Test Report



Report No

255/4941766

This Report consists of 11 pages

Licence/Cert. No

CE 70730

Client

Handan Hengyong Protective and Clean Products Company Limited 300 Gongnong Road Shijiazhuang Hebei Republic of China 050051

Authority & date

BSI Product Service: Service Management Order No 4941766 Dated 11 January 2007. Equipment Record No 10083262

Items tested

Model: Thirty (30) off Handan Hengyong HY9320 FFP1/2 Foldable Masks

Specification

Limited testing to BS EN 149:2001 Respiratory protective devices -Filtering half masks to protect against particles

Results

See Assessment Summary

Prepared by

Test Engineer J Veasey

A Harding

Test Engineer

Authorized by

D Mackie

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Issue Date

22 January 2007

Conditions of issue

This Test Report is issued subject to the conditions stated in current issue of PS082 'General conditions relating to acceptance of testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Managing Director, BSI Product Services, who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.

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BSI PRODUCT SERVICES BS EN 149:2001

SPECIFICATION:- Limited testing to BS EN 149:2001 Respiratory protective devices -

Filtering half masks to protect against particles

(see Assessment Summary for details)

CLIENT/MANUFACTURER: Handan Hengyong Protective and Clean Products Company Limited

MODEL: HY9320 FFP1/2 Foldable Masks

NUMBER OF SAMPLES & SIZES: 15 tested of 30 submitted for test

ER NO:10083262 DATE RECEIVED: 11January 2006

DATE STARTED: 11 January 2006

MANUFACTURER'S CLAIMED EQUIPMENT PERFORMANCE:-

Filter classification: FFP1/2

INTRODUCTION

The samples detailed above were submitted by the Client for a limited test programme.

This Report should be read in conjunction with the Specifications referenced above

Unless specified all testing was performed in accordance with EN 149:2001

ASSESSMENT SUMMARY

An Assessment Summary is presented on page 3.

BSI PRODUCT SERVICES BS EN 149:2001

ASSESSMENT SUMMARY

CLAUSE	NO AND TITLE	ASSESSMENT	LOCATION
7.1	REQUIREMENTS General	Pass(4)	Page 4
7.2	Nominal values and tolerances	His	Page 4
7.3	Visual inspection	N/As (1)	· JIII
7.4	Packaging	N/As (1)	HANDARIS
7.5	Material	N/As (1)	-
7.6	Cleaning and disinfecting	N/As (1)	HIM
7.7 HAT	Practical performance	N/As (1)	HANDAM
7.8	Finish of parts	Pass	Page 5
7.9 7.9.1 A	Leakage Total inward leakage	HAN/As (1)	HANDANH
7.9.2	Penetration of filter material	Pass	Pages 6 & 7
7.10	Compatibility with skin	N/As (1)	HYANH
7.11 HAT	Flammability	N/As (1)	HAND
7.12	Carbon dioxide content of inhalation air		Page 8
7.13	Head harness	N/As (1)	NOANH
7.14	Field of vision	N/As (1)	HAR
7.15	Exhalation valve(s)	N/As (1)	-
7.16	Breathing resistance	Pass	Pages 9 to 11
7.17	Clogging	N/Ap (3)	HILL
7.18	Demountable parts	N/Ap (2)	- 111
9 HAT	Marking HANDAN HANDAN	N/As (1)	HANDANI
10	Information to be supplied by the manufacturer	N/As (1)	-

N/As: Not Assessed N/Ap: Not Applicable

(1) Not required by BSI Product Certification.(2) Not applicable.

(2) Not applicable to this product.

(3) Option not claimed

(3) Option not claimed

(4) All requirements requested by Product Certification Passed

BSI PRODUCT SERVICES BS EN 149:2001

EXAMINATION AND TEST (CONTINUED)

Model Type :- HY9320 FFP1/2 Foldable Masks

CLAUSE	REQUIREMENT	ASSESSMENT
7 HAM	REQUIREMENTS	HAND
7.1	General	
TI.	In all tests all samples shall meet the requirements.	Pass (2)
7.2	Nominal values and tolerances	
HANT	Unless otherwise specified, the values stated in this European Standard are expressed as nominal values. Except for temperature limits, values, which are not stated as maxima or minima, shall be subject to a tolerance of $\pm 5\%$. Unless otherwise specified, the ambient temperature for testing shall be $(16-32)$ °C, and the temperature limits shall be subject to an accuracy of ± 1 °C.	HANDANI
HAL		HD
7.3	Visual Inspection The visual inspection shall also include the marking and the	N/As (1)
HANT	information supplied by the manufacturer.	HANDAN
7.4 HANI	Particle filtering half masks shall be offered for sale packaged in such a way that they are protected against mechanical damage and contamination before use. Test in accordance with clause 8.2 of the standard.	N/As (1)
7.5 HANI	Material Materials used are suitable to withstand handling and wear over the period for which the particle filtering half mask is designed to be used.	HANDANI N/As (1)
	After undergoing the conditioning described in clause 8.3.1 of the standard none of the particle filtering half masks shall have suffered mechanical failure of the facepiece or straps.	H N/As (1)
HANI	When conditioned in accordance with clauses 8.3.1 and 8.3.2 the particle filtering half mask shall not collapse.	N/As (1)
HANT	Any material from the filter media released by the air flow through the filter shall not constitute a hazard or nuisance for the wearer. Test in accordance with clause 8.2 of the standard.	N/As (1)

N/As: Not Assessed N/Ap: Not Applicable

(1) Not required by BSI Product Certification.

(2) All requirements requested by Product Certification Passed HANDANH HANDAN

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BSI PRODUCT SERVICES BS EN 149-2004 BS EN 149:2001

EXAMINATION AND TEST (CONTINUED)

NDANHY Model Type :- HY9320 FFP1/2 Foldable Masks

CLAUSE	REQUIREMENT	ASSESSMENT
7.6 HAN	Cleaning and disinfecting If the particle filtering half mask is designed for more than a single shift (i.e. not designed for single use only) the materials used shall withstand the cleaning and disinfecting agents recommended by the manufacturer. Test in accordance with clauses 8.4 and 8.5 of the standard.	N/Ap (2)
7.7 HAN	Practical performance The particle filtering half mask shall undergo practical performance tests under realistic conditions. These general tests serve the purpose of checking the equipment for imperfections that cannot be determined by the tests described elsewhere in this standard.	N/As (1) HANDANH
Y HAN	Where practical performance tests show the apparatus has imperfections related to wearer's acceptance, the test house shall provide full details of those parts of the practical performance tests which revealed these imperfections. Test in accordance with clause 8.4 of the standard.	HANDANH
7.8 HAN	Finish of parts Parts of the device likely to come into contact with the wearer shall have no sharp edges or burrs. Test in accordance with clause 8.2 of the standard.	Pass

N/As: Not Assessed N/Ap: Not Applicable

(1) Not required by BSI Product Certification.

Not applicable to this product.

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BSI PRODUCT SERVICES
BS EN 149:2001
EXAMINATION AND TEST (CONTINUED)

Model Type :- HY9320 FFP1/2 Foldable Masks

CLA	AUSE	REQUIRE	ASSESSMENT					
7.9 7.9.	HAN	Leakage (HANDANII					
IX X	HAN	The penetrone the received, 3 clause 8.3 clause 8.3	See Table B					
N	HAN	accordance with clause 8.3.3. Test in accordance with clause 8.11 of the standard. Table B. Maximum sodium chloride penetration @ 95 l/min						
Y	MAY	Sample	Pre-test condition	Flow through filter (I/min)	Max Specified Penetration	Actual Penetration	DANH	
				(1/111111)	(%)	(%)	HAND	
	HV.	1	AR	95	6.0	0.6289	Pass	
	HIV	1 2	AR AR			1	Pass Pass	
Y	HD.	1 2		95	6.0	0.6289		
Y	HAN		AR	95 95	6.0 6.0	0.6289 0.0949	Pass	
Y	HAN	DAI3	AR AR	95 95 95	6.0 6.0 6.0	0.6289 0.0949 0.2545	Pass Pass	
Y	HAN	4	AR AR AR TC	95 95 95 95	6.0 6.0 6.0 6.0	0.6289 0.0949 0.2545 0.3933	Pass Pass Pass	
Y Y	HAN	4 5	AR AR TC TC	95 95 95 95 95	6.0 6.0 6.0 6.0 6.0	0.6289 0.0949 0.2545 0.3933 0.5713	Pass Pass Pass Pass	
Y Y	HAN	4 5 6	AR AR TC TC TC	95 95 95 95 95 95	6.0 6.0 6.0 6.0 6.0 6.0	0.6289 0.0949 0.2545 0.3933 0.5713 0.0985	Pass Pass Pass Pass Pass Pass	
X	HAN	4 5 6 7	AR AR TC TC TC SW	95 95 95 95 95 95 95	6.0 6.0 6.0 6.0 6.0 6.0	0.6289 0.0949 0.2545 0.3933 0.5713 0.0985 0.0390	Pass Pass Pass Pass Pass Pass Pass	
XXXX	HAN	4 5 6 7 8	AR AR TC TC TC SW	95 95 95 95 95 95 95 95	6.0 6.0 6.0 6.0 6.0 6.0 6.0	0.6289 0.0949 0.2545 0.3933 0.5713 0.0985 0.0390 0.2666	Pass Pass Pass Pass Pass Pass Pass Pass	
N N	HAN	3 4 5 6 7 8 9	AR AR TC TC TC SW SW SW	95 95 95 95 95 95 95 95	6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0	0.6289 0.0949 0.2545 0.3933 0.5713 0.0985 0.0390 0.2666 0.0205	Pass Pass Pass Pass Pass Pass Pass Pass	

AR: As Received SW: Simulated Wear

TC: Temperature Conditioned
MS: Mechanical strength

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BSI PRODUCT SERVICES DANHY BS EN 149:2001 **EXAMINATION AND TEST (CONTINUED)**

Mo	del Ty	pe :- HY932	0 FFP1/2 F	oldable Masks	DANHY	ANDANHY	HANDANH
CL	AUSE	REQUIRE	MENT	437		7	ASSESSMENT
7.9 7.9.2 AY		Leakage (Penetration The penetr meet the re particle filte received, 3 clause 8.3 clause 8.3 accordance 8.11 of the	continued) n of filter maration of the equirements ering half marating half marating after temp. 2, 3 after the equirements after th	aterial (Continue filter of the parts of Table 1 of the asks shall be to erature condition the simulated we ter the test for rise 8.3.3. Test in	ed) ticle filtering hale the standard. A rested for each a coining in accordance with accordan	total of 12 erosol: 3 as nce with described in ngth in th clause	HANDANH HANDANH See Table C HANDANH
YE	HA	Sample	Pre-test condition	Flow through filter (I/min)	Max Specified Penetration (%)	Actual Penetration (%)	HANDANH
	HAL	1	AR	95	6.0	0.25	Pass
		2	AR	95	6.0	0.20	Pass
Y		3 11	AR	VH 95	6.0	0.26	Pass
		4	H TC	95 A	6.0	0.60	Pass
		5	TC	95	6.0	0.55	Pass
137		6	TC	95	6.0	0.23	Pass
11		DAZHI	SW	95	6.0	0.15	Pass
	HAD	8	H SW	95 HA	6.0 H	0.50	Pass
		9	SW	95	6.0	0.11	Pass
W		10	MS	95	6.0	0.40	Pass
1		DATT	MSDA	95	DA 6.0	0.70	Pass

AR: As Received NHY
SW: Simulatority

TC: Temperature Conditioned MS: Mechanical strength

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HANDANHY BSI PRODUCT SERVICES BS EN 149:2001 **EXAMINATION AND TEST (CONTINUED)**

Model Type :- HY9320 FFP1/2 Foldable Masks

CLAUSE	REQUIREME	NT THY	YHIY	MATTER	ASSESSMENT
7.11 AN	Flammability	ANDAM	HANDAN	ANDAN	N/As (1)
7.12 HANI	Carbon diox The carbon d shall not exce accordance v	See Table D			
TIANT	DANII	ANDANII.	tent of the inhalation air	NDANII	HANDANH
	Sample No	Pre-test condition	Maximum Specified CO ₂ (%)	Actual CO ₂ (%)	His
	13	AR	- ND 1.0	0.74	Pass
	14	AR	1.0	0.85	Pass
	15	AR	1.0	0.76	Pass
HANI	3 as received with clause 8 accordance w 8.9 of the star A total of 12 v as received, 3	See Tables E, F and G HANDAN See Tables			
HANT	clause 8.3.2, with clause 8. with clause 8. standard.	E, F and G			
7.13 HANI	Head harnes The head har half mask car	HANDANP			
HANI	sufficiently rol position and b	bust to hold the be capable of m for the device.	or self-adjusting and sha particle filtering half ma aintaining total inward I Test in accordance with	ask firmly in eakage	N/Ap (1)

N/Ap: Not Applicable N/As: Not Assessed

(1) Not required by BSI Product Certification.

(2) Not application.

(2) Not applicable to this product.

EXAMINATION AND TEST (CONTINUED)

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HANDANHY BSI PRODUCT SERVICES BS EN 149:2001 **EXAMINATION AND TEST (CONTINUED)**

CLAUSE	REQUIREMENT	ASSESSMENT
7.14 HAN	Field of vision The field of vision is acceptable if determined so in practical performance tests. Test in accordance with clause 8.4.	HN/Ap (1)
7.15 HAN	Exhalation valves A particle filtering half mask may have one or more exhalation valve(s), which shall function correctly in all orientations. Test in accordance with clauses 8.2 and 8.9.1	HANDANI N/Ap (1)
HAN	If an exhalation valve is provided it shall be protected against, or be resistant to, dirt and mechanical damage and may be shrouded or may include any other device that may be necessary for the particle filtering half mask to comply with 7.9. Test in accordance with clause 8.2 of the standard.	HANDANI
Y	Exhalation valve(s), if fitted, shall continue to operate correctly after a continuous exhalation flow of 300 l/min over a period of 30 s. Test in accordance with clause 8.3.4.	HANDANI
Y	When the exhalation valve housing is attached to the faceblank, it shall withstand axially a tensile force of 10 N applied for 10 seconds. Test in accordance with clause 8.8.	NDANI
7.16	Breathing resistance	
Y	The breathing resistances apply to valved and valveless particle filtering half masks and shall meet the requirements of Table 2 of the standard.	HANDANE
	A total of 9 valveless filtering half masks shall be tested: 3 as received, 3 after temperature conditioning in accordance	(See Tables E, F and G)
HAN	with clause 8.3.2, and 3 after the test for simulated wearing in accordance with clause 8.3.1. Test in accordance with clause 8.9 of the standard.	HANDAMI
HAN	A total of 12 valved particle filtering half masks shall be tested: 3 as received, 3 after temperature conditioning in accordance with clause 8.3.2, 3 after the test for simulated wearing in accordance with clause 8.3.1, and 3 after the flow conditioning	(See Tables E, F and G)
HAN	in accordance with clause 8.3.4. Test in accordance with clause 8.9 of the standard.	

N/Ap: Not Applicable

(1) Not applicable to this product. HANDA

BSI PRODUCT SERVICES BS EN 149:2001

EXAMINATION AND TEST (CONTINUED)

Model Type :- HY9320 FFP1/2 Foldable Masks

CLAUSE	REQUIRE	MENT	Y		DANHY	ASSESSMENT
7.16	Breathing	g resistance (c	ontinued)	HAN	DIS	HANDI
X XX	Table E: I	nhalation resista	ance @ 30 l/m	in HY	DANHY	NDANHY
HANT	Sample No ANHY	Pre-test condition	Continuous flow (l/min)	Maximum specified inhalation resistance (mbar)	Actual inhalation resistance (mbar)	HANDANHY
1.2	1	AR	30	0.6	0.33	Pass
7	2	AR	30	0.6	0.35	Pass
I VIT	A 3	AR	30 DA	0.6	0.33	Pass
HAN	4	TC	30	0.6	0.30	Pass
	5	TC	30	0.6	0.33	Pass
7	6	TC TH	30	0.6	0.32	Pass
IVANT	7	SW	30 DA	0.6	0.38	Pass
HALL	8	SW	30	0.6	0.33	Pass
				-		Desc
9 SW 30 0.6 0.34 Table F: Inhalation resistance @ 95 I/min					Pass	
HANE	ANHY	DANH	Y	MHA		HANDANHY
HANT	ANHY	DANH	Y	MHA		HANDANHY HANDANHY
HANE	Table F: I	nhalation resista	ance @ 95 l/n Continuous flow	Maximum specified inhalation resistance	Actual inhalation resistance	HANDANHY
HANE	Table F: I	Pre-test condition	Continuous flow (I/min)	Maximum specified inhalation resistance (mbar)	Actual inhalation resistance (mbar)	HANDANHY
HAND	Table F: I	Pre-test condition	Continuous flow (I/min)	Maximum specified inhalation resistance (mbar) 2.1	Actual inhalation resistance (mbar)	HANDANHY HANDANHY
HANE HANE	Table F: I Sample No	Pre-test condition AR AR	Continuous flow (I/min)	Maximum specified inhalation resistance (mbar) 2.1 2.1	Actual inhalation resistance (mbar) 0.99 1.04	HANDANHY HANDANHY Pass HY
(Table F: I Sample No	Pre-test condition AR AR AR	Continuous flow (I/min) 95 95 95	Maximum specified inhalation resistance (mbar) 2.1 2.1 2.1	Actual inhalation resistance (mbar) 0.99 1.04 0.99	Pass HY AND Pass Pass
HAND HAND HAND	Table F: I Sample No	Pre-test condition AR AR AR TC	Continuous flow (I/min) 95 95 95 95	Maximum specified inhalation resistance (mbar) 2.1 2.1 2.1 2.1	Actual inhalation resistance (mbar) 0.99 1.04 0.99 0.91	Pass HY AN Pass Pass Pass Pass
(Table F: I Sample No	Pre-test condition AR AR AR TC TC	Continuous flow (I/min) 95 95 95 95 95	Maximum specified inhalation resistance (mbar) 2.1 2.1 2.1 2.1 2.1	Actual inhalation resistance (mbar) 0.99 1.04 0.99 0.91 0.98	Pass HY Pass Pass Pass Pass Pass Pass
(Table F: I Sample No	Pre-test condition AR AR AR TC TC TC	Continuous flow (I/min) 95 95 95 95 95 95	Maximum specified inhalation resistance (mbar) 2.1 2.1 2.1 2.1 2.1 2.1	Actual inhalation resistance (mbar) 0.99 1.04 0.99 0.91 0.98 0.99	Pass Pass Pass Pass Pass Pass Pass Pass

AR: As Received SW: Simulated Wear TC: Temperature Conditioned

FT: Flow tested at 300 l/min for 30 seconds

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ANH BSI PRODUCT SERVICES DANHY BS EN 149:2001

EXAMINATION AND TEST (CONTINUED)

Model Type :- HY9320 FFP1/2 Foldable Masks

MH	CLAUSE	REQUIRE	MENT	Y	NHY	NDANHY	ASSESSMENT
	7.16	Breathing	resistance (c	ontinued)	H^{p}	THE STATE OF THE S	HAM
VHY	HANI		Exhalation resis			NDANHY	HANDANHY
NHY		Sample	Pre-test condition H	Continuous flow (I/min)	Maximum specified exhalation resistance (mbar)	Actual exhalation resistance (mbar)	HANDANHY
JHY		XHY	AR	160	3.0	1.53	Pass
Ari	IVALE)A 2	AR	160 DA	3.0	1.58	Pass
		3	AR	160	3.0	1.52	Pass
		4	TC	160	3.0	1.50	Pass
JHY		15	TCNH	160	VH 3.0	1.63	Pass
.	HANI	6	TANTO	160	3.0	1.59	Pass
		7	SW	160	3.0	1.75	Pass
		8	SW	160	3.0	1.64	Pass
THO		1 9	SW	160	3.0	1.71	Pass
_	HAM		HAMP	HAND	HA	MD	HAND

HANDA

AR: As Received

SW: Simulated Wear

TC: Temperature Conditioned

HANDANHY FT: Flow tested at 300 l/min for 30 seconds