

Wear Index Ratings Show Fleetguard FF5319 is Equivalent to Caterpillar 1R-0749

Cummins Filtration is at the forefront of technological innovation in product development and testing. Over the years, we have been an active member of a co-op led by Southwest Research Institute (SWRI) to develop an innovative approach to evaluating fuel filter performance, the "wear index." Because of our close involvement in the development of this technique, we understand its strengths and weaknesses better than anyone in the industry.

What is the "Wear Index Test"?

The Wear Index Test is a means of relating filter performance to filter efficiency measured in 5, 10, and 15 micron particles. In general, lower wear index numbers mean better fuel system protection within the variability of the technique.

The Wear Index Test is a two-hour test measured every five minutes over the course of the testing. At the end of the test, the final wear index number is obtained by averaging the 25 readings taken in the two-hour test period. The results for a filter with a wear index of 0.024 show that the wear index readings vary between 0.9 and 0.008 during the course of the two-hour measurement period.

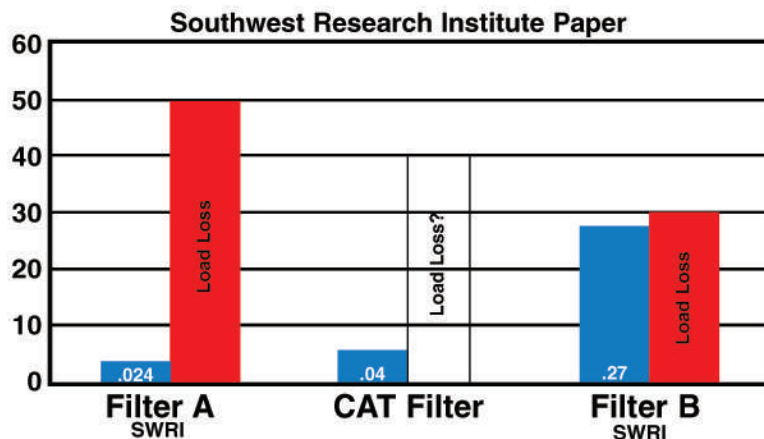
Recent engine test data reported by Caterpillar unfortunately did not take into account one of the major weaknesses of the wear index technique. The wear index technique is not sensitive enough to predict how filters with very similar efficiencies will protect injectors from wear (push tube load loss). The 0.04 rating that Caterpillar reports for their product correlates to the SAME filter performance as the 0.08 rating they report for Fleetguard's product.

Caterpillar Misinformation

In their "Engine Maintenance Tips" publication, Caterpillar shows their 1R-0749 filter as having a wear index rating of 0.04, and Fleetguard's FF5319 as having a wear index rating of 0.08. They state that "a higher number indicates more wear and damage to fuel system components." They state further that "the Fleetguard FF5319 may cause fuel injector life to be reduced by up to 50%." This conclusion is a totally false and misleading statement with no valid data to support it. In fact, given the variability of the wear index test method, 0.04 and 0.08 wear index ratings indicate identical fuel system protection!

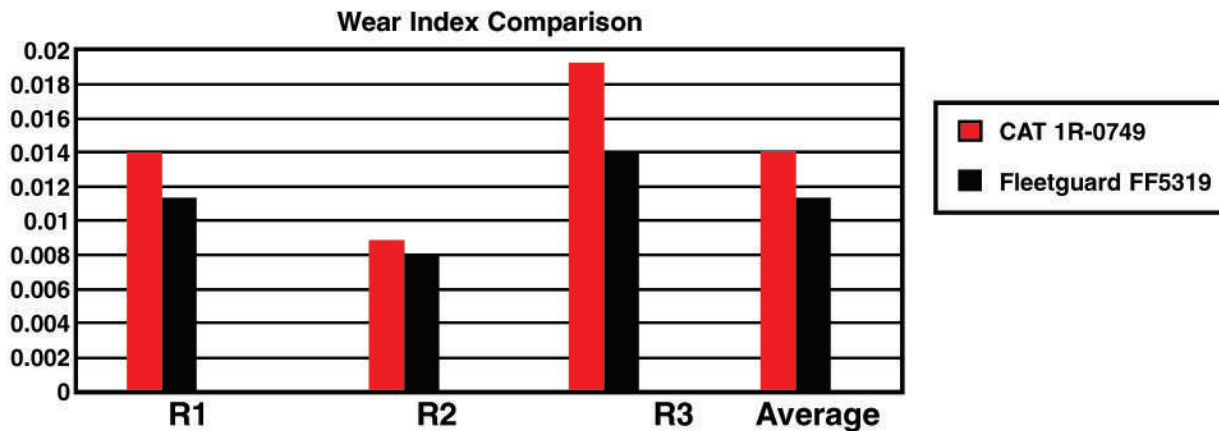
Push tube load loss is an indication of injector wear (the greater the load loss, the more injector wear).

In a paper published by SWRI (one of the primary developers of the Wear Index Test Method), Filter A has a lower wear index rating than Filter B, yet Filter A has a higher load loss rating. This shows that there is no predictable relationship between very small wear index numbers and load loss (wear). It is possible that the CAT Filter with a published wear index of 0.04 could have a higher push tube load loss than both Filter A and Filter B, given the unpredictable relationship between index rating and push tube load loss when comparing small index numbers that fall within the variability of the test (as do the CAT and Fleetguard numbers).



Independent Lab Results

To further illustrate our point, we submitted three randomly selected Fleetguard FF5319 filters and three randomly selected CAT 1R-0749 filters to SWRI for wear index testing. The results are illustrated in the following chart:



As is apparent, the Fleetguard filters have consistently lower wear index readings than the Caterpillar filters. The official report from SWRI states "Based on the above data, these fuel filters are equivalent in removing abrasive particulate."

Bottom Line Conclusions:

1. While 0.04 may be half as much as 0.08, in terms of how wear index relates to actual fuel system protection in the field, they mean the same thing.
2. The equivalence of wear ratings of 0.04 and 0.08 is supported by SWRI, one of the primary developers of the technique.
3. Asserting that a fuel system protected by a filter with a wear index of 0.04 will last twice as long as one protected by a filter with a wear index of 0.08 is **totally inaccurate** and **misleading**.
4. **You cannot differentiate between the two filters!**

