

CASE STUDY



CLEANABLE STAINLESS VS STRING WOUND FILTER

OBJECTIVE

Review the total cost of filtration between a stainless-steel filter element and a string-wound filter cartridge when used in the same application.

EXISTING

The customer was concerned with the ongoing replacement cost of disposable, string-wound filter cartridges and wanted to explore a cleanable, stainless steel filter alternative.

THE PLAN

1

Analyze the Application

Within the customer's process, they anticipate approximately 400 grams of contaminant per batch. Currently, two sets of filters in a 3-round x 20-inch filter housing, or (12) 10-inch equivalents.

2

Determine the Requirements

Fluid: Chemistry with water-like viscosity

Contaminant: Unreacted solids, similar properties to sand

Flow Rate: 15 GPM (2.5 gpm / 10" equivalent)

Particle Retention: 5-micron, Nominal

Terminal DP: 35 psid



3

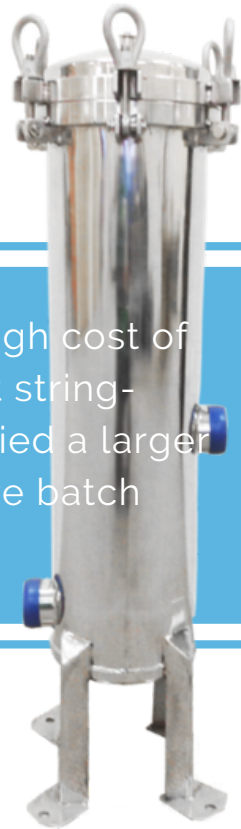
Select the Proper Filter Media

	5 um SS, 20"	5 um SWF, 20"
Contaminant Holding Capacity	8 grams	70 grams
Number of 20" Filters Required	400 g / 8 gpc = 50	400 g / 70 gpc = ~6
Cartridge Cost (C/C)	\$650/20"	\$15.00/20"
C/C per batch	\$650 x 3 = \$1950*	\$15.00 x 6 = \$90.00

4

Review the Results

Not only are the cleanable filters significantly more expensive per piece, but they would also require cleaning approximately 16 times (50 filters / 3 filters per housing) during the batch compared to only twice for string wound filters. This would also incur additional labor costs and stop the flow of product each time the filters need to be cleaned.



CONCLUSION

Considering the cost of maintenance and down time in addition to the high cost of the filters themselves, our recommendation was to stay with the current string-wound filter cartridge format. To improve the process further, we supplied a larger 7-round x 20" filter housing to provide enough filter area to last the entire batch without needing to change filters.

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