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THINK TWICE BEFORE WET OR DRY CLEANING YOUR DUST COLLECTOR FILTERS

By Debbie Olson, Donaldson Torit Product Manager

Paying to have a premium dust collector filter wet or dry cleaned may seem like a bargain. But is it really?

Let's take a look.

The cost to have a filter cleaned is quite a bit less than the cost of buying a new filter, but the savings are quickly lost when you consider the resulting shorter filter life and lower efficiency caused by the cleaning.

Typically, cleaned filters tend to last approximately half as long as new filters before they plug again. As a consequence, cleaned filters need to be replaced more frequently, and that means more change outs, more downtime and more cleaning charges.

Scanning Electron Microscope (SEM) images below (see Figure 1) show the true difference between new premium efficiency media and media after it has been wet cleaned or dry cleaned.

As you can see, the cleaned filter media still has particles clinging to it. Independent laboratory tests* comparing new filter media to cleaned filter media revealed the following:

- Cleaning leads to weakening of the filter media, resulting in reduced tensile strength, shorter life, and potential structural failure.
- Cleaning often leads to damage of the media pores, resulting in greater depth-loading and reduced filter life.
- Cleaning causes a degradation of the nanofibre surface layer, resulting in reduced efficiency at the sub micron level - up to 18% reduction at 0.8 microns.
- Cleaning offers only a partial recovery in overall filter capacity (dust holding ability) reaching only about 47%. In the filter elements tested, over one half of the filter's life is already used up.
- Wet cleaning processes can remove the flame retardant treatment in filters that were treated to be flame retardant
- More aggressive cleaning processes can create weak spots or even generate holes in the media.

From a dollars and cents standpoint, take a look how cleaned filters stack up against new filters.

Using New Filters Only	Cost
Cost of 16 New Filters	$2,200
Change out Cost	$300
Freight - One Way	$150
Annual Total	**$2,650**

Using New Filters Only	Cost
Cost of 16 New Filters	$720
Change out Cost	$400
Freight - Round Trip	$300
Cost to Clean 16 Filters	$720
Change out Cost	$400
Freight - Round Trip	$300
Annual Total	**$2,840**

Data based on replacement of 16 Ultra-Web® cartridges and assumes cleaned filters achieve half the life of new filters.

By the end of the year, this average scenario shows it is actually more expensive to use cleaned filters than new filters. Why spend more money just to compromise the integrity of your dust collection system?

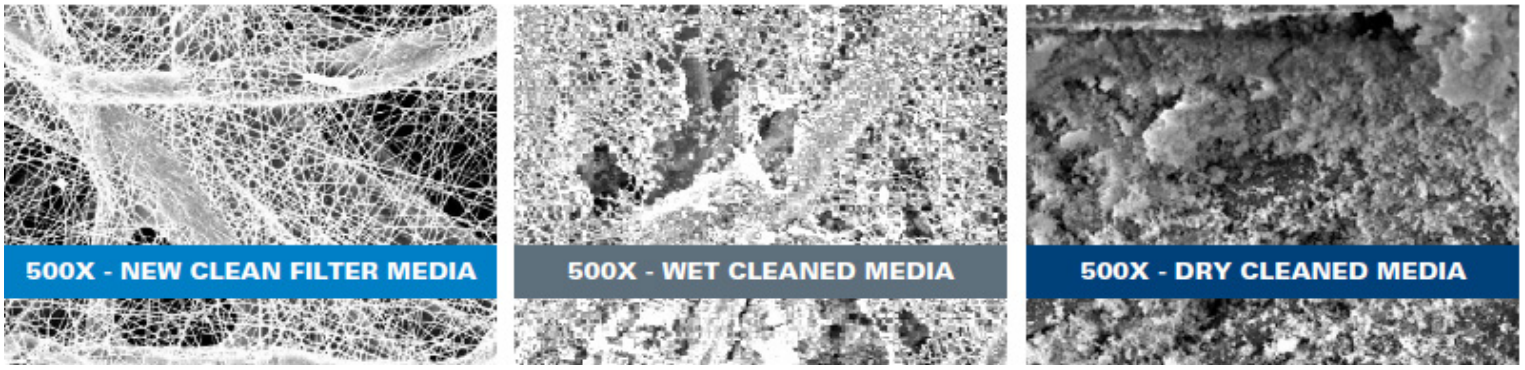


Figure 1 - SEM image comparisons of New Clean Filter Media, Wet Cleaned Filter Media and Dry Cleaned Filter Media

Plus, keep in mind these other factors regarding filter cleaning:

- Turnaround time for cleaning can be as much as two or three weeks.
- A spare set of filters and packaging need to be available for use while filters are out being cleaned
- The shipping and handling of filters being sent out to be cleaned increases the potential for damage to the filters in transit. Experience suggests a 10-15% damage rate in this scenario.
- Cross contamination of filters can occur while being cleaned.
- How do you track your filters to ensure you don't receive another customer's cleaned filter, contaminated with his operation's particulate?
- Contaminants may migrate to the clean side of the filter during cleaning.This can lead to the introduction of the contaminant into the plant environment after reinstallation.
- Dry cleaning companies reserve the right to replace damaged or uncleanable filters with new standard grade filters at the customer's expense. They may replace premium efficiency filters with non-premium products.
- Mixing cleaned and new filters in a collector negatively affects the overall loading and efficiency and will reduce the filter life of the new filters.

Here's what we see with the naked eye:

New Clean Filter

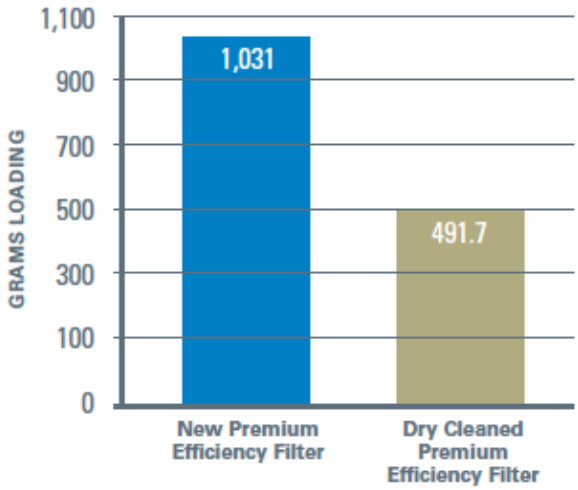
Wet Cleaned Filter

Dry Cleaned Filter

One of the most dramatic differences between a new filter and a dry cleaned filter is charted below:

LOSS OF CAPACITY

Premium Efficiency New Filter
vs. Dry Cleaned Premium Efficiency Filter



This test data clearly shows dry cleaned filter lose almost 53% of their original dust loading capacity. In other words, cleaned filters provide less than half the filter life performance of new, clean, premium performance filters.

So our word to the wise is to think twice before cleaning your dust collector filters. What might appear to be a good deal often is not.

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