



REPORT NO: R2847i2



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REPORT

On the testing of

Transparent Face Masks to the Technical specification

<https://www.gov.uk/government/publications/technical-specifications-for-personal-protective-equipment-ppe/transparent-face-mask-technical-specification>

Using the methods in EN14683:2019+AC:2019

Documented in house methods:

M0121 BR, M0122 SP, M0124 MC, M0125 BFE



Report Prepared by:

Anthony Hanson



Identification

Mask Description: Blue three ply foldable with ear loops and clear plastic mouth area
 Mask size: 17.5 by 9.5cm
 Manufacturer: Anhui Rongda Medical Equipment Co Ltd
 Batch number: Not specified
 4ward Sample No: 2847
 Customer reference: Email TAD/PS 110221
 Date received: 04/03/2021

Test Summary

	M1	M2	M3	M4	M5	Threshold	Result
Bacterial filtration efficiency (BFE), [%] 5.2.2	99.99	99.99	99.99	99.99	99.99	≥ 98	Pass
Breathability 5.2.3 (differential pressure) average of 5 areas/mask [Pa/cm ²]	27.26	26.07	29.51	26.53	26.68	< 60	Pass
Splash resistance pressure 5.2.4 [kPa]	30 of 32 masks passed at 16kPa					≥ 29 @16kPa	Pass

Test thresholds in line with a type IIR mask

Deviations from the test method

Whilst it is not possible to test impervious sections of the mask to enable full compliance with EN 14683 for a Type IIR for BFE and breathability, the Transparent Mask Technical Specification provides alternative methods. The alternative methods used in this report are as follows:

For BFE:

A combination of the filter area and transparent area were tested together, to assess the combined filtration efficiency, this is achieved by placing adjacent areas over the test apparatus orifice, with approximately half of each material covering the orifice, and the join/seam running through the centre.

For Breathability:

Only Permeable sections of the mask tested.

The Transparent Mask Technical Specification prohibits masks complying with that specification from being labelled as Type IIR masks."

Test Details

The Face Masks were tested as received from the customer.

Testing of the Transparent Face Masks was carried out to the following sections of EN 14683:2019+AC:2019

Bacterial Filtration Efficiency Section 5.2.2 (Modified test surface)

Test area: 49 cm²
 Exposed face: Inside
 Test flow rate: 28.3L/min
 Sample size: Full mask expanded (> 10x10cm)
 Mean plate counts
 Positive controls: 3475 cfu
 Negative control 0 cfu

Sample pre-conditioning: >4h @ 21±5°C 85±5%RH

BFE for each test specimen shown in summary table.

Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk < 5%.

Breathability Section 5.2.3 (modified)

Only Permeable sections of the mask tested

Test area: 4.9±0.4 cm²
 Test quantity: 5 masks
 Test positions: 1 centre, 4 spanning out from the centre
 Test flow rate: 8L/min
 Sample pre-conditioning: >4h @ 21±5°C 85±5%RH

		Mask1	Mask2	Mask3	Mask4	Mask5
Differential pressure [Pa/cm ²]	1	28.86	26.76	27.91	26.38	28.10
	2	24.46	20.26	32.49	23.89	23.51
	3	28.29	28.86	32.49	20.83	27.52
	4	28.86	26.76	25.42	30.58	26.57
	5	25.80	27.71	29.24	30.96	27.71
	Average	27.26	26.07	29.51	26.53	26.68

Pass - The measured values were observed in tolerance at the points tested. The specific false accept risk < 5%.

Splash Resistance Section 5.2.4

The test was carried out in accordance with ISO 22609:2004

Centre of mask targeted

Conditioned for $>4\text{h}$ at $21\pm5\text{ }^{\circ}\text{C}$ $85\pm5\text{ \% RH}$

Tested at $21\pm5\text{ }^{\circ}\text{C}$ $85\pm10\text{ \% RH}$

No targeting plate was used

32 masks tested

30 masks Passed

Minimum of 29 Passes required

Pass - The Test passed the requirement AND had a conformance probability, $p_c > 95\text{ \%}$ for test conditions (Conditioning and test temperature and RH, synthetic blood surface tension and spray velocity)

Date of testing: 05 - 15/03/2021

These results relate only to the samples tested

Work carried out and recorded by the following personnel:

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Work approved by the following personnel:

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Anthony Hanson
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Change log:
Amended in line with Transparent Face Masks Technical specification