



News & Facts

5/2012



Pulse-Jet-Filtration.

Neenah Gessner develops a brand new filter media for pulse-jet filtration.

Neenah Gessner presents a brand new filter material with excellent filtration characteristics for pulse-jet applications. A patent application is currently pending.

The best materials presently available for reverse pulse filters consist of a substrate in combination with a membrane or a nanofiber layer.

These filter materials have very good surface filtration characteristics, so that they are excellent for pulse-jet applications.

Both types have disadvantages: Apart from their high cost, there are pending patents which are in force.

Now, Neenah Gessner has developed a material that avoids these disadvantages.

Due to the very high mechanical stability of this newly developed material, it can be easily converted from rolls into finished filter elements, so enabling higher productivity.

Materials for pulse-jet applications are tested according to VDI 3926 [see test rig in Fig. 1]. Here, the substrate is loaded with dust up to a specific pressure drop value.

As soon as this value is reached, the material is pneumatically pulsed from the clean side to remove the filter cake on the upstream side.

This procedure is performed over 10,000 times. At the end, the ratio between the initial pressure drop reading and the final pressure drop reading is determined.

If the ratio is close to one, the medium is particularly suitable for pulse-jet-applications because it can be used longer in real-life applications.

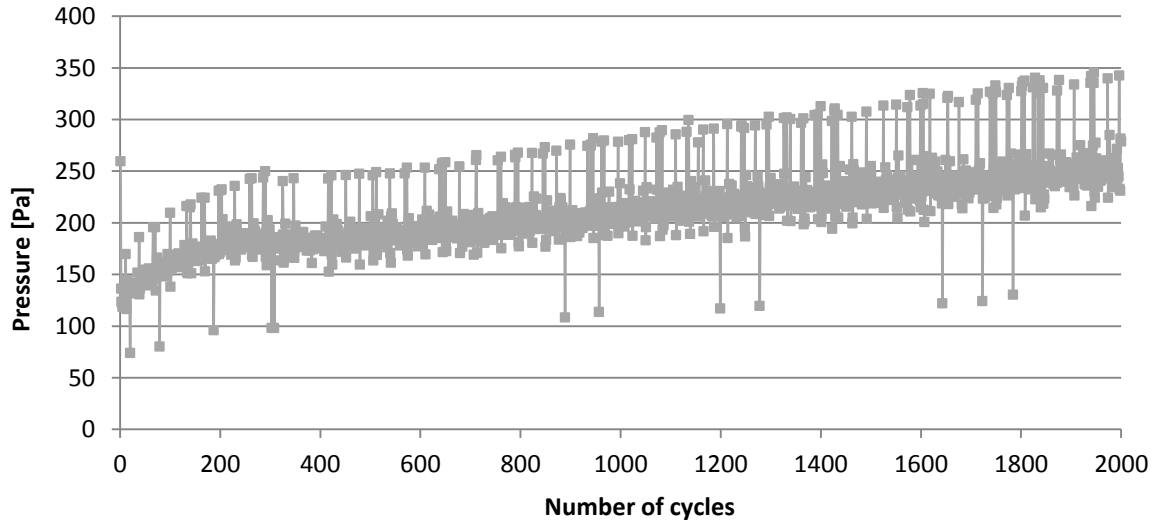


Figure 1: Test rig according to VDI3926

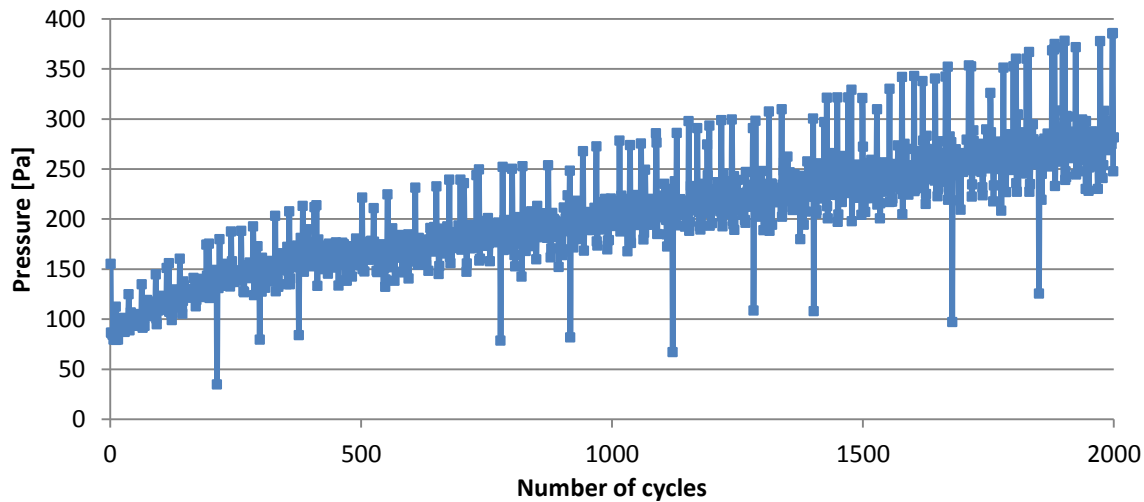
Pulse-Jet-Filtration.

Comparison of Media.

Ageing of a nano fiber coated material [using electrospinning]

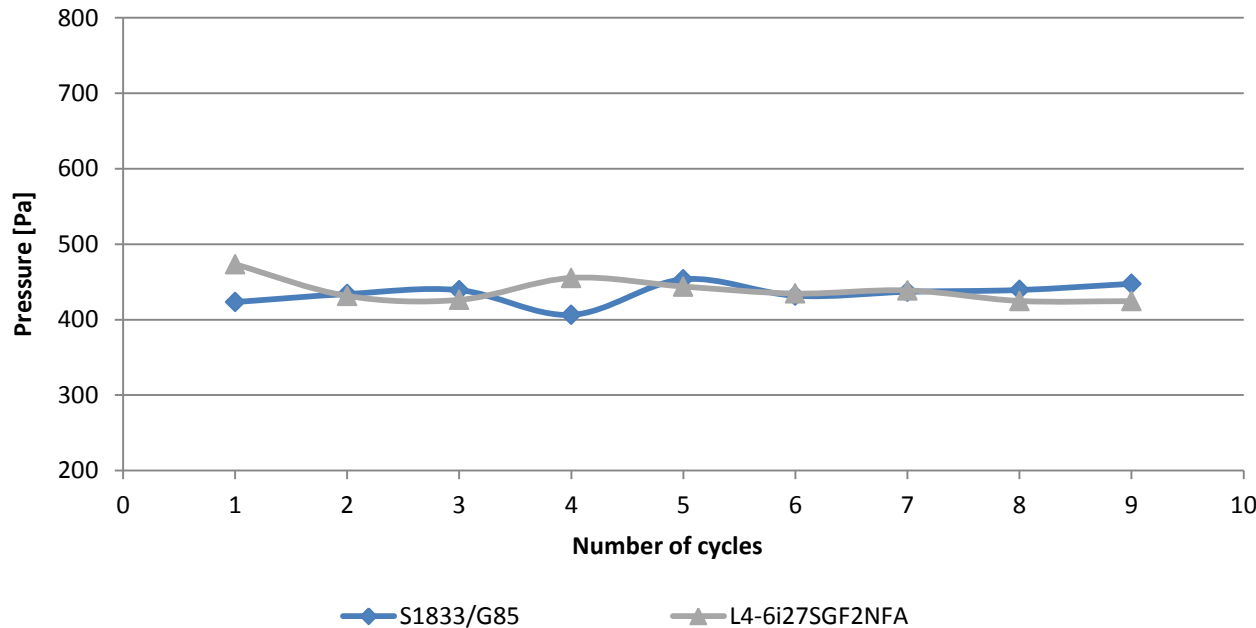


Ageing of Neenah Gessner's newly developed material



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Result according to VDI 3926.



Test conditions:

Dust concentration: 2000mg/m³

Dust Plural NF

Face velocity: 5m³/h

Ageing cycles: 2000 à 5sec

The VDI 3926 test shows, both in ageing and in its final state, Neenah Gessner's newly developed material is fully comparable to that of a state-of-the-art nanofiber media with comparable initial pressure drop.

Neenah Gessner's newly developed material is made from a highly elastic fine fiber. In combination with a cellulose carrier or a fully synthetic carrier, it offers high burst strength which makes it capable of withstanding the high mechanical loads involved in pulse-jet applications.

Apart from long life, the new material offers two very important advantages:

Firstly, when the highly elastic medium is converted, stray or broken fibers are released from the medium. They are, as a rule, therefore not picked up by the air pulse cleaning.

Secondly, because of the elasticity of the material, the recleaning process is enhanced because the whole medium is capable of vibrating during pulsing but without being damaged in the process.

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Currently available media.

The new material is currently available in three versions:

G85k

Cellulose with non-cure impregnation combined with a fine fibre non-woven layer

G85Fk

Cellulose with non-cure impregnation in flame retardant version [DIN 53438] with fine fibre non-woven layer.

G86k

Synthetic carrier combined with a non-woven layer

	Grammage [g/m ²]	Air Permeability [L/m ² *s]	Thickness [mm]	Burst strength [kPa]
G85k	150	230	0,55	>300
G85Fk	170	220	0,6	>250
G86k	210	250	0,55	>500

Alongside these standard versions, we can of course produce tailor-made media for our customers.

Direct contact.

Andreas Demmel will be happy to answer any questions on our new pulse-jet media range, and to offer you any other assistance you might need.



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