

## Main Topics



### Aerosols & Particles

- environmental relevance
- occupational safety
- particle synthesis

### Air Quality & Gas Treatment

- filtration and sorption
- process development
- CFD simulations

### Circular Economy & Water Technology

- mechanical & thermal processes
- reactive & oxidative processes
- process development

### Analysis & Measurement Techniques

- trace analysis
- development of instruments
- process digitalisation



# HVAC Filters

## Tests According to ISO 16890



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# HVAC Filters – Test According to ISO 16890

## Test Rig



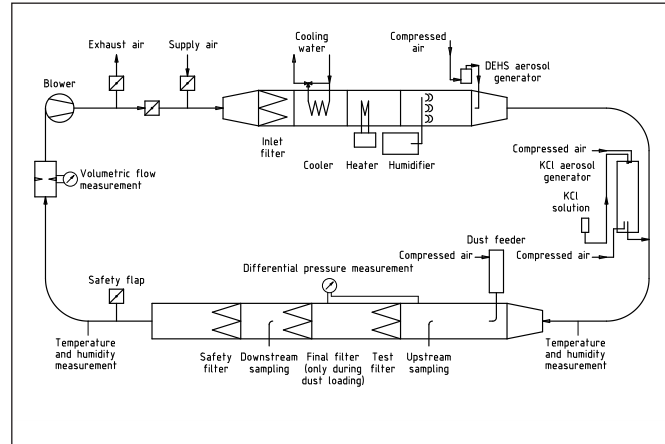
State-of-the-art test facility

- Measurement of
  - differential pressure
  - filtration efficiency for various aerosols
- Filter loading with various test dusts
- Filter discharging using isopropanol vapour



Closed-loop test rig

## Technical Specifications

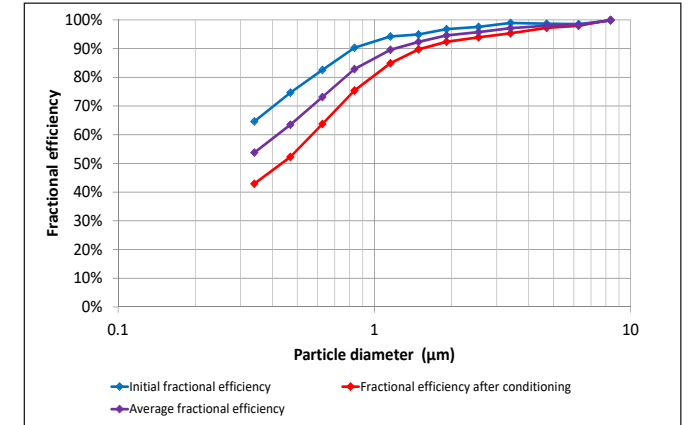


Schematic of the test rig

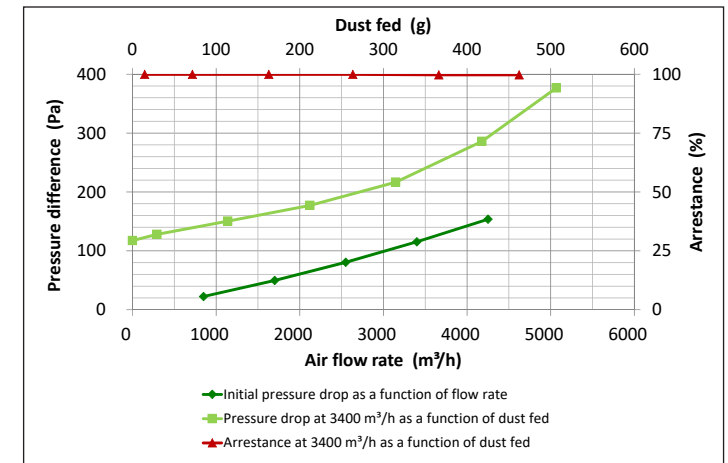
- Standard conditions: 50 % rh at 23°C
- Temperature range: 15 – 40 °C
- Rel. humidity range: 15 – 95 % rh
- Test air flow rate: 800 – 5000 m<sup>3</sup>/h
- Differential pressure: up to 5000 Pa
- Test aerosol: DEHS, KCl, NaCl ≥ 4 nm, diesel soot
- Dust concentration: up to 0.6 g/m<sup>3</sup>

Tests according to DIN EN ISO 16890-1:2017-08, DIN EN ISO 16890-2:2017-08, DIN EN ISO 16890-3:2017-08 and DIN EN ISO 16890-4:2017-08 are accredited according to DIN EN ISO/IEC 17025:2018. The accreditation is only valid for the scope specified in the annex of accreditation certificate no. D-PL-19759-01-03 by the Deutsche Akkreditierungsstelle GmbH (DAkkS) from 30.11.2022 (updated certificate pending).

## Exemplary Results



Filtration efficiencies of a filter classified as ISO ePM1 65 % before and after discharging and average efficiency according to ISO 16890-2 and -4



Initial pressure drop as a function of flow rate, pressure drop during dust loading and arrestance as a function of the supplied dust mass according to ISO 16890-3