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Report For:	Canada Masq Corporation 4-10 Brodie Drive Richmond Hill, Ontario L4B 3K8 Phone: 647 628 9615 Email: anthonyz@canadamasq.com	**Laboratory #:** **Report Date:** **Received Date:**	880257-A2-22 January 27, 2022 January 17, 2022
Attention:	Anthony Zhao		
Specimen:	A2: CA-N95 Flat-Fold Respirator "FF-WHT" X-Small		

TEST REPORT

One specimen, consisting of respirators was submitted to CMTL for assessment of mechanical headstrap strength, particulate filter efficiency and airflow resistance to evaluate acceptability with Health Canada performance criteria for filtering face piece respirators (Date published: 2020-08-25, Date modified: 2021-02-02), 42 CFR Part 84 Subpart K, Sections 171(d), 172 and 174 respectively, and CSA Z94.4.1:21 Sections 5.9.1, 6.3.2 and 6.3.3.2.

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Per _____
Authorized By Stephen Brown

Per _____
Technician, Derek Wild

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Laboratory #880257-A2-22
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Requirement for Filtering Facepiece Respirators per
Health Canada National Standard Specifications for Respirators during COVID-19:
Guidance for Canadian Manufacturers (Date published: 2020-08-25, Date modified: 2021-02-02),
42 CFR Part 84 Subpart K, Sections 171(d), 172 and 174 and
CSA Z94.4.1:21 Sections 5.9.1, 6.3.2 and 6.3.3.2

Specimen A2: CA-N95 Flat-Fold Respirator – "FF-WHT" X-Small (Children's Masks)

Characteristic	Barrier	Summary Results
Particulate Filter Efficiency (%)	≥95	**Pass***
Airflow (Inhalation) Resistance, mmH_2O (Pa)	≤35 (343)	**Pass***
Airflow (Exhalation) Resistance, mmH_2O (Pa)	≤25 (245)	**Pass***
Mechanical Headstrap Strength, Observations and Proof Load (Newtons per attachment point)	≥10	**Pass**

***Note:** Results for Particle Filter Efficiency and Airflow Resistance (Inhalation and Exhalation) for the X-Small Children's Masks (Specimen A2) are represented by the results for the Large Adult Masks (Specimen A1) from Laboratory Number 880257-A1-22.

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PARTICULATE FILTRATION EFFICIENCY

Twenty-five submitted specimens were evaluated for particulate filtration efficiency in accordance with TEB-APR-STP-0059 test procedure to evaluate acceptability with Health Canada and 42 CFR 84 Subpart K requirements for N95 respirators, as well as CSA Z94.4.1:21 Section 6.3.3.2.

Twenty of the specimens were conditioned (C) within a CSZ environmental control chamber for 25±1 hour at a 85±5% relative humidity and 38°C ± 2.5°C, then tested within 10 hours of extraction from the chamber as indicated in NIOSH standard procedure TEB-APR-STP-0059. The remaining five specimens were unconditioned (U) and tested without pre-conditioning as per CSA Z94.4.1:21 Section 6.3.3.2.2.1.

The particulate filter efficiency was performed on a TSI 8130A automated filter tester, and challenged under unidirectional airflow at 85 L/min ± 4 L/min with an aerosol of sodium chloride (NaCl) particles. The particles were generated by an aerosol generator and neutralized to their Boltzmann equilibrium state. The particles were considered to have an average count median diameter of 0.075 ± 0.020 micrometers and a geometric standard deviation not exceeding 1.86.

RESULTS

Specimen #	Conditioned	Flow Rate	Initial Filter Resistance (mmH_2O)	Maximum Allowable Leakage (%)	Initial Leakage (%)	Maximum Leakage (%)	Particulate Filtration Efficiency (%)	Requirement (≥95%)	
								Result	Overall Result
1	C	85	10.6	5.00	1.466	1.466	98.5	**Pass**	**Pass**
2	C	85	10.3	5.00	1.511	1.511	98.5	**Pass**	
3	C	85	10.6	5.00	1.556	1.556	98.4	**Pass**	
4	C	85	11.4	5.00	1.609	1.609	98.4	**Pass**	
5	C	85	11.8	5.00	1.623	1.623	98.4	**Pass**	
6	C	85	11.8	5.00	1.702	1.702	98.3	**Pass**	
7	C	85	10.7	5.00	1.551	1.551	98.4	**Pass**	
8	C	85	12.5	5.00	1.938	1.938	98.1	**Pass**	
9	C	85	11.7	5.00	1.747	1.747	98.3	**Pass**	
10	C	85	12.4	5.00	1.794	1.794	98.2	**Pass**	
11	C	85	12.5	5.00	1.774	1.774	98.2	**Pass**	
12	C	85	12.4	5.00	1.821	1.821	98.2	**Pass**	
13	C	85	12.0	5.00	1.640	1.640	98.4	**Pass**	
14	C	85	14.4	5.00	2.128	2.128	97.9	**Pass**	
15	C	85	11.3	5.00	1.839	1.839	98.2	**Pass**	
16	C	85	11.8	5.00	1.636	1.636	98.4	**Pass**	
17	C	85	13.9	5.00	2.191	2.191	97.8	**Pass**	
18	C	85	11.3	5.00	1.528	1.528	98.5	**Pass**	
19	C	85	12.1	5.00	1.750	1.750	98.3	**Pass**	
20	C	85	10.9	5.00	1.439	1.439	98.6	**Pass**	
21	U	85	10.8	5.00	1.417	1.417	98.6	**Pass**	
22	U	85	10.5	5.00	1.351	1.351	98.6	**Pass**	
23	U	85	10.5	5.00	1.343	1.343	98.7	**Pass**	
24	U	85	10.3	5.00	1.247	1.247	98.8	**Pass**	
25	U	85	10.1	5.00	1.492	1.492	98.5	**Pass**	

Note: As per Health Canada and 42 CFR Part 84 Subpart K, section 174(i) the minimum efficiency for each of the 20 filters, and 25 filters for CSA Z94.4.1:21, will be determined and recorded and must be equal to or greater than 95% filtration efficiency.

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AIRFLOW (INHALATION) RESISTANCE

Twenty submitted specimens were evaluated for airflow (inhalation) resistance based on TEB-APR-STP-0007 using a TSI 8130A automated filter tester considered by NIOSH to be an acceptable pressure drop measurement.

Tests were performed with the salt generator turned-off under no loading conditions. Using hot-melt glue the filtering facepiece respirators were sealed onto flat plates with joint for connection to the resistance apparatus for measurements of pressure drop.

RESULTS

Specimen #	Maximum Allowable Resistance (mmH_2O) Inhalation	Maximum Allowable Resistance (Pa) Inhalation	Actual Resistance (mmH_2O) Inhalation	Actual Resistance (Pa) Inhalation	Requirement (≤35 mmH_2O) (≤343 Pa)	
					Result	Overall Result
1	35	343	10.3	101.0	**Pass**	**Pass**
2	35	343	9.9	97.1	**Pass**	
3	35	343	9.9	97.1	**Pass**	
4	35	343	10.3	101.0	**Pass**	
5	35	343	10.3	101.0	**Pass**	
6	35	343	10.0	98.1	**Pass**	
7	35	343	9.8	96.1	**Pass**	
8	35	343	10.7	104.9	**Pass**	
9	35	343	10.2	100.0	**Pass**	
10	35	343	10.7	104.9	**Pass**	
11	35	343	10.1	99.0	**Pass**	
12	35	343	10.7	104.9	**Pass**	
13	35	343	10.0	98.1	**Pass**	
14	35	343	9.9	97.1	**Pass**	
15	35	343	10.3	101.0	**Pass**	
16	35	343	9.9	97.1	**Pass**	
17	35	343	10.6	104.0	**Pass**	
18	35	343	9.8	96.1	**Pass**	
19	35	343	10.5	103.0	**Pass**	
20	35	343	10.2	100.0	**Pass**	

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AIRFLOW (EXHALATION) RESISTANCE*

Twenty submitted specimens were evaluated for airflow (exhalation) resistance based on TEB-APR-STP-0003 using a TSI 8130A automated filter tester considered by NIOSH to be an acceptable pressure drop measurement.

Tests were performed with the salt generator turned-off under no loading conditions. Using hot-melt glue the filtering facepiece respirators were sealed onto flat plates, and mounted in reverse, with joint for connection to the resistance apparatus for measurements of pressure drop.

RESULTS

Specimen #	Maximum Allowable Resistance (mmH_2O) Exhalation	Maximum Allowable Resistance (Pa) Exhalation	Actual Resistance (mmH_2O) Exhalation	Actual Resistance (Pa) Exhalation	Requirement (≤25 mmH_2O) (≤245 Pa)	
					Result	Overall Result
1	25	245	9.9	97.1	**Pass**	**Pass**
2	25	245	9.6	94.1	**Pass**	
3	25	245	9.7	95.1	**Pass**	
4	25	245	10.2	100.0	**Pass**	
5	25	245	10.1	99.0	**Pass**	
6	25	245	9.8	96.1	**Pass**	
7	25	245	9.6	94.1	**Pass**	
8	25	245	10.2	100.0	**Pass**	
9	25	245	9.7	95.1	**Pass**	
10	25	245	10.2	100.0	**Pass**	
11	25	245	9.3	91.2	**Pass**	
12	25	245	9.4	92.2	**Pass**	
13	25	245	9.2	90.2	**Pass**	
14	25	245	8.8	86.3	**Pass**	
15	25	245	9.3	91.2	**Pass**	
16	25	245	9.3	91.2	**Pass**	
17	25	245	9.7	95.1	**Pass**	
18	25	245	9.4	92.2	**Pass**	
19	25	245	9.3	91.2	**Pass**	
20	25	245	9.3	91.2	**Pass**	

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MECHANICAL HEADSTRAP STRENGTH (Specimen A2 - X-Small Children's Masks)

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Report For:	Cambridge Materials Testing Limited 6991 Millcreek Drive, Unit 13 MISSISSAUGA, Ontario L5N 6B9	**Laboratory #:** **Report Date:** **Received Date:**	**880723-22 (Revised)** January 27, 2022 January 17, 2022
Attention:	Derek Wild	**Customer P.O.#:**	
Specimen:	CMTL Mississauga Lab # 880257, Customer: Canada Masq Corporation, Identified as A2 – CA-N95 Flat-Fold Respirator "FF-WHT" X-Small		

PROOF LOAD TEST REPORT

Ten submitted specimens were subjected to proof load testing in accordance with Health Canada National Standard Specifications for Respirators during COVID-19: Guidance for Canadian Manufacturers, Date Published: February 2, 2021, CSA Z94.4.1:21, Section 5.9.1 and Federal Regulation 42 CFR 84 – Subpart K, Section 171(d). Testing was performed by donning the mask body on to a head form. A proof load of 10 N per attachment point was then applied to the elastomeric strap for 10 seconds. The proof load was then removed and the specimen was examined for failure. Testing machine was operated in accordance with ASTM A370-21 paragraph 8 with a test speed of 200mm/minute.

Revision: Retested the submitted test specimens
Test report revised on January 27, 2022.

RESULTS

Specimen	Observations
1	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
2	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
3	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
4	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
5	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
6	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
7	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
8	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
9	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.
10	There was no evidence of breakage, tearing, separation from the point of fixation to the respirator body, permanent deformation or other obvious loss of function in the securing mechanism.

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Per Randi Lee
Randi Lee — *Authorized By*

Per Matthew Liska
Matthew Liska — *Technician*