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1002
ISO/IEC 17025

Filtrimeister OÜ
Ehitajate tee 110
EE-12618 TALLIN
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Testing of Air Filter according to EN779:2012

(3 appendices)

A test according to EN 779:2012 was carried out by request from Filter AB.

Tested item

Filtrimeister OÜ, EU7 592x592x600 (8), F7, 592 mm x 592 mm x 600 mm, 8 pocket air filter.
Filtrimeister OÜ, EU7 592x592x600 (8), F7, filter medium sample from a
592 mm x 592 mm x 600 mm, 8 pocket air filter (for discharging test).

The items were sent to SP by Filtrimeister OÜ and were received by SP on September 27, 2013.

The items were without visible defects.

Date and Place

The test was carried out at SP's laboratory of Energy Technology in Borås, Sweden on October 8-9, 2013. Discharging test was carried out on October 11-14, 2013.

Test method

The test was carried out according to standard EN 779:2012 "Particulate air filters for general ventilation – Determination of the filtration performance".

Results

The results are presented in appendix 1 and are valid only for the items tested.

Measurement equipment

- Pressure gauge Furness model 318, SP's inventory no. 901 568 (static P Filter)
- Pressure gauge Furness model 318, SP's inventory no. 901 569 (static P Flow)
- Pressure gauge Furness FC012, SP's inventory no. 201 691 (ΔP Filter)
- Pressure gauge Furness FC012, SP's inventory no. 201 690 (ΔP Flow)
- Particle counter Las-X II, SP's inventory no. 701 378
- Barometer, Testo 511, SP's inventory no. 900 078
- Temperature and RH, Testo 635, SP's inventory no. 900 065
- Weighing scale, Mettler PC16, SP's inventory no. 202 741
- Flow meter, MFS-C-250, SP's inventory no. 202 742
- Flow meter, MFS-C-50, SP's inventory no. 202 190
- Kr-85 Aerosol Neutralizer, TSI, SP's inventory no. 202 635

Uncertainty of measurement

The uncertainty of the Air flow is better than ± 5 %
The uncertainty of the Pressure Drop is better than ± 3 %
The uncertainty of the Temperature is better than ± 0.5 ºC
The uncertainty of the Relative Humidity is better than ± 3 % RH
The uncertainty of the Atmospheric Pressure is better than ± 1 mbar
The uncertainty of the Measured mass is better than ± 0.5 g

The method error in determination of the filtration efficiency is:
η = 0-90 %: ± 0.1 of penetration value [%]
η = 90-99 %: ± 0.2 of penetration value [%]
η = 99-99.99 %: ± 0.5 of penetration value [%]
η > 99.99 %: ± 1 of penetration value [%]

The uncertainty of the filtration efficiency according to EN 779:2012 is presented in the appendix.

SP Technical Research Institute of Sweden
Energy Technology - Combustion and Aerosol Technology

Performed by

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Date & Time: 2013-10-16 08:59:10 +02:00

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Examined by

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Marie Rönnbäck

Appendices
1. Test report according to EN779:2012
2. Picture of tested item
3. Interpretation of test reports according to section 13.2 in EN779:2012

Appendix 1

Testing organisation: SP Technical Research Institute of Sweden Report no.: 3P07091

EN 779:2012 AIR FILTER RESULTS

GENERAL

Test no.: SP201310081	Date of test: 08/10/2013 - 09/10/2013	Supervisor: CM
Test requested by: Filtrimeister OÜ		Device receiving date
Device delivered by: Filtrimeister OÜ		27/09/2013

DEVICE TESTED

Model: EU7 592x592x600 (8)	Manufacturer: Filtrimeister OÜ	Construction: Pocket filter, 8 pockets
Type of media: Synthetic	Net effective filtering area: 5.9 m²	Filter dimensions (width x height x depth): 592 mm x 592 mm x 600 mm

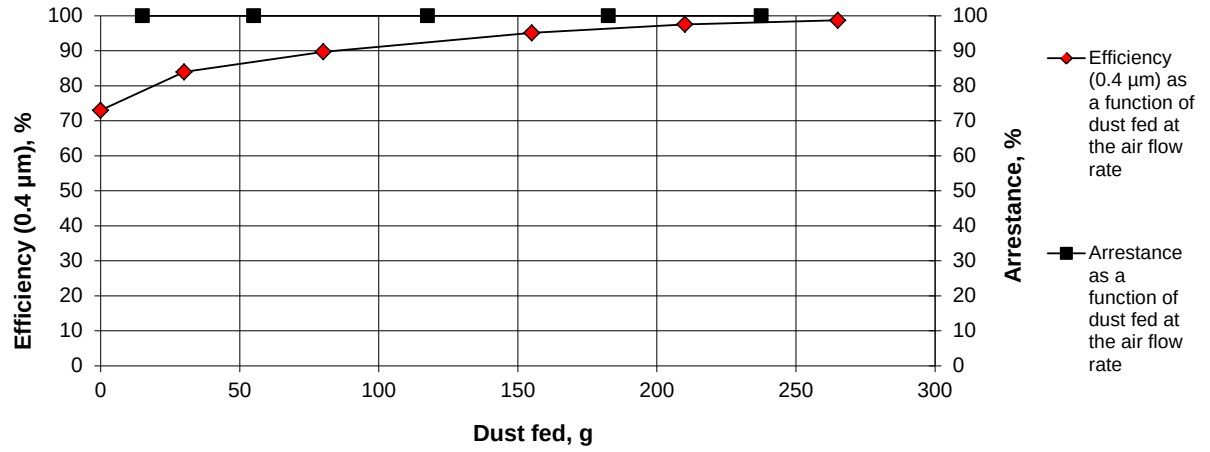
TEST DATA

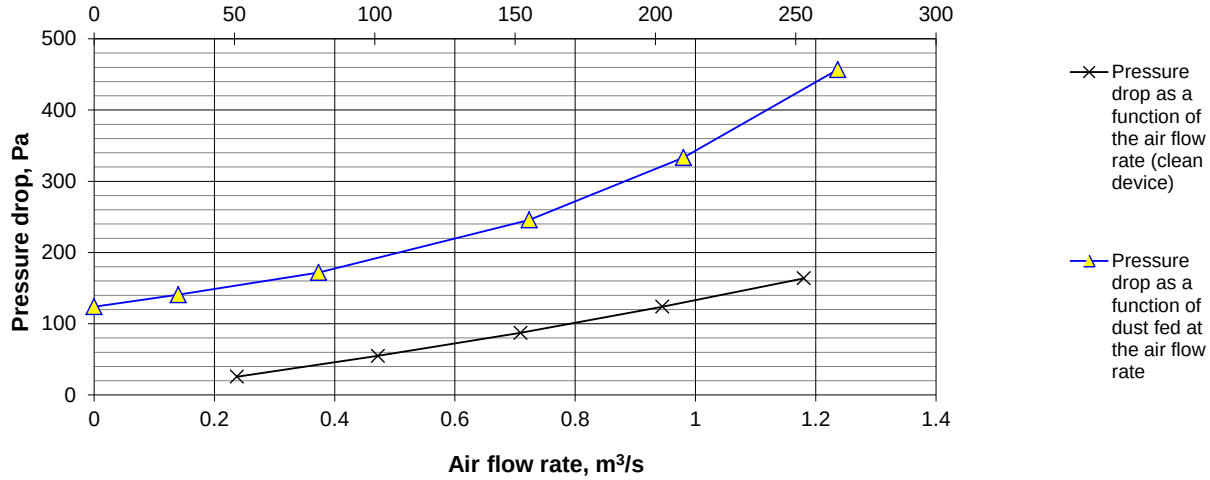
Test air flow rate: 0.944 m^3/s	Test air temperature: 26 to 34 °C	Test air relative humidity: 26 to 43 %	Test aerosol: DEHS	Loading dust: ASHRAE 52/76

RESULTS

Initial pressure drop: 124 Pa	Initial arrestance: >99 %	Initial efficiency (0.4 µm): 73 %	Test dust capacity: 155 / 215 / 258 g	Untreated/ discharged efficiency of media (0.4 µm): 77 % / 44%
Final test pressure drop: 250 / 350 / 450 Pa	Average arrestance: >99% / >99% / >99%	Average efficiency (0.4 µm): 88% / 90% / 92%	Filter class (450 Pa): F7	Remarks:

Note: The performance results are only valid for the tested item and cannot by themselves be quantitatively applied to predict efficiency and lifetime in service





Appendix 1

EN779:2012 - Efficiency after different dust loading phases

Air filter: EU7 592x592x600 (8)
Test no.: SP201310081
Test aerosol: DEHS
Air flow rate: 0.944 m^3/s

Particle size		Efficiency %					
Interval	Mean	Pressure drop, Pa and Dust fed, g					
		124 Pa	141 Pa	172 Pa	246 Pa	333 Pa	457 Pa
µm	µm	0 g	30 g	80 g	155 g	210 g	265 g
0.10 - 0.12	0.11	68.4 ± 2.7	74.2 ± 6.5	80.2 ± 2.4	89.2 ± 0.8	89.9 ± 4.1	94.0 ± 1.9
0.12 - 0.15	0.13	65.0 ± 0.9	72.5 ± 0.6	78.1 ± 1.1	86.2 ± 0.3	91.0 ± 0.4	94.4 ± 0.5
0.15 - 0.20	0.17	62.3 ± 0.8	71.1 ± 0.6	77.2 ± 0.8	86.6 ± 0.5	91.8 ± 0.2	94.8 ± 0.2
0.20 - 0.25	0.22	61.8 ± 1.4	72.4 ± 0.6	79.0 ± 0.8	87.9 ± 0.6	93.0 ± 0.6	95.8 ± 0.3
0.25 - 0.35	0.30	64.7 ± 0.7	76.6 ± 0.5	82.8 ± 0.9	91.3 ± 0.4	95.0 ± 0.2	97.4 ± 0.2
0.35 - 0.45	0.40	73.0 ± 0.7	84.0 ± 0.8	89.7 ± 0.5	95.1 ± 0.3	97.5 ± 0.2	98.7 ± 0.2
0.45 - 0.60	0.52	81.5 ± 1.0	90.6 ± 0.6	93.9 ± 0.6	97.6 ± 0.3	99.1 ± 0.2	99.4 ± 0.2
0.60 - 0.75	0.67	87.7 ± 1.2	94.6 ± 0.8	96.7 ± 0.6	98.8 ± 0.2	99.6 ± 0.2	99.7 ± 0.2
0.75 - 1.00	0.87	92.6 ± 0.5	96.9 ± 0.3	98.6 ± 0.3	99.6 ± 0.1	99.9 ± 0.1	99.9 ± 0.1
1.00 - 1.50	1.22	96.5 ± 0.8	98.9 ± 0.5	99.3 ± 0.3	99.8 ± 0.2	100.0 ± 0.0	100.0 ± 0.1
1.50 - 2.00	1.73	98.9 ± 0.3	99.7 ± 0.3	99.9 ± 0.1	100.0 ± 0.1	100.0 ± 0.1	99.9 ± 0.1
2.00 - 3.00	2.45	100.0 ± 0.0	99.9 ± 0.2	100.0 ± 0.0	100.0 ± 0.0	100.0 ± 0.0	100.0 ± 0.0
NOTE	The uncertainty of the measured efficiencies is reported on a 95 % confidence level.						

EN779:2012 - Average efficiency at different final test pressure drops

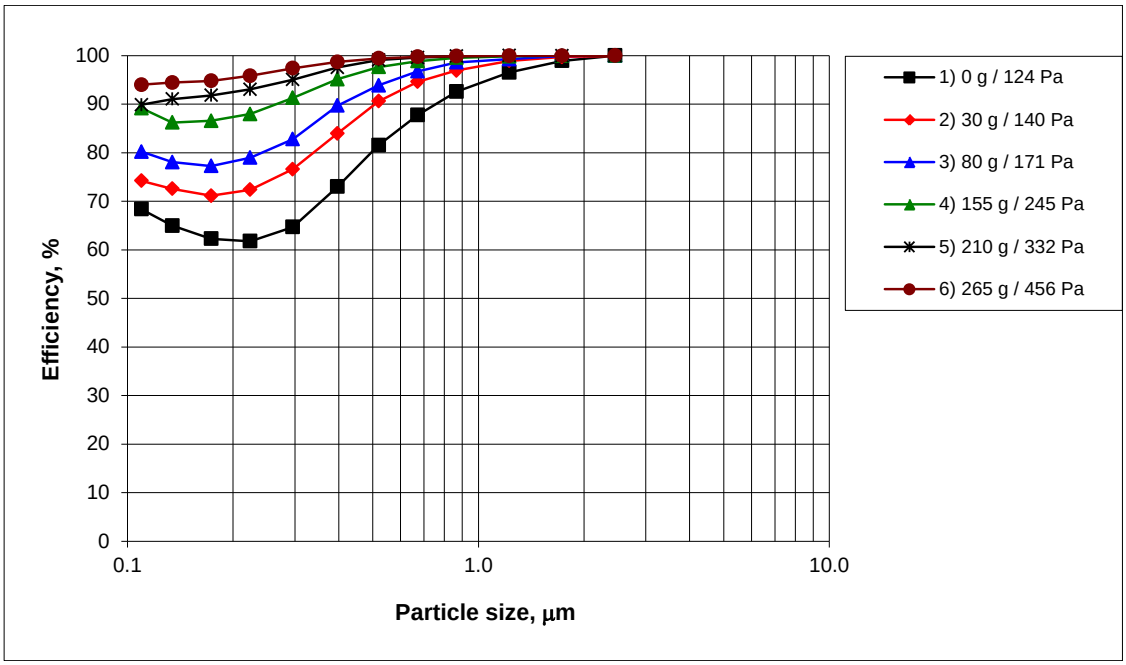
Air filter: EU7 592x592x600 (8)
Test no.: SP201310081
Test aerosol: DEHS
Air flow rate: 0.944 m^3/s

Particle size		Average efficiency %		
Interval	Mean	Final test pressure drop		
µm	µm	250 Pa	350 Pa	450 Pa
0.10 - 0.12	0.11	79.8 ± 4.0	82.5 ± 3.6	84.2 ± 3.0
0.12 - 0.15	0.13	77.5 ± 0.8	80.7 ± 0.7	82.8 ± 0.6
0.15 - 0.20	0.17	76.6 ± 0.8	80.2 ± 0.6	82.5 ± 0.5
0.20 - 0.25	0.22	77.9 ± 1.0	81.5 ± 0.8	83.7 ± 0.7
0.25 - 0.35	0.30	81.7 ± 0.8	84.9 ± 0.6	86.9 ± 0.5
0.35 - 0.45	0.40	88.0 ± 0.6	90.3 ± 0.5	91.7 ± 0.4
0.45 - 0.60	0.52	92.8 ± 0.6	94.4 ± 0.5	95.2 ± 0.4
0.60 - 0.75	0.67	95.9 ± 0.7	96.8 ± 0.6	97.3 ± 0.5
0.75 - 1.00	0.87	97.8 ± 0.3	98.3 ± 0.2	98.6 ± 0.2
1.00 - 1.50	1.22	99.1 ± 0.4	99.3 ± 0.3	99.4 ± 0.2
1.50 - 2.00	1.73	99.8 ± 0.2	99.8 ± 0.2	99.8 ± 0.1
2.00 - 3.00	2.45	100.0 ± 0.1	100.0 ± 0.0	100.0 ± 0.0
Test dust capacity		155 g	215 g	258 g
NOTE	The uncertainty of the measured efficiencies is reported on a 95 % confidence level.			

Appendix 1

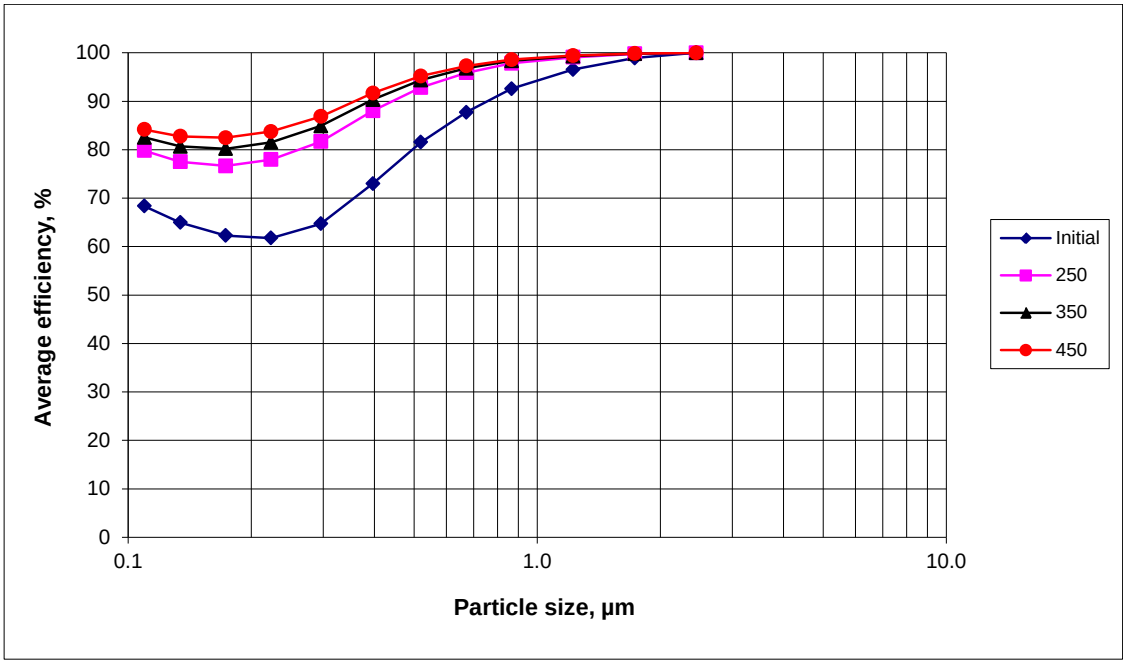
EN779:2012 - Efficiency after different dust loading phases

Air Filter: EU7 592x592x600 (8)
Test no.: SP201310081
Test aerosol: DEHS
Air flow rate: 0.944 m^3/s



EN779:2012 - Initial and average efficiency at different final test pressure drops

Air Filter: EU7 592x592x600 (8)
Test no.: SP201310081
Test aerosol: DEHS
Air flow rate: 0.944 m^3/s



Appendix 1

EN779:2012 - Air flow rate and pressure drop after different dust loading phases

Air filter: EU7 592x592x600 (8)

Test no.: SP201310081

Test aerosol: DEHS

Air flow rate: 0.944 m^3/s

Date	Dust fed	Air flow meter				Filter							
	m_{tot}	t_f	p_{sf}	dp_f	q_m	t	φ	p_a	ρ	q_v	Δp	$\Delta p_{1.20}$	
	g	°C	Pa	Pa	kg/s	°C	%	kPa	kg/m^3	m^3/s	Pa	Pa	
Clean filter													
08/10/2013	0	26.2	61	32	0.27	26.2	41.3	100.0	1.158	0.237	26	26	
08/10/2013	0	26.4	151	126	0.55	26.4	41.0	100.1	1.158	0.472	56	55	
08/10/2013	0	26.5	262	284	0.82	26.5	41.1	100.2	1.159	0.709	88	87	
08/10/2013	0	25.8	398	505	1.10	25.8	42.9	100.3	1.163	0.945	125	124	
08/10/2013	0	26.8	524	785	1.37	26.8	41.2	100.4	1.160	1.180	166	164	
Clean filter pressure drop is proportional to $(q_v)^n$, where n = 1.1493													
Dust loading phase													
08/10/2013	30	30.2	419	498	1.083	30.2	33.0	100.3	1.146	0.945	143	141	2
08/10/2013	30	32.0	412	495	1.077	32.0	29.6	100.3	1.139	0.945	143	140	1
09/10/2013	80	29.0	442	494	1.075	29.0	33.4	99.3	1.139	0.944	174	172	2
09/10/2013	80	30.7	439	491	1.069	30.7	31.2	99.3	1.132	0.944	173	170	1
09/10/2013	155	32.0	510	490	1.066	32.0	28.1	99.4	1.129	0.945	250	246	2
09/10/2013	155	32.7	507	489	1.064	32.7	27.5	99.4	1.126	0.945	246	242	1
09/10/2013	210	31.9	604	490	1.067	31.9	29.3	99.4	1.129	0.945	339	333	2
09/10/2013	210	33.3	602	488	1.062	33.3	27.1	99.4	1.124	0.945	337	331	1
09/10/2013	265	33.5	726	488	1.062	33.5	26.1	99.5	1.124	0.945	466	457	2
09/10/2013	265	34.8	716	485	1.056	34.8	24.8	99.4	1.119	0.944	461	451	1

2 = after dust increment

1 = before next dust increment

Symbols and units

dp_f	air flow meter differential pressure, Pa	q_m	mass flow rate, kg/s
m_{tot}	cumulative mass of dust fed to filter, g	q_v	air flow rate filter, m^3/s
Δp	measured filter pressure drop, Pa	t_f	temperature at air flow meter, °C
$\Delta p_{1.20}$	filter pressure drop at air density 1.20 kg/m^3, Pa	t	temperature upstream of filter, °C
p_a	absolute air pressure upstream of filter, kPa	φ	relative humidity upstream of the filter, %
p_{sf}	air flow meter static pressure, kPa	ρ	air density upstream of filter, kg/m^3

Appendix 1

EN779:2012 - Pressure drop and arrestance after different dust loading phases

Air filter: EU7 592x592x600 (8)

Test no.: SP201310081

Test aerosol: DEHS

Air flow rate: 0.944 m^3/s

Date	Δp_1	dm	m_{tot}	Δp_2	m_1	m_2	Δm	m_d	A	A_m
	Pa	g	g	Pa	g	g	g	g	%	%
08/10/2013	124	30	30	141	2639.0	2639.0	0.0	0.0	100.0	100.0
09/10/2013	140	50	80	172	2639.0	2639.0	0.0	0.0	100.0	100.0
09/10/2013	170	75	155	246	2639.0	2639.0	0.0	0.0	100.0	100.0
09/10/2013	242	55	210	333	2639.0	2639.0	0.0	0.0	100.0	100.0
09/10/2013	331	55	265	457	2639.0	2639.0	0.0	0.0	100.0	100.0

Symbols and units

A	arrestance, %
A_m	average arrestance, %
dm	dust increment, g
Δp_1	pressure drop before dust increment (air density 1.20 kg/m³), Pa
Δp_2	pressure drop after dust increment (air density 1.20 kg/m³), Pa
m_d	dust in duct after device, g
m_1	mass of final filter before dust increment
m_2	mass of final filter after dust increment
m_{tot}	cumulative mass of dust fed to filter, g
Δm	mass gain of final filter, g

Mass of tested item:

Clean filter:	2 155.3	g
After complete test:	2 415.4	g

Test dust

ASHRAE 52/76, Particle Technology Ltd.

Batch no: 8097

Appendix 1

EN779:2012 - Efficiency and pressure drop of untreated filter material at 100 % nominal velocity

Air filter: EU7 592x592x600 (8)
Test no.: SP201310111
Test aerosol: DEHS
Discharging method: Isopropanol
Air flow rate: 14.8 l/s
Media velocity: 0.16 m/s
Size of material sample: 9.24 dm²

Particle size µm		Sample 1	Sample 2	Sample 3	Average
		Efficiency %			
Interval	Mean	Pressure drop			
		91 Pa	87 Pa	88 Pa	89 Pa
0.10 - 0.12	0.11	75.2 ± 1.8	73.8 ± 3.1	75.3 ± 6.0	74.8
0.12 - 0.15	0.13	73.0 ± 2.0	69.7 ± 1.5	72.3 ± 0.9	71.7
0.15 - 0.20	0.17	69.4 ± 2.7	66.2 ± 2.1	70.1 ± 1.1	68.6
0.20 - 0.25	0.22	69.4 ± 2.2	65.4 ± 1.8	69.3 ± 1.3	68.0
0.25 - 0.35	0.30	72.8 ± 1.4	68.6 ± 2.2	70.6 ± 1.8	70.6
0.35 - 0.45	0.40	79.3 ± 1.6	74.7 ± 1.2	77.7 ± 1.7	77.2
0.45 - 0.60	0.52	85.3 ± 1.0	81.2 ± 1.6	85.1 ± 1.1	83.9
0.60 - 0.75	0.67	91.6 ± 1.9	88.7 ± 1.6	90.4 ± 1.5	90.2
0.75 - 1.00	0.87	95.2 ± 1.2	92.7 ± 1.1	94.5 ± 0.8	94.1
1.00 - 1.50	1.22	97.5 ± 0.6	96.6 ± 1.0	97.7 ± 0.6	97.3
1.50 - 2.00	1.73	99.4 ± 0.3	98.3 ± 0.4	99.0 ± 0.4	98.9
2.00 - 3.00	2.45	99.8 ± 0.4	99.7 ± 0.4	99.9 ± 0.2	99.8
NOTE	The uncertainty of the measured efficiencies is reported on a 95 % confidence level.				

EN779:2012 - Efficiency and pressure drop of discharged filter material at 100 % nominal velocity

Air filter: EU7 592x592x600 (8)
Test no. SP201310111
Test aerosol: DEHS
Discharging method: Isopropanol
Air flow rate: 14.8 l/s
Media velocity: 0.16 m/s
Size of material sample: 9.24 dm²

Particle size µm		Sample 1	Sample 2	Sample 3	Average
		Efficiency %			
Interval	Mean	Pressure drop			
		82 Pa	80 Pa	81 Pa	81 Pa
0.10 - 0.12	0.11	43.9 ± 16.3	54.2 ± 10.9	47.1 ± 12.0	48.4
0.12 - 0.15	0.13	31.9 ± 3.9	35.4 ± 2.8	33.5 ± 2.7	33.6
0.15 - 0.20	0.17	28.0 ± 2.1	31.3 ± 1.8	29.6 ± 3.3	29.6
0.20 - 0.25	0.22	29.5 ± 2.2	33.9 ± 2.6	29.0 ± 2.5	30.8
0.25 - 0.35	0.30	33.6 ± 4.0	37.6 ± 2.6	33.5 ± 1.7	34.9
0.35 - 0.45	0.40	42.2 ± 2.0	46.1 ± 2.8	42.4 ± 2.7	43.5
0.45 - 0.60	0.52	53.6 ± 3.3	55.9 ± 1.8	52.8 ± 2.0	54.1
0.60 - 0.75	0.67	62.7 ± 3.1	65.6 ± 3.3	63.9 ± 2.6	64.0
0.75 - 1.00	0.87	72.1 ± 1.5	74.8 ± 1.9	72.2 ± 1.4	73.0
1.00 - 1.50	1.22	84.5 ± 2.1	84.4 ± 1.6	81.8 ± 2.0	83.6
1.50 - 2.00	1.73	92.0 ± 1.3	92.7 ± 1.8	92.7 ± 1.4	92.5
2.00 - 3.00	2.45	98.9 ± 1.1	98.6 ± 0.7	98.8 ± 0.9	98.8
NOTE	The uncertainty of the measured efficiencies is reported on a 95 % confidence level.				

Appendix 1

EN779:2012 - Efficiency and pressure drop of untreated filter material at 50 % nominal velocity

Air filter: EU7 592x592x600 (8)
Test no.: SP201310111
Test aerosol: DEHS
Discharging method: Isopropanol
Air flow rate: 7.4 l/s
Media velocity: 0.08 m/s
Size of material sample: 9.24 dm²

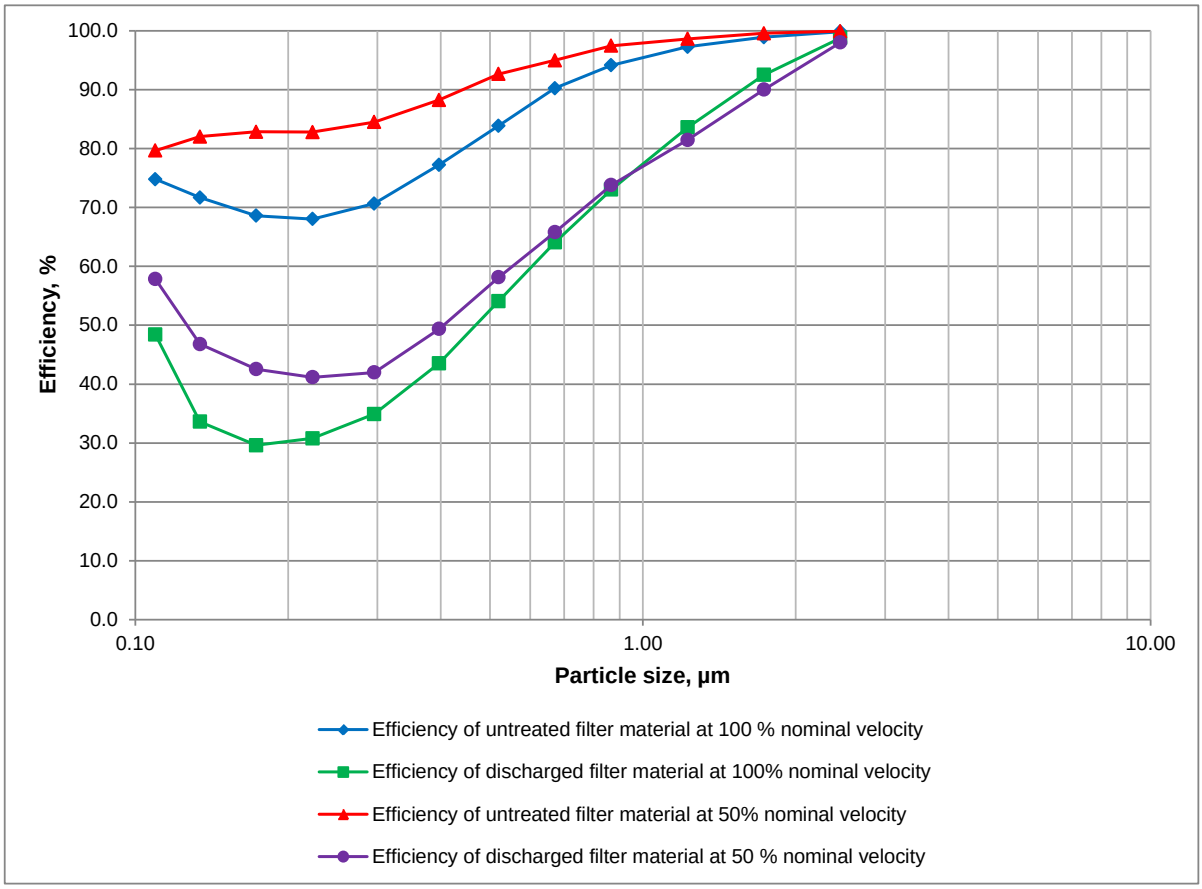
Particle size µm		Sample 1	Sample 2	Sample 3	Average
		Efficiency %			
Interval	Mean	Pressure drop			
		45 Pa	43 Pa	44 Pa	44 Pa
0.10 - 0.12	0.11	80.9 ± 8.3	79.3 ± 10.3	78.7 ± 9.9	79.6
0.12 - 0.15	0.13	83.5 ± 1.7	81.9 ± 1.1	80.6 ± 1.1	82.0
0.15 - 0.20	0.17	83.8 ± 0.9	81.9 ± 1.0	82.8 ± 1.3	82.8
0.20 - 0.25	0.22	84.4 ± 1.1	81.5 ± 1.4	82.5 ± 1.4	82.8
0.25 - 0.35	0.30	85.9 ± 0.7	83.4 ± 0.8	84.2 ± 1.1	84.5
0.35 - 0.45	0.40	89.7 ± 0.4	86.9 ± 1.0	88.2 ± 0.9	88.3
0.45 - 0.60	0.52	93.9 ± 1.1	91.8 ± 0.5	92.3 ± 0.5	92.7
0.60 - 0.75	0.67	95.9 ± 1.1	94.2 ± 0.8	94.8 ± 1.5	95.0
0.75 - 1.00	0.87	98.2 ± 0.4	97.1 ± 0.4	97.0 ± 0.6	97.4
1.00 - 1.50	1.22	99.2 ± 0.5	98.3 ± 0.4	98.3 ± 0.6	98.6
1.50 - 2.00	1.73	99.8 ± 0.1	99.4 ± 0.2	99.5 ± 0.2	99.6
2.00 - 3.00	2.45	100 ± 0.0	99.8 ± 0.3	99.9 ± 0.2	99.9
NOTE	The uncertainty of the measured efficiencies is reported on a 95 % confidence level.				

EN779:2012 - Efficiency and pressure drop of discharged filter material at 50 % nominal velocity

Air filter: EU7 592x592x600 (8)
Test no. SP201310111
Test aerosol: DEHS
Discharging method: Isopropanol
Air flow rate: 7.4 l/s
Media velocity: 0.08 m/s
Size of material sample: 9.24 dm²

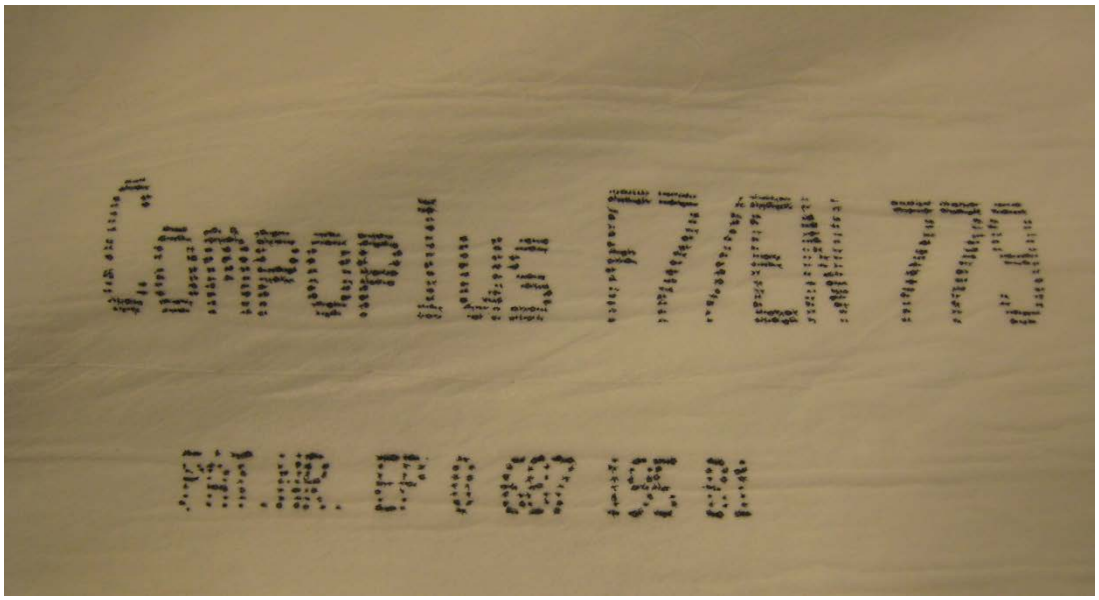
Particle size µm		Sample 1	Sample 2	Sample 3	Average
		Efficiency %			
Interval	Mean	Pressure drop			
		41 Pa	40 Pa	40 Pa	40 Pa
0.10 - 0.12	0.11	58.4 ± 5.2	59.9 ± 6.7	55.2 ± 18.7	57.8
0.12 - 0.15	0.13	44.5 ± 3.1	49.6 ± 2.9	46.3 ± 2.2	46.8
0.15 - 0.20	0.17	40.6 ± 1.9	45.0 ± 2.7	42.0 ± 1.2	42.5
0.20 - 0.25	0.22	38.6 ± 3.0	44.1 ± 2.9	40.8 ± 2.9	41.2
0.25 - 0.35	0.30	40.9 ± 3.4	44.7 ± 3.6	40.3 ± 2.8	42.0
0.35 - 0.45	0.40	48.3 ± 2.0	52.2 ± 2.6	47.7 ± 1.5	49.4
0.45 - 0.60	0.52	55.8 ± 2.8	61.1 ± 1.3	57.5 ± 1.6	58.1
0.60 - 0.75	0.67	63.6 ± 2.3	67.1 ± 3.6	66.6 ± 1.9	65.8
0.75 - 1.00	0.87	73.0 ± 2.0	75.6 ± 3.4	72.8 ± 1.5	73.8
1.00 - 1.50	1.22	81.6 ± 1.8	82.7 ± 1.9	80.0 ± 2.9	81.5
1.50 - 2.00	1.73	90.0 ± 1.7	89.9 ± 1.8	90.2 ± 1.8	90.0
2.00 - 3.00	2.45	98.1 ± 0.8	97.9 ± 1.1	98.1 ± 1.2	98.0
NOTE	The uncertainty of the measured efficiencies is reported on a 95 % confidence level.				

Appendix 1


100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Efficiency, %
0.10
1.00
10.00
Particle size, µm
Efficiency of untreated filter material at 100 % nominal velocity
Efficiency of discharged filter material at 100% nominal velocity
Efficiency of untreated filter material at 50% nominal velocity
Efficiency of discharged filter material at 50 % nominal velocity

Appendix 2


592 x 592


ComfoPlus F7/EN 779


FILTRIMEISTER
EU 7 592 x 592 x 600 (8)
Info ja tellimine tel 655 7530, faks 655 7531

Appendix 3

The interpretation of test reports – according to EN779:2012 13.2 Interpretation of test reports

This brief review of the test procedures, including those for addressing the testing of electrostatically charged filters, is provided for those unfamiliar with EN 779 procedures. It is intended to assist in understanding and interpreting the results in the test report/summary. (For further details of procedures the full EN 779 document should be consulted).

Many types of air filter rely on the effects of passive static electric charges on the fibers to achieve high efficiencies, particularly in the initial stages of their working life. Environmental factors encountered in service may affect the action of these electric charges so that the initial efficiency may drop substantially after an initial period of service. In many cases this is offset or countered by an increase in efficiency ("mechanical efficiency") as dust deposits in filter media. In the later stages of operating life the efficiency may increase to equal or exceed the initial efficiency. The reported untreated and conditioned (discharged) efficiencies show the extent of the electrical charge effect on initial performance. It should not be assumed that the measured conditioned (discharged) efficiency represents real life behaviour. It merely indicates the level of efficiency obtainable with the charge effect completely removed and with no compensating increase in mechanical efficiency.

For reasons of consistency filter efficiencies are measured using artificially generated clouds of synthetic DEHS material (droplets) with closely controlled particle size. These efficiency measurements are repeated after the filter has been loaded with ASHRAE loading dust until the resistance has risen to a value of 250 Pa in the case of the coarse (G) procedure and with up to a value of 450 Pa for the fine and medium (F and M) procedure. Test dust capacities measured in this way may be used for to compare performances and for rankings but should not be assumed to simulate real life operating conditions as the properties of dusts encountered in service conditions vary very widely.