

Test Report 8363627.

Handan Hengyong Protective &
Clean


Products Co Ltd

Introduction.

This report has been prepared by P Waller and relates to the activity detailed below:

Job/Registration Details	Client Details
Job number: 8363627 Job type: Testing Samples Submitted Start Date: 10/08/2015 Test type: Type Sample ID: 10156740 Registration: CE 70730 Scheme: PPE CE Pt10 Protocol: PP 123 Scheme Mgr: K Demetriou Quality system: ISO 9001:2008	Handan Hengyong Protective & Clean Products Co Ltd C-1-901, 9 Yuhua West Road Shijiazhuang Hebei 050000 China

The report has been approved for issue by M Thompson – Testing Team Manager, PPE

Approved For Issue	
	Issue Date: 20 August 2015

Objectives.

This is limited testing to only certain clauses or sub-clauses of the standard but these have been followed in full, as defined.

Product Scope.

HY9330- FFP3- Filtering half mask.

Report Summary.

The samples were received on 28 July and the testing was started on 04 August 2015.

The samples submitted complied with the requirements of the limited test work conducted.

Test Samples.

Sample Id	ER Number	Description
1	10156740	HY9330-filtering half mask - unvalved

Description of Test Samples.

Sample Description
HY9930 FFP3 Filtering half mask to protect against particles.

Test Requirements.

BS EN 149:2001 - A1 + Results Table - Respiratory protective devices. Filtering half masks to protect against particles. Requirements, testing, marking

Clause	Requirements
7	Requirements
7.9	Leakage
7.9.1	Total inward leakage
7.12	Carbon dioxide content of inhalation air
7.17	Clogging
7.17.2	Breathing resistance
7.17.3	Penetration of filter material
Results table	Actual Test Results <i>See Tables A – F, BS EN 149:2001 + A1:2009</i>

Glossary of Terms.

PASS: Complies. Tested by BSI engineers at BSI laboratories.

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Test Results

CLAUSE

7.9 Leakage

7.9.1 Total inward leakage

The laboratory tests shall indicate that the particle filtering half mask can be used by the wearer to protect with high probability against the potential hazard to be expected.

The total inward leakage consists of three components: face seal leakage, exhalation valve leakage (if exhalation valve fitted) and filter penetration.

For particle filtering half masks fitted in accordance with the manufacturer’s information, at least 46 out of the 50 individual exercise results (i.e. 10 subjects x 5 exercises) for total inward leakage shall be not greater than 5% for FFP3

and, in addition, at least 8 out of the 10 individual wearer arithmetic means for the total inward leakage shall be not greater than 2% for FFP3.

Test in accordance with clause 8.5 of the standard.

See Table A and Appendix A for Test Panel Data

Pass - See Table A and Appendix A for Test Panel Data

Table A: Total Inward Leakage Results

Test Panel Member	Pre-test condition	Sample No	A	B	C	D	E	Average (%)
			Walking (%)	Walking with head side to side (%)	Walking with head up & down (%)	Walking and talking (%)	Walking (%)	
MT2	AR	1	0.6708	0.8005	2.3157	0.4433	0.5787	0.9618
DT1	AR	2	5.3937	12.8622	2.9587	0.1870	1.5464	4.5896
FM1	AR	3	0.3459	0.2889	0.2120	0.1090	0.0637	0.2039
MM1	AR	4	0.5057	0.8241	0.5320	0.1333	0.3811	0.4752
MY1	AR	5	0.2781	0.6140	4.4434	0.4967	2.9154	1.7495
MM2	TC	6	0.4772	2.5409	1.1903	0.3408	0.5894	1.0277
NM1	TC	7	0.3222	0.6442	3.0402	0.0937	0.4356	0.9072
OR1	TC	8	1.9498	2.3595	1.6610	0.7178	1.2719	1.5920
PN1	TC	9	0.3366	0.4328	1.9126	0.0548	0.1357	0.5745
RP1	TC	10	2.9883	5.0377	9.4587	0.0478	0.0587	3.5182

Test Results (Continued).

7.12 Carbon dioxide content of inhalation air

The carbon dioxide content of the inhalation air (dead space) shall not exceed an average of 1.0% (by volume).

Test in accordance with clause 8.7 of the standard.

Pass – See Table B

Table B: Carbon dioxide content of the inhalation air

Sample No	Pre-test condition	Maximum Specified CO ₂ (%)	Actual CO ₂ (%)
11	AR	1.0	0.69
12	AR	1.0	0.69
13	AR	1.0	0.79

Test Results (Continued).

CLAUSE

7.17 Clogging

7.17.1 General

For single shift use devices, the clogging test is an optional test. For re-usable devices the test is mandatory.

Devices designed to be resistant to clogging, shown by a slow increase of breathing resistance when loaded with dust, shall be subjected to the treatment described in clause 8.10 of the standard.

The specified breathing resistances shall not be exceeded before the required dust load of 833 mg/h/m³ is reached.

Pass

7.17.2 Breathing Resistance

7.17.2.1 Valved particle filtering half masks

After clogging the inhalation resistances shall not exceed

- FFP3: 7 mbar at 95 l/min continuous flow;

The exhalation resistance shall not exceed 3 mbar at 160 l/min continuous flow.

Test in accordance with clause 8.9 of the standard.

N/Ap – Not a design feature of this product

7.17.2.2 Valveless particle filtering half masks

After clogging the inhalation and exhalation resistances shall not exceed

- FFP3: 5 mbar at 95 l/min continuous flow.

Test in accordance with clause 8.9 of the standard.

Pass – See Tables C and D

Table C: Inhalation resistance - post clogging

Sample No	Pre-test condition	Continuous flow through filter (l/min)	Maximum specified inhalation resistance (mbar)	Actual inhalation resistance (mbar)	Result
14	AR	95	5	1.48	Pass
15	TC	95	5	1.38	Pass
16	TC	95	5	1.50	Pass

Table D: Exhalation resistance - post clogging
measured in five orientations - worst case recorded

Sample No	Pre-test condition	Continuous flow through filter (l/min)	Maximum specified exhalation resistance (mbar)	Actual exhalation resistance (mbar)	Result
14	AR	95	5	1.41	Pass
15	TC	95	5	1.33	Pass
16	TC	95	5	1.45	Pass

Test Results (Continued).

CLAUSE

7.17 Clogging (Continued)

7.17.3 Penetration of filter material

All types (valved and valveless) of particle filtering half masks claimed to meet the clogging requirement shall also meet the requirements given in clause 7.9.2 of the standard, for the penetration test according to EN 13274-7, after the clogging treatment.

Test in accordance with clause 8.11 of the standard using EN 13274-7: 2008

Pass – See Tables E and F

Table E: Sodium chloride penetration - post clogging

Sample No	Pre-test condition	Flowrate through filter (l/min)	Max spec. penetration (%)	Actual penetration (%)	Result
14	AR	95	1	0.288993	Pass
15	TC	95	1	0.110716	Pass
16	TC	95	1	0.752972	Pass

Table F: Paraffin oil penetration - post clogging

Sample No	Pre-test condition	Flowrate through filter (l/min)	Max spec. penetration (%)	Actual penetration (%)	Result
14	AR	95	1	0.500	Pass
15	TC	95	1	0.195	Pass
16	TC	95	1	0.900	Pass

Appendix A – Test Panel Data.

Facial Dimensions (mm)						
Initials	Length of face	Width of face	Face depth	Width of mouth	Head Circumference	Sex
NM1	115	138	120	53	565	M
MM1	120	146	130	54	575	M
MM2	124	150	144	50	580	M
FM1	126	143	144	50	560	M
PN1	115	140	113	52	550	M
RP1	119	132	122	51	556	M
OR1	118	133	105	51	550	F
DT1	120	144	130	60	560	M
MT2	129	150	130	51	570	M
MY1	105	133	115	50	550	F

Note: All persons were clean shaven

End of Report