

High surface area ('Winged') fibers and their impact on energy cost of filtration

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Using the bicomponent spunbond process, we produced high surface area, shaped fibers. Their convoluted cross section provides increased dust holding capacity with a lower impact on the pressure drop increase over time.

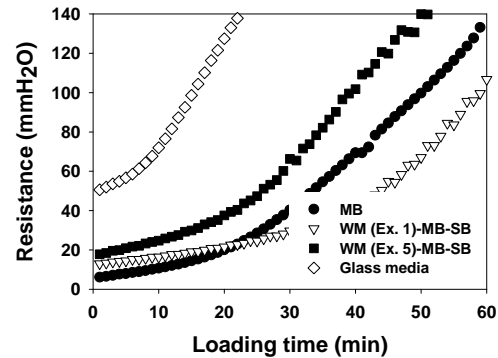
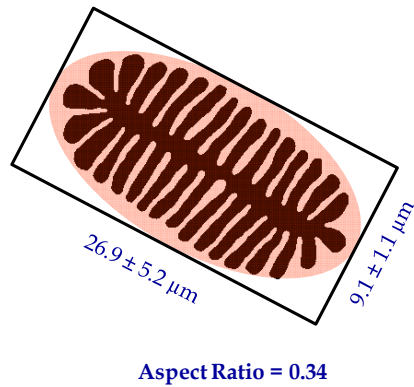


Figure 1. Typical shape of PP winged fiber and its resistance with NaCl loading.

This slower build-up of the pressure drop allows significant energy savings over time, as well as increased filter lifetime. The winged fiber media by itself has a filtration efficiency of 91-93% for a pressure drop range of 4 to 5 mm H₂O. When combined with a meltblown layer (as in the chart of figure 1), the resulting filter reaches HEPA standards with a pressure drop of about 9 mm H₂O.