

NO. 9 FURTHER EXPLANTIONS - API/IP 5TH Edition MARCH, 1976

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It was 28 years ago that we published GamGrams No. 8 and 9 to explain API-1581 Third Edition qualification and approval requirements. Those GamGrams should be removed from your files and destroyed because the 5th Edition of API/IP-1581 was published in July 2002 changing all of the rules for qualification. We delayed writing new GamGrams to replace those that were obsolete until now because none of the manufacturers were offering replacement elements that complied with the new specifications. They were supposed to have done so by July 2003, but that did not happen. GamGram No. 8 explains the new requirements for filter separator performance

The manufacturers have been running tests to qualify newly designed vessels as well as replacement elements for vessels already in service. The original schedule was that the 5th Edition would go into effect one year after publication but the industry was simply not ready. At the time of this writing each manufacturer has qualified elements for some applications but none have offered elements to cover a complete range of vessels now in service. We believe that the manufacturers will go into production by the fall of 2004 with elements to replace 3rd Edition. Some 5th Edition vessels are currently being produced but complete lists of new vessels will take much more time to design, develop and test for qualification.

Now that we have covered the details of the new specification, we have to face the problem of applying the 5th Edition to new installations as well as to existing facilities and refueling equipment.

New Filter Separator Vessels

1. Ask your prospective filter supplier for a copy of the test report for the type of vessel you are considering. Look at the first few pages to see who witnessed the tests. The test report must identify an API inspector. If it does not, contact another supplier.
2. Ask the prospective supplier to show evidence that he has joined the API Monogram Equipment Licensing Program. If he is not in the Monogram Program he can legally show that he has passed the tests but he is not permitted to label the elements or the vessel with the API monogram.
3. Look for the Category of the test (C, M or M100) to insure that it applies to the type of service you need.

Replacement Elements for Existing Vessels

The same 3 steps as for New Vessels applies here but you must also ask for the similarity calculations that prove that the desired flow rate (in the existing vessel) for the Category of your service is covered by the test results. We caution you that this step is very complex so you will need consultation with a person who is familiar with the Similarity Standard, API-1582. In fact you may be required to make a detailed drawing of the internal pattern of the element installation of your vessel if your supplier does not have the data for that model.

Keep this fact in mind:

A new filter separator for a mobile installation will necessarily be larger than one that was qualified to the old specification. This is true because the 5th Edition does not allow a higher flow rate per inch of coalescer length for mobile equipment than for stationary installations.

Understanding Type S and Type S-LD

A complication, *in our humble opinion*, was created by the specification writers when they added "Type S" as a further description of the Categories. Refer to the chart on GamGram No. 8. The LD designation means that the coalescers are required to hold a smaller amount of particulate (dirt) than the (S) standard amount that was defined for Category M for example. Therefore, an LD coalescer is somewhat less expensive than a "S" standard Category M element. Our point is that "S" causes confusion. However, an LD designated element can save you money, especially if you use a pre-filter which necessarily has a vastly greater dirt holding capacity than a coalescer - and at a much lower cost.

The point made in the above paragraph is really important from the standpoint of saving filtration expenses. It has never ceased to amaze us that more filter users do not take advantage of pre-filters.

Consider this:

You have a 600 gpm filter separator that receives dirt contaminated fuel from time to time, causing the differential pressure to increase to the 15 psi limit.

The cost for the coalescers is approximately \$750.00

If you install a pre-filter to handle the same 600 gpm flow rate, the replacement set of elements costs about \$240.00.

You will now say happily that this is only 1/3 the cost of coalescers but you are absolutely wrong.

Prefilters have far greater dirt holding capacity than coalescers and our experience is that they hold about 3 times more dirt.

Therefore, the real cost difference, in this case, is a factor of 9. That is one-ninth the cost of operating with coalescers only.

If you are changing coalescers frequently, it should be obvious that you cannot afford to operate without a prefilter if you now need to change coalescers frequently.

The last item on our list of 5th Edition subjects is "API APPROVAL". The original title of GamGram No. 8 was, "Who Ever Heard of API Approval?" In those days, API did not "approve" filter separators or their elements. A filter manufacturer performed the tests that were defined in API-1581 when qualified industry representatives could witness the tests. However, API had no inspectors and no functions.

With the 5th Edition, that has all changed because filter separators, monitors and pre filters now come under the API Monogram Program. Witnesses are certified by API to observe the manufacturing and be present for the laboratory tests. The API Inspector must sign the test report. The manufacturer can then advertize his products as being API approved and can apply the monogram (logo) to each item, filter vessel or element. Therefore, under the 5th Edition, the customer will be able see the API designation that proves to any interested party that he has purchased API approved equipment.