

3.1.2 Pulse-Jet Fabric Filter Advantages

Pulse-jet fabric filters have many advantages in comparison to other particulate matter control technologies:

- Brief cleaning pulse: The flow of flue gas through the bag does not have to be stopped during cleaning because the cleaning pulse is very brief, 0.03 to 0.1 seconds in duration.
- Constant pressure-drop: As some of the bags are being cleaned in the system the remaining bags take on the extra demand. This, along with greater frequency of pulse-jet cleaning, results in a nearly constant pressure drop across the system during operation.
- No isolation needed: Unlike other fabric filters, they do not need extra compartments to maintain necessary filtration because this method does not require isolated compartments of bags.
- Allows for higher gas flow rates and higher dust loadings: Since the pulse-jet cleaning is a very intense and frequent method, these fabric filters can treat higher gas flow rates and higher dust loadings than other fabric filters.
- Allows for smaller fabric filters: Since the pulse-jet cleaning method allows for higher gas flow rates and higher dust loadings, combined with dust cake buildup not being needed for efficient removal – the fabric filters can be smaller than other types of fabric filters in the treatment of the same amount of dust and gas, making higher air-to-cloth ratios possible.
- Uninhibited by gas stream fluctuations: These fabric filters are relatively insensitive to fluctuations in the flue gas stream conditions, so that efficiency and pressure drop are relatively unaffected by these fluctuations.
- Simple operation: Process is based on simple filtration, allowing for a simple operation.
- Simple maintenance: They do not require the use of high voltage, like ESPs do, which allows for simpler maintenance activities.
- Low and high resistivity collection: Fabric filters are effective at collecting particulate matter with either low or high resistivity, while ESPs have a difficult time collecting high resistivity ash.
- Flexible installation: There are many options for fabric filter configurations, allowing it to work for almost any plant set-up.

3.1.3 Pulse-Jet Fabric Filter Disadvantages

There are also various disadvantages to implementing pulse-jet fabric filters as the particulate matter removal technology: