, brittleness and tears in the paper.

Clarifier Notice

Velcon Filters is concerned about the environment, and about the use of paper products. However we are also aware that many of our readers do not have access to a computer and are using the technical information provided in our newsletters "in the field." Therefore, we would like to offer to everyone on our mailing list the option of either continuing to receive the Clarifier via hard copy or receiving an email message simply stating that our latest newsletter has posted to our web site, which you will then be able to download if desired. If we do not hear from you we will continue to send the hard copy. If you would prefer not to receive hard copy, but to be alerted by email instead, please send us an email stating so to vfsales@velcon.com. Be sure to include your name and address so that we can update our database appropriately.

Coalescing Plate Separator

Velcon Filters is pleased to introduce a specially designed Oil/Solids/Water Separator to the industrial wastewater market. The new coalescing plate separator may be the most economical and practical



method of treatment, or pre-treatment, to remove oils and solids from contaminated wastewater. Applications for these small separators exist in virtually every industry where contaminated water occurs.

The customer benefits from the installation of a Velcon Separator package in several ways:

- ◆ Contributing to reducing pollution of our environment.
- ◆ Being assured of meeting the local authority's guidelines and limits for discharges at all times.
- ◆ Minimum maintenance and service requirements.
- ◆ Integrity, technical back-up and advice of Velcon Filters, proven in the filtration industry for 50 years.
- ◆ Replacement parts or upgrades available, directly or through a proven network of authorized and trained representatives.
- ◆ Upgrade existing API pits
- ◆ No replacement parts, cartridges, filter bags, screens.
- ◆ Exhaustive trials and tests at Velcon's Jet Fuel Testing facilities.

Contact Velcon Filters, Inc. at 800-531-0180 or vfsales@velcon.com for further details.

Velcon Service Awards

Several of Velcon's employees have recently or will soon earn their service awards:

30 Years of Service ~

Mike Gish

25 Years ~

Pablo Delgado (Texas)

20 Years ~

Walker McEwen (Alabama)

5 Years ~

Scott Harshman

Linda Oppelt

Simon Reyes (Texas)

Upcoming Exhibitions

• Velcon Filters will be
• exhibiting with Warner
• Lewis Jr. Industrie in
• Munich Germany at the
• Inter Airport European show
• in October. We will be in
• the Booth A30 in Hall 4.
• Stop by and say hello.



Munich Airport, Germany
7-8-9-10 October 2003

Velcon will also have a booth at the Petro 2003 Conference & Exhibition in San Antonio, Booth # 210. Check our website for more details.



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