



filter technology innovation for rail infrastructure



**United Nations Economic Commission for Europe
Trans-European Railway (TER) Project
Trans-European North-South Motorway (TEM) Project**

TEM and TER Joint Expert Meeting
Bad Gastein/Austria 10 October 2013

Dexwet® history



- **2002:** Dexwet® USA LLC founded in Georgia, USA as patent holding
- **2005:** Dexwet® Technology Distribution Ltd. founded as marketing company
- **2008:** Dexwet® awarded “**Company of the Year 2008**” in segment environmental technologies by Austrian Ministry of Economy
- Dexwet® International AG consolidated in 2011 as milestone for international growth
- first **patent** application in 1999, first patent granted 2002, meanwhile 28 international patents in place => **4th patent generation** in filing process

Dexwet[®] technology

- Invented to filter **harmful toxic fine dust** emitted from laser printers, copy machines, faxes
- Effective filtering of
 - **Macro-dusts** (5 - 0,1 mm particles)
 - **Micro-dusts** (0,1 – 0,001 mm particles) and
 - **Nano-dusts** (0,001 – 0,000001 mm particles)
- **Air-permeable** staggered filter staves with multi-rows moistened with special fluid medium (working principle similar to human nose and lung)
- Particles are **bound long term** by liquid
- Bases on **knowledge and science framework** of
 - Applied advances **biomimetics, nano-technology** and fundamental physical & chemical principles



Dexwet® technology lead



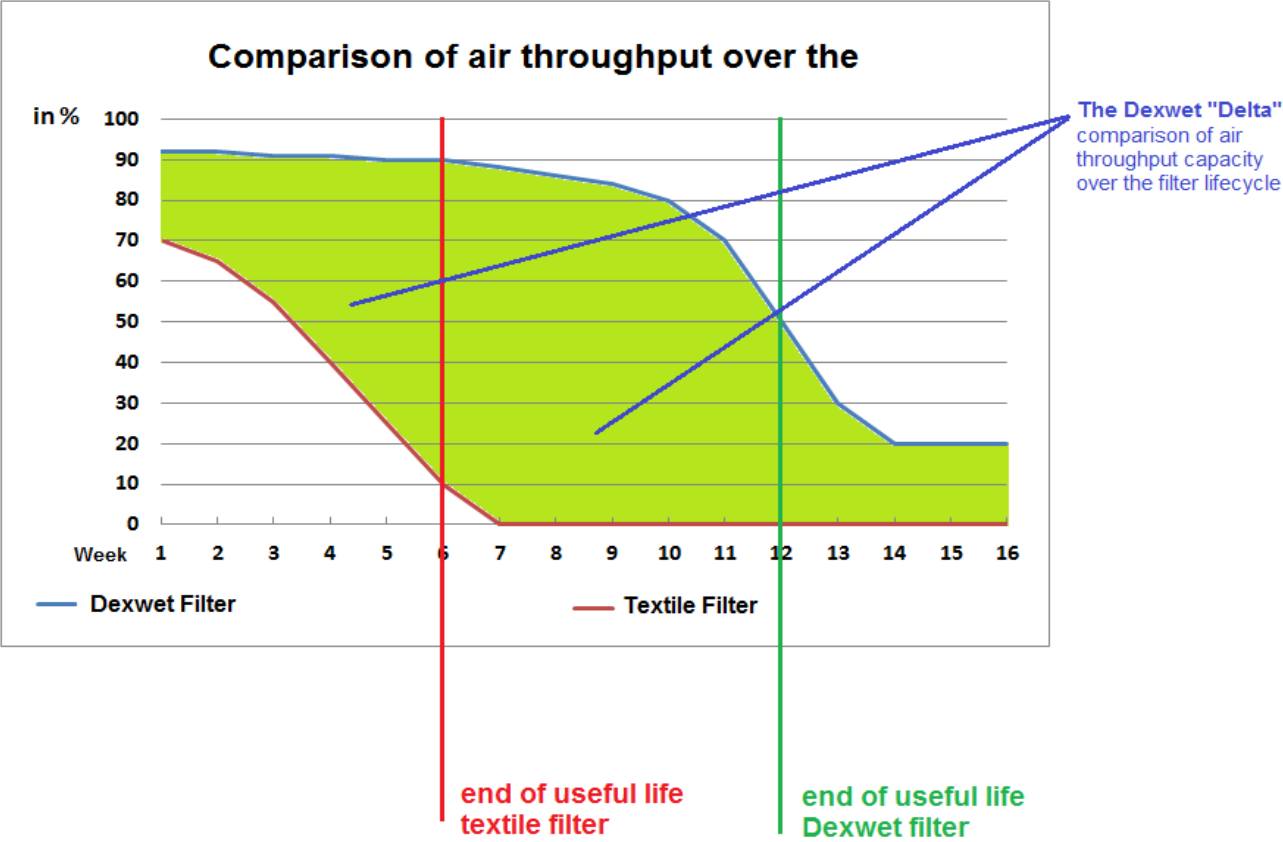
- While competitive in filtering macro-dust, Dexwet® technology is the **most effective and economic solution** to filter more than 95% of **micro- and nano-dusts**
- **High air-throughput sustained** even when filter is ending its lifetime (ideal for **combination with electronic devices** that need high air throughput in order not to overheat)
- **No Billard Effect** (bigger dust particles pushing out smaller particles); what Dexwet® filters permanently stays in the filter
- **Longer filter lifetime** (2-6 times longer compared to conventional fiber and textile fabrics) => significant cost saving potential through **reduction of service & maintenance works & costs**

Without Dexwet® filter
after 22 weeks of operation



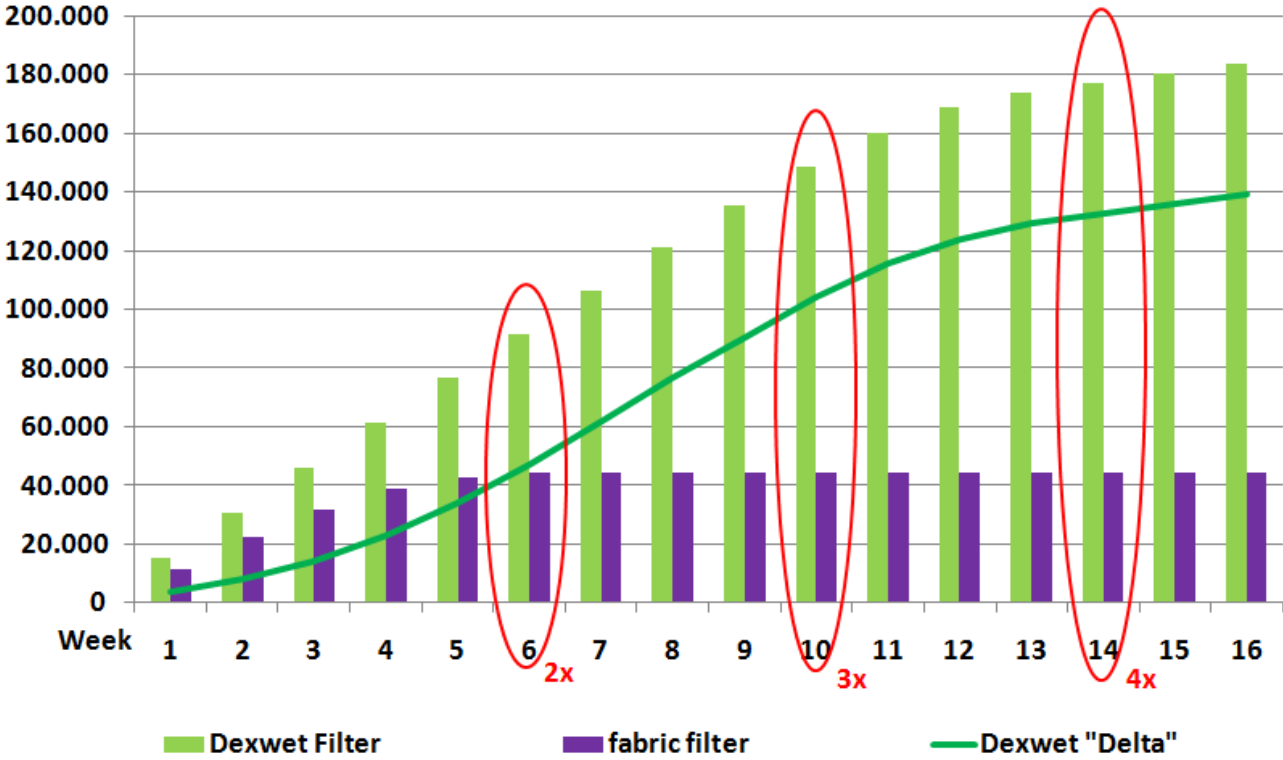
With Dexwet® filter
after 22 weeks of operation





Dexwet dominant USP - Air Throughput Capacity

air throughput volume in m3



Cooperation OEGB-Dexwet

- first joint applied R&D project initiated beginning of 2013 for info-panels
- service cost reduction by doubling filter exchange term (2->4 months)
- protection of electronics, longer investment lifecycle, less spareparts



Dexwet Filter



Traditional Fabric Filter

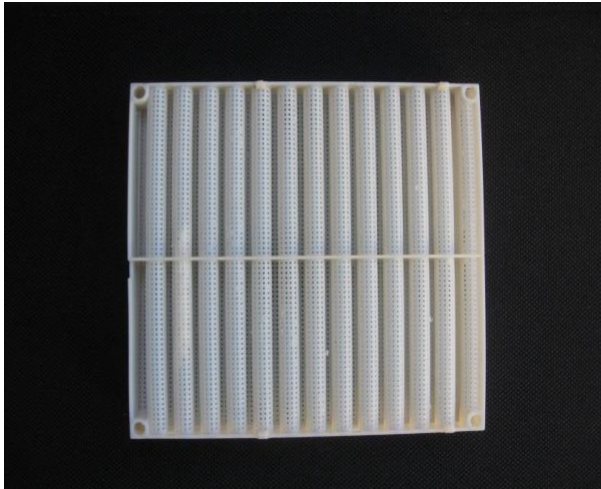


after 6 weeks of operation

Cooperation OEBB-Dexwet

DEXWET[®]
INTERNATIONAL AG

- **Dexwet[®] multifunctional filter system MF-1** is designed
 - highly flexible
 - adaptable to any size, length and environment (heat, cold, humidity)
 - highly sterile and sterilizing (virus, bacteria, biologically hazardous particles,...)
 - fully recyclable



Cooperation OEGB-Dexwet



- **Joint product development:**
 - air ventilation and air condition in railway locomotives & wagons
 - air ventilation and air condition in other railway facilities & infrastructure
 - automation equipment, etc.
- **focus on**
 - business process optimization
 - rationalization potentials
 - sustainable development and
 - energy efficiency
- **joint marketing** to European railway markets

Dexwet International AG



Thank you for your attention!

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