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## Test Report

### FIT Farm Innovation Team GmbH FIT F248

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# Test report

**Object:** Test of mask FIT F248  
**Samples received:** 14 September 2020  
**Sampling by:** FIT Farm Innovation Team GmbH  
**Method:** EN 149:2001 + A1:2009  
**Test date:** 14.09.2020-25.09.2020

**Revision:** Revision made to change Paraffin oil results and conclusion. Due to the large variation in the results it was agreed to do a retest of the masks with 3 different masks from the same shipment. These results make the masks comply with the requirements for FFP2 from EN 149:2001+A1:2009.

## Results:

All results must meet the requirements stated in EN 149:2001 + A1:2009. All tests were performed accordance to EN 149:2001+A1:2009.

Abbreviations:

(AR)= As received, (TC)= Temperature conditioned, (SW)= Simulated wearing treatment,  
(MS)= mechanical strength

## § 8.2 Visual inspection

The mask was of uniform white material and without valve. The mask had white straps that fit around the ears and foam under its nose clip.

## § 8.4 Practical performance

	Comments (1)	Pass/fail	Comments (2)	Pass/fail
a) Head harness comfort	Ok straps	P	Straps are comfortable	P
b) Security of fastenings	Not easy to adjust	P	Straps needed adjustment	P
c) Field of vision	Ok	P	Ok	P
d) Maintenance of face seal	Ok	P	Ok	P
e) Other comments	The foam on the nose clip is comfortable	P	Comfortable to breathe through	P

Table 1: Results from practical performance

### § 8.5 Total Inward Leakage

Total Inward Leakage	46 of 50 results (%)	8 of 10 individual means (%)
FFP1	25	22
FFP2	11	8
FFP3	5	2

Table 2: Requirements for Total Inward Leakage in accordance to EN 149:2001 + A1:2009

Total Inward Leakage	1(AR)	2(AR)	3(AR)	4(AR)	5(AR)	6(TC)	7(TC)	8(TC)	9(TC)	10 (TC)	11 (TC)	Class/fail
Leakage (%)	0,62 0,78 0,79 0,86 0,84	14,95 13,89 9,37 4,39 4,57	1,47 1,41 1,41 1,70 1,60	3,62 3,55 2,45 2,38 1,87	0,98 1,03 0,88 1,24 0,98	6,87 8,75 9,41 8,47 8,92	2,40 4,70 6,40 4,23 2,82	3,84 3,04 5,41 3,68 4,02	1,93 2,37 3,34 2,14 1,52	3,11 3,04 3,07 5,30 3,01	0,24 0,28 1,55 0,75 0,39	FFP2
Individual mean leakage (%)	0,78	9,44	1,52	2,77	1,02	8,48	4,11	4,00	2,26	3,51	0,64	FFP2

Table 2.1: Results for Total Inward Leakage and individual mean

Results from one test subjects were excluded as they could not be satisfactorily fitted with the mask. This subject was replaced by two new test subjects. Therefore, this report contains results from eleven test subjects.

### § 8.6 Flammability

Flammability	Pass/fail
Mask (AR)	P
Mask (TC)	P

Table 3: Results for flammability

### § 8.7 Carbon dioxide content of the inhalation air

Carbon dioxide content of the inhalation air	Measurement (%)	Pass/fail
Requirements (mbar)	≤1	
FIT F248 (AR)	0,45 0,43 0,42	P

Table 4: Results from carbon dioxide content of the inhalation air

## § 8.9 Breathing Resistance

Classification	Maximum permitted resistance (mbar)		
	Inhalation		Exhalation
	30 l/min	95 l/min	160 l/min
FFP1	0,6	2,1	3,0
FFP2	0,7	2,4	3,0
FFP3	1,0	3,0	3,0

Table 5: Requirements for Breathing Resistance

Breathing Resistance	Inhalation, 30 l/min (mbar)	Inhalation, 95 l/min (mbar)	Exhalation, 160 l/min (mbar)	Class/fail
FIT F248 (AR)	0,45	1,60	2,50	FFP1
	0,55	1,85	2,80	
	0,50	1,55	2,45	
FIT F248 (SW)	0,50	1,65	2,60	FFP1
	0,55	1,60	2,45	
	0,55	1,65	2,60	
M FIT F248 (TC)	0,50	1,55	2,50	FFP1
	0,50	1,50	2,45	
	0,50	1,50	2,45	

Table 5.1: Breathing Resistance

### § 8.11 Penetration of filter material

Classification	Maximum penetration of test aerosol	
	Sodium Chloride test 95 l/min % max	Paraffin oil test 95 l/min % max
FFP1	20	20
FFP2	6	6
FFP3	1	1

Table 6: Requirements in accordance with EN 149:2001 + A1:2009

Sample	Result (%)	Class/fail	Aerosol
FIT F248 (AR)	0,08	FFP3	Sodium chloride, 95 l/min
	0,08		
	0,09		
FIT F248 (SW)	4,08	FFP2	
	0,08		
	0,07		
FIT F248 (MS-TC)	0,20	FFP3	
	0,11		
	0,12		

Table 6.1: Penetration of filter material: Initial penetration NaCl

Sample	Result (%)	Class/fail	Aerosol
FIT F248 (AR)	0,25	FFP3	Paraffin oil 95 l/min
	0,18		
	0,24		
FIT F248 (SW)	0,25	FFP3	
	0,39		
	0,59		
FIT F248 (MS-TC)	0,51	FFP2	
	0,65		
	1,02		

Table 6.2: Penetration of filter material: Initial penetration Paraffin oil

Sample	Result (%)	Class/fail	Aerosol
FIT F248 (MS-TC)	0,20	FFP3	Sodium chloride, 95 l/min
	0,11		
	0,12		
FIT F248 (MS-TC)	4,83	FFP2	Paraffin oil, 95 l/min
	4,18		
	5,98		

Table 6.3: Penetration of filter material: Maximum penetration during exposure

*Information not part of the accredited report: this report replaces report 120-32122, Revision made to change Paraffin oil results and conclusion. Due to the large variation in the results is was agreed to do a re-test of the masks with 3 different masks from the same shipment. These results make the masks comply with the requirements of FFP2 EN 149:2001 + A1:2009.*

**Conclusion:**

The mask complies with the requirements of EN 149:2001 + A1:2009 classification FFP2 for the tests performed in this report. Please note that a retest was done for the Paraffin oil test due large variation in the results from the first test, this resulted I a change of classification from FFP1 to FFP2.

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**Photos of device:**



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