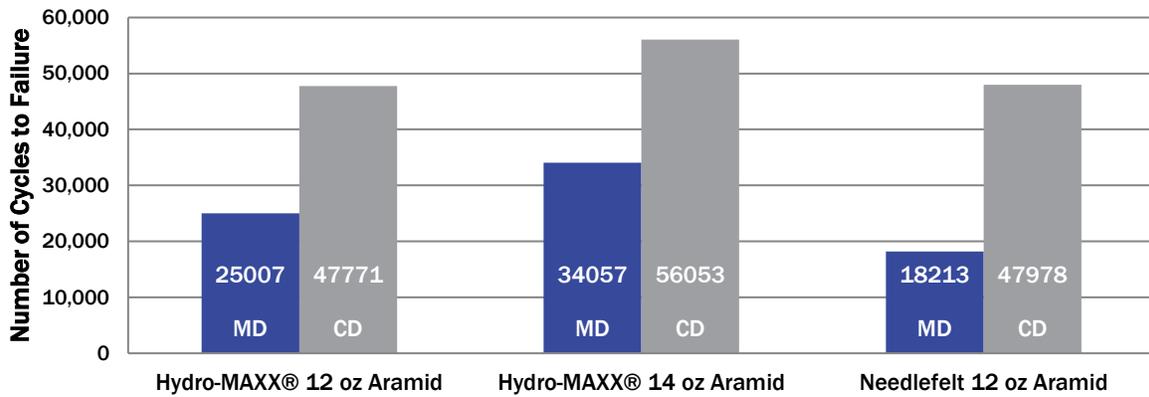


**Hydro-Maxx® Durability**

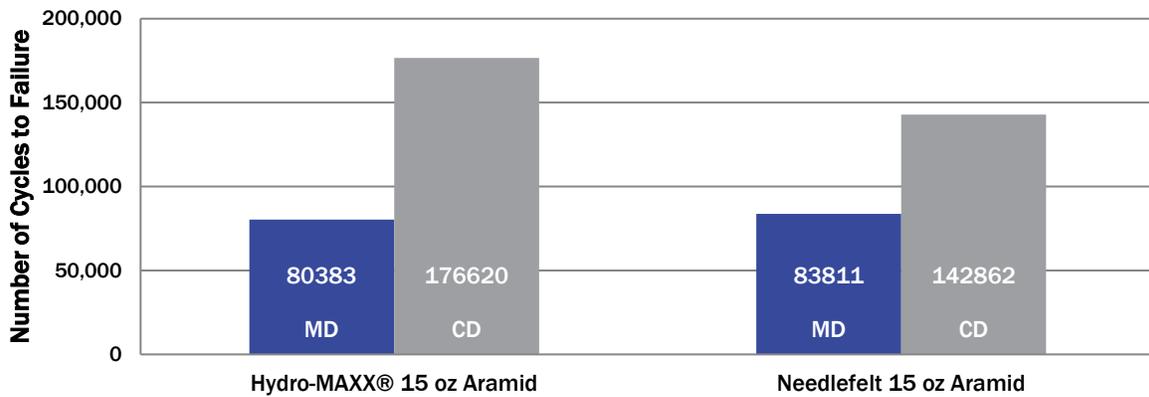
A revolutionary fabric technology delivering improved performance for the industry

For many years, the industrial filtration industry has used needlefelt in filter bags as part of the air pollution control process. Recently, National Filter Media has introduced Hydro-Maxx® and Hydro-Maxx® HCE as new alternatives to traditional needlefelt filter media which provide users and OEMs dramatically improved filtration performance, which is documented separately. A vital aspect of the fabric filter performance is the durability of the fabric over time. Users and OEMs need filter bags which can withstand the mechanical fatigue associated with the frequent pulse cleaning cycles. This durability performance was studied by ETS, Inc., a third-party testing lab for the filtration industry, with a standard test method known as MIT Flex Test (ASTM D2176) comparing Hydro-Maxx® to needlefelt.

**MIT Flex Test Results from ETSI**  
ASTM 02176



**MIT Flex Test Results from ETSI**  
ASTM 02176



## Hydro-Maxx® Durability

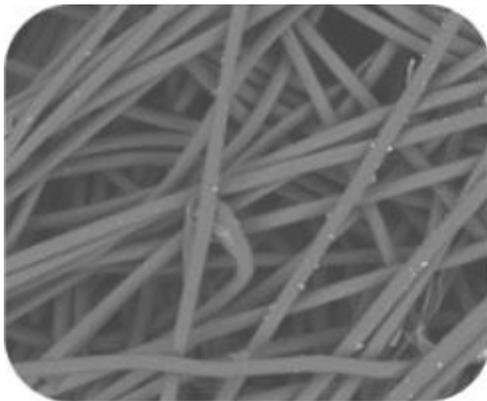
A revolutionary fabric technology delivering improved performance for the industry

This ASTM standard test method uses samples of the fabric cut in both the machine direction (MD) and cross direction (CD) and is setup to cycle the fabric flexing repeatedly, simulating the mechanical fatigue initiated by the cleaning cycle. The test records the total number of cycles to failure. All fabrics tested were fiber supported (no scrim), and three replicates were used for each of the fabrics.

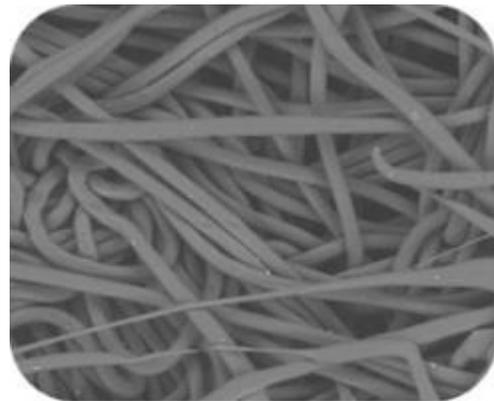
The aramid Hydro-Maxx® in 12 oz/yd<sup>2</sup> and 14 oz/yd<sup>2</sup> was tested along with a 14 oz/yd<sup>2</sup> aramid needlefelt fabric. The superior toughness of the Hydro-Maxx® felt can be observed with these results. At equal basis weights (14 oz/yd<sup>2</sup>), the aramid Hydro-Maxx® lasted 36% longer than the needlefelt when considering both MD and CD cycles to failure data. Likewise, the 12 oz/yd<sup>2</sup> aramid Hydro-Maxx® lasted 10% longer than the 14 oz/yd<sup>2</sup> needlefelt. Based on the superior filtration efficiency performance of Hydro-Maxx® versus needlefelt coupled with this durability performance, lighter weight Hydro-Maxx® options could be considered.

In the same testing with polyester felt, the Hydro-Maxx® felt demonstrates substantial improvement over needlefelt, showing that 15 oz/yd<sup>2</sup> polyester Hydro-Maxx® lasted 13% longer than the 16 oz/yd<sup>2</sup> polyester needlefelt.

The textile technology which enables this durability performance is due to the high-pressure hydro-entangling that the Hydro-Maxx® process is built around. With a higher degree of entanglement, more fiber to fiber intersections leads to stronger and more durable felt. The increased fiber entanglement can be observed by SEM images shown.



**Needlefelt 150X Magnification**



**Hydro-Maxx® 150X Magnification**

National Media Filter is happy to discuss how Hydro-Maxx® could bring value in your application. Please contact us at to discuss how to work with your preferred filter bag supplier to execute a bag test in your application.