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Introducing Hydrolox® Technology from Bondex

Revolutionary filtration media specifically designed for industrial dust collection
and other filtration applications

Bondex is proud to introduce a new technology to the industrial dust collection market, produced from a unique process technology which delivers superior filtration performance versus incumbent materials. Historically, various fiber types are formed into various weights of filtration media through a traditional needle loom which has met market needs with a specific balance of properties. However, today's utilities and industrial users are demanding higher performance filtration; filters which deliver improved collection efficiency with lower operating costs in a robust filtration system.
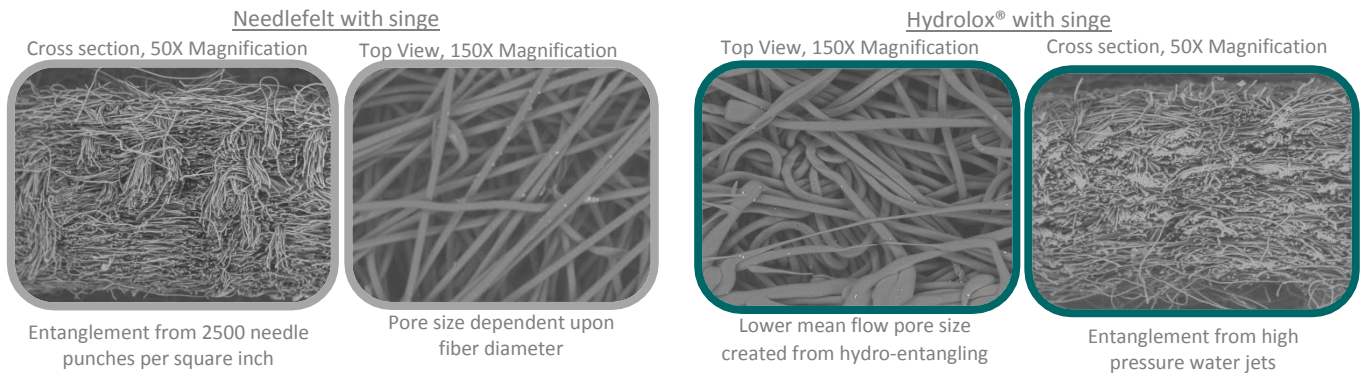
Hydrolox® filter media, available only from Bondex, combines the benefits of needle loom fiber entangling with revolutionary hydro-entangling technology to deliver industry leading dust collection performance. The phenomena of entangling fibers with high pressure water jets creates a unique balance of lower mean pore size in a mass-efficient structure. Hydrolox® represents a new paradigm in filtration media by delivering a product with dramatically improved filtration efficiency, an inherent ability to promote surface dust collection, lower pressure drop over time, and reduction in pulse cycle times.

Filtration Performance

Filtration performance characteristics are best demonstrated through the VDI test, a test apparatus specifically designed to characterize filter media performance in a bag house application. Using the VDI test to compare a typical 16 oz/yd^2 Needlefelt from the market with a lighter weight 14 oz/yd^2 Hydrolox® filtration felt, the results show dramatic improvement in filtration performance as measured by clean gas concentration (mg/m^3).

**Filtration Performance Results from VDI Test**
VDI Test Per ASTM D6830-02
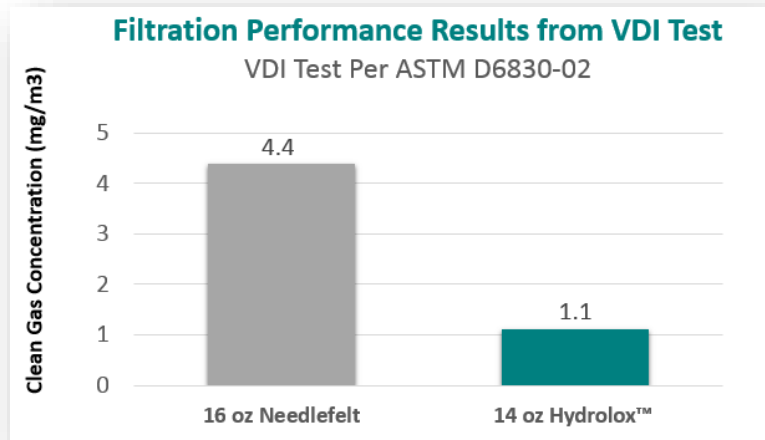
Fundamental gains in filtration efficiency is a result of fiber entangling technology. The impact of hydro-entangling results in lower mean flow pore size and improved consistency versus traditional needlefelt. The improved fiber entangling can be observed through comparison of SEM images, as shown below.

Needlefelt with singe

Cross section, 50X Magnification

Entanglement from 2500 needle punches per square inch

Top View, 150X Magnification

Pore size dependent upon fiber diameter

Hydrolox® with singe

Top View, 150X Magnification

Lower mean flow pore size created from hydro-entangling

Cross section, 50X Magnification

Entanglement from high pressure water jets

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Surface Dust Collection

Technically savvy end-users know that filter media which promote surface dust collection deliver improved bag house performance through more effective cleaning from bag pulses. Additionally, in applications where gas stream reagents and sorbents are used, surface dust collection helps create a platform where the chemistry can be allowed to perform most effectively.   The images below were taken after execution of the VDI test, where standardized test dust becomes imbedded in the needle felt, resisting the effect of the bag pulses.
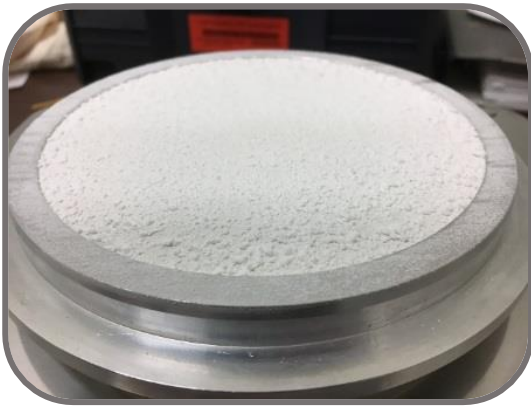
18 oz/yd^2 Traditional needlefelt
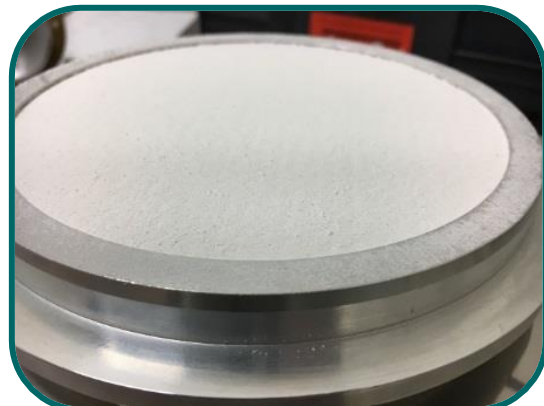
18 oz/yd^2 Hydrolox® Filtration Felt

Clean-ability

The Hydrolox® media promotes surface dust collection in a way that responds more effectively to bag pulses, leaving the surface much cleaner and ready to perform during the next cycle. VDI data from a series of tests is characterized with the model shown at the right. When comparing pressure drop performance over time of membrane, needlefelt and Hydrolox® media, the Hydrolox® media demonstrates improved ΔP over time delivering lower operating costs to users.

Pressure Drop Performance Model Observed from VDI Testing

Pressure Drop

Felt with Membrane

Needlefelt

Hydrolox®

Time
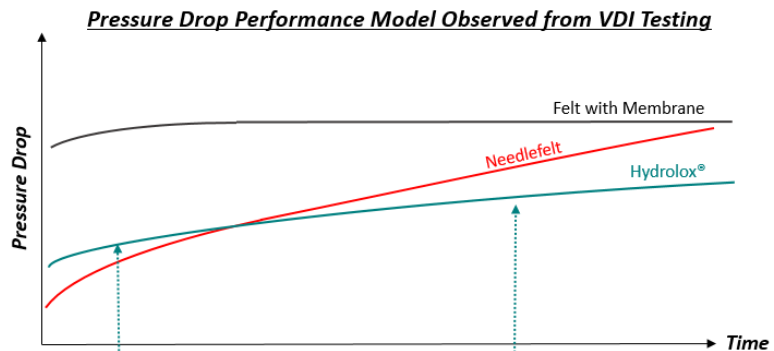
Hydrolox® demonstrates higher ΔP than needlefelt initially due to lower mean pore size, but ΔP always lower than membrane

Hydrolox® surface collection phenomena delivers improved bag house performance through more effective cleaning from bag pulses, delivering lower ΔP over time than membrane and needlefelt

Hydrolox® is available in all fiber types commonly used in needlefelt including PPS, PET and Aramid.

Contact Us

Interested in exploring how Hydrolox® could improve your filtration performance?
Please contact us at info@bondexinc.com to discuss how to work with your preferred filter bag supplier to execute a bag test in your application.

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