



Test protocol			
Test code	filter EN 143 149 14683		
Type of test:	Flat sheet sample according to EN 149, EN 143, EN 14683		
Customer			
Laboratory:	Technical University of Liberec, CXI		
Tester:	Jakub Hrůza		
Principle:	<p>Oil particles with size in range 0,1 - 3 <math>\mu\text{m}</math> are generated and penetrate the filter sample. The air with particles is then diluted to obtain right concentration for the light scattering spectrofotometer, which is able to determinate the amount of each particle size. The efficiency of each particle size is calculated by formula: <math>E=(1-(c_d/c_u))</math> (%), where <math>c_d</math> is downstream concentration and <math>c_u</math> is upstream concentration. It is possible to test flat material or final respirator or mask. For the classification are used particle sizes 0,6 and 3 <math>\mu\text{m}</math>.</p>		
Date of test:	2 June 2020	Signature:	

Test parameters	Value	Unit
filter area:	100	$\text{cm}^2$
face velocity:	15,50	$\text{cm}/\text{sec}$
dust/aerosol:	DEHS	-
discharge:	no	-
downstream test duration	60	sec
total volume flow:	95,00	$\text{l}/\text{min}$
particle size range	0,12 – 3,5	$\mu\text{m}$
number of test samples	3,00	-
temperature	21	$^{\circ}\text{C}$
relative humidity	54	%
atmospheric pressure	1010	mbar

Tested properties	
$\Delta p_{0.95}$ (Pa)	Initial pressure drop for flow 95 $\text{l}/\text{min}$
$\Delta p_{0.30}$ (Pa)	Initial pressure drop for flow 30 $\text{l}/\text{min}$
BFE (%)	Estimation of efficiency for particle size 3 $\mu\text{m}$ according to EN 14683.
E (0,6 $\mu\text{m}$ )	Efficiency for particle size 0.6 $\mu\text{m}$ - estimation of efficiency according to EN 143 or EN 149

<b>Test results</b>					
Sample:	$\Delta p_{0,95}$ (Pa)	$\Delta p_{0,30}$ (Pa)	E (0,6 $\mu\text{m}$ )	BFE (%)	Classification (EN 149)
type: pardam 10 těsnění silikonem	<b>124,0</b>	<b>32,0</b>	<b>99,35</b>	<b>100,00</b>	<b>FPP3</b>
type: pardam 10 těsnění silikonem	<b>131,0</b>	<b>34,0</b>	<b>99,38</b>	<b>100,00</b>	<b>FPP3</b>

#### Classification according to EN 149 standard (EN 143)

Maximum pressure drops (Pa)		
Class	flow 30 l/min	flow 95 l/min
FFP1	60	210
FFP2	70	240
FFP3	100 (120 for EN 143)	300 (420 for EN 143)

Minimum filter efficiency for particle with mean size 0,6 $\mu\text{m}$ (%)		
Class	Sodium chloride particles	Parafin oil particles
FFP1	80	80
FFP2	94	94
FFP3	99	99

#### Classification according to EN 14683 standard

Class	minimum efficiency of 3 $\mu\text{m}$ droplets with bacteria	Maximum pressure drop for air velocity 5,3 cm/sec (Pa)	Special requirement
Type I	95	29,4	
Type I R	95	49	Water repelency
Type II	98	29,4	
Type II R	98	49	Water repelency

Fractional filter efficiency of all test samples

