



### TEST REPORT

**LABEL**  
Laboratório de Ensaios Elétricos

**Report nº:** 20.09.465.096  
**Date:** 30-06-2020  
**Page nº:** 1/9

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Laboratory Technician (2)

**VERIFICATION:** João Luz Costa  
Tânia Farinha

**JOB:** Deputy of the Technical Manager (1)  
Technical Manager (2)

**TECHNICAL APPROVAL:** João Luz Costa  
Tânia Farinha

**JOB:** Deputy of the Technical Manager (1)  
Technical Manager (2)

**STANDARD/SPECIFICATION:**

This report is based in the following standards/specifications:

- EN 14683:2019 – Medical Face masks – Requirements and test methods
- Internal Procedure based on standard EN 13274-7 – Respiratory Protective Devices – Methods of Test – Part 7: Determination of particle filter penetration

**TYPE OF APPLIANCES:** MÁSCARAS

**MANUFACTURER:** BORFASHION- INDUSTRIAS DE BORDADOS UNIPESSOAL LDA

**TRADEMARK:** BORFASHION- INDUSTRIAS DE BORDADOS UNIPESSOAL LDA

**TYPE/MODEL REF.:** EQUI187/20/ SPECIAL ONE MASK **SERIAL Nº / BATCH Nº** N/A

**TESTS DEMANDED BY:** BORFASHION- INDUSTRIAS DE BORDADOS UNIPESSOAL LDA  
**DATE:** Junho 2020

**CUSTOMER ADDRESS:** RUA DA BEIRA 149 ARMAZEM B  
4835-485 NESPEREIRA  
Guimarães

**DATE OF RECEPTION OF SAMPLES:** 04-06-2020

**BEGIN OF TESTS:** 06-06-2020

**END OF TESTS:** 23-06-2020

**REMARKS:** The measurements with “#” are not in the scope of the accreditation of the laboratory.

**NOTES:** The results of this report are only referred to the products submitted to the tests. This report can only be reproduced in its totally.

- (1) – Environmental tests
- (2) – Breathability and filtration performance test

<b>APPROVED:</b> 	<b>ELABORATED</b> 	<b>VERIFIED:</b> 
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IMPRESSO Nº 215\_0-UK

## 1 SCOPE

The purpose of this test report is to assess the compliance criteria of facemask filters, in terms of breathability and particles filtration performance.

## 2 IDENTIFICATION

### 2.1 Identification

In this section of the report are presented the technical specifications and pictures of the tested samples.

Manufacturer	BORFASHION- INDUSTRIAS DE BORDADOS UNIPessoal LDA
Type of appliance	Máscaras
Reference	SPECIAL ONE MASK
Serial number	N/A
Number of samples	6

### 2.2 Pictures



Figure 1: Facemask



## TEST REPORT

Report n°: 20.09.465.096  
Date: 30-06-2020  
Page n°: 3/9

### 3 CONCLUSION

According results Facemask cumply the following requirements for level 2.

Limits:

Diferencial Pressure  $\leq 40 \text{ Pa/cm}^2$

Filtration Efficiency (3  $\mu\text{m}$ )  $\geq 90\%$

### 4 TESTS PERFORMED BY THE LABORATORY

The following test sequence was performed:

CLAUSE	TEST
5.1	Breathability test before conditioning (#)
5.2	Determination of the filtration before conditioning (#)
5.3	Environmental conditioning
5.4	Breathability test after conditioning (#)
5.5	Determination of the filtration efficency after conditioning (#)
5.6	Breathability test after 4 hours of use (#)
5.7	Determination of the filtration after 4 hours of use (#)
5.8	Domestic Wash (#)
5.9	Breathability test after 20 washes (#)
5.10	Determination of the filtration after 20 washes (#)



## TEST REPORT

Report n°: 20.09.465.096  
Date: 30-06-2020  
Page n°: 4/9

### 5 TEST RESULTS

#### 5.1 Breathability test before conditioning (#)

The samples were subjected to breathability test, according standard EN 14683:2019, in following conditions:

- Temperature: 20,4 °C;
- Humidity: 58 % RH;
- Airflow: 8 L/min
- Number of samples: 5

	Results (Pa/cm <sup>2</sup> )
Sample 1	29,2
Sample 2	34,3
Sample 3	35,6
Sample 4	34,6
Sample 5	32,8
Final result (Pa/cm <sup>2</sup> )	33,3

#### 5.2 Determination of the filtration efficiency before conditioning (#)

The samples were subjected to filtration test, according internal method based on the standard EN 13274-7:2008, in following conditions:

- Temperature: 21,1 °C;
- Humidity: 59 % RH;
- Airflow: 1 L/min
- Number of samples: 4
- Test aerosol 1: 3,007 µm
- Aerosol concentration: 2 mg/m<sup>3</sup>
- Measurement uncertainty: 9%

Particle size (µm)	Efficiency (%)
3,007	90 %

IMPRESSO N° 215\_0-UK

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### 5.3 Environmental conditioning

#### 5.3.1 Test Conditions

The samples were subjected to an environmental conditioning in accordance to the IEC 60068-2-78 standard, with the following conditions:

- Temperature: 21 °C;
- Humidity: 85 % RH;
- Duration: 4 hours;

After the test, the samples were subjected to a breathability test.

#### 5.3.2 Pictures

In this section of the test report are presented pictures of the samples inside the environmental chamber for the test.



Figure 2: Facemask

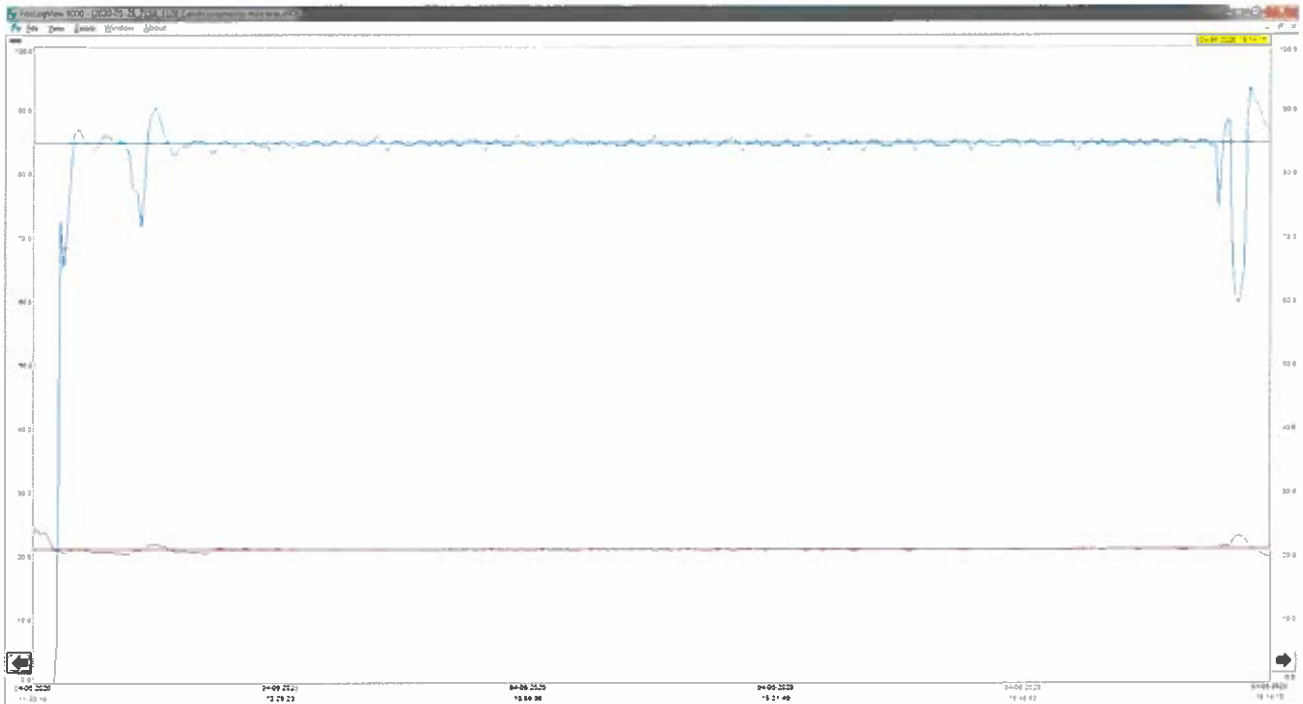


## TEST REPORT

Report n°: 20.09.465.096  
Date: 30-06-2020  
Page n°: 6/9

### 5.3.3 Data recorded during the test

#### Temperature and humidity log



### 5.4 Breathability test after conditioning (#)

The samples were subjected to breathability test, according standard EN 14683:2019, in following conditions:

- Temperature: 21,8°C;
- Humidity: 68 % RH;
- Airflow: 8 L/min

	Results (Pa/cm <sup>2</sup> )
Sample 1	28,8
Sample 2	28,7
Sample 3	31,7
Sample 4	32,9
Sample 5	29,9
Final result (Pa/cm <sup>2</sup> )	30,4

IMPRESSO N° 215\_0-UK

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## TEST REPORT

Report n°: 20.09.465.096  
Date: 30-06-2020  
Page n°: 7/9

### 5.5 Determination of the filtration efficiency after conditioning (#)

The samples were subjected to filtration test, according internal method based on the standard EN 13274-7:2008, in following conditions:

- Temperature: 24,1 °C;
- Humidity: 61 % RH;
- Airflow: 1 L/min
- Number of samples: 4
- Test aerosol 1: 3,007 µm
- Aerosol concentration: 2 mg/m<sup>3</sup>
- Measurement uncertainty: 9%

Particle size (µm)	Efficiency (%)
3,007	91 %

### 5.6 Breathability test after 4 hours of use (#)

The samples were subjected to breathability test, according standard EN 14683:2019, in following conditions:

- Temperature: 21,1 °C;
- Humidity: 60 % RH;
- Airflow: 8 L/min

	Results (Pa/cm <sup>2</sup> )
Sample 1	34,8
Sample 2	34,3
Sample 3	37,2
Sample 4	35,6
Sample 5	36,3
Final result (Pa/cm <sup>2</sup> )	35,6

IMPRESSO N° 215\_0-UK

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## TEST REPORT

Report n°: 20.09.465.096  
Date: 30-06-2020  
Page n°: 8/9

### 5.7 Determination of the filtration after 4 hours of use (#)

The samples were subjected to filtration test, according internal method based on the standard EN 13274-7:2008, in following conditions:

- Temperature: 24,7 °C;
- Humidity: 63 % RH;
- Airflow: 1 L/min
- Number of samples: 4
- Test aerosol 1: 3,007 µm
- Aerosol concentration: 2 mg/m<sup>3</sup>
- Measurement uncertainty: 9%

Dimensão de partícula (µm)	Efficiency (%)
3,007	91%

### 5.8 Domestic Wash (#)

The samples were submitted to the following conditions:

- Washing machine: Typo 1
- Temperature: 60 °C
- Dry mode: Suspension
- Detergent: Normal
- Number of cycles: 20

### 5.9 Breathability test after 20 washes (#)

The samples were submitted to the breathability test, according to EN 14683: 2019, on the following conditions:

- Temperature: 22,8 °C;
- Humidity: 61 % RH;
- Airflow: 8 L/min

	Results(Pa/cm <sup>2</sup> )
Sample 1	38,2
Sample 2	38,3
Sample 3	38,3
Sample 4	39,8
Sample 5	39,9
Final result (Pa/cm <sup>2</sup> )	38,9

IMPRESSO N° 215\_0-UK

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## TEST REPORT

Report n°: 20.09.465.096  
Date: 30-06-2020  
Page n°: 9/9

### 5.10 Determination of the filtration after 20 washes (#)

The samples were subjected to filtration test, according internal method based on the standard EN 13274-7:2008, in following conditions:

Temperature: 22,8 °C;  
Humidity: 61 % RH;  
Airflow: 1 L/min  
Number of samples: 4  
Test aerosol 1: 3,007 µm  
Aerosol concentration: 2 mg/m<sup>3</sup>  
Measurement uncertainty: 9%

Particle size (µm)	Efficiency (%)
3,007	93 %

The following equipments was used in the performance of the tests:

- Climatic Chamber ID 1129;
- Thermohygobarometer with ID n.º LT 168, traceable to Labmetro;
- Flowmeter with ID n.º LA 035, traceable to Labmetro;
- Flowmeter with ID n.º Dis.Mas., traceable to Labmetro;
- Standard nº 4203A, Lote nº220055, traceable to NIST;
- Differential Pressure Meter with ID n.º QCP027, traceable to Labmetro.

END OF REPORT

IMPRESSO N° 215\_0-UK

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## DECLARATION OF CONFORMITY

Tânia Farinha, technical manager for the Chemical Metrology Laboratory at ISQ, declares to the due effect that the validation process of "Mask intended for use within the scope of COVID-19, relative to BORFASHION- INDUSTRIAS DE BORDADOS UNIPessoal LDA producer of the article with the reference SPECIAL ONE MASK, complies with the technical specifications issued by the Ministérios da Saúde e da Economia e Transição Digital, through the tutored bodies DGS (Direção-Geral da Saúde), Infarmed (Autoridade Nacional do Medicamento e Produtos de Saúde), ASAE (Autoridade de Segurança Alimentar e Económica), e IPQ (Instituto Português da Qualidade).

It further states that the report No.  
Corresponds to process n.º  
20.09.465.096 ISQ.



Date: 10/07/2020



Tânia Farinha

Signature

