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TEST REPORT:
EN 14387:2004 +A1:2008
Respiratory protective devices — Gas filter(s) and combined filter(s) — Requirements, testing, marking

Product:	**Gas filter**
Report no:	**2020-W-075**
Client:	**CCQS Certification Services Limited**
Model (s):	**XPF03E**
Date of sample receive:	**2020.09.23**
Date(s) of tests:	**2020.09.24-2020.11.16**

DESCRIPTION OF SAMPLES

General Information	**Filter type**	**Main Components**
	E1	Grey trapezoid plastic filter
Manufacturer	Xiamen Chengchuang Automotive Materials Co., Ltd.	
Manufacturer Address	Room 406 Office, No. 2 Xiamei Road, Xinyang Street, Haicang District, Xiamen, Fujian, China	

Signed: 陈倬为

Issued: 2020.11.17

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Authorized Signatory, Lab Director

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Conditions:

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Test Results

6 Requirements

6.3 Design **Pass**

The filter shall be sufficiently robust to withstand the rough usage it is likely to receive in service.

No part of the filter likely to be in contact with the wearer shall have sharp edges or burrs.

The filter shall be designed to ensure its full function in any orientation.

6.4 Materials **Pass**

The filter shall be made of suitable material to withstand normal usage and exposures to those temperatures, humidity and corrosive environments that are likely to be encountered. Internally it shall withstand corrosion by the filtering media.

Any material of the filter media or any gaseous products that may be released by the air flow through the filter shall not be known to constitute a hazard or nuisance for the wearer.

Note. The laboratory deems that the samples satisfy the requirements in this clause based on the obtained performed type test results.

6.5 Mass **Pass[1]**

The maximum mass of filter(s) designated to be used directly connected to a half mask is 300 g.

The maximum mass of filter(s) designated to be used directly connected to a full face mask is 500 g.

Note1. Refer to Annex A for test data.

6.6 Connection **Pass**

The connection between filter(s) and facepiece or other device(s) with which it is intended to be used shall be robust and leaktight.

The connection between filter and facepiece may be achieved by a permanent or special connector or a screw thread including a thread conforming to EN 148-1.

Threads conforming to EN 148-2 or EN 148-3 shall not be used.

If the filter is designated to be used on a multiple filter facepiece or has any other thread, it shall not be possible to connect it to a thread conforming to EN 148-1, EN 148-2 or EN 148-3.

The filter shall be readily replaceable without use of special tools and shall be designed or marked to prevent incorrect assembly.

The particle filter of combined filters shall be on the influent side of the gas filter.

Note. The laboratory deems that the samples satisfy the requirements in this clause based on the obtained performed type test results.

6.7 Multiple filters **Pass**

Where respirators are designed to use more than one filter (i.e. multiple filter device), through which the flow is proportioned, all requirements given in this European Standard are to be met by the complete set of filters (e.g. the total mass of a filter set designated to be used directly connected to a half mask shall not exceed 300 g).

If, however, it is possible that a single filter of a multiple filter device may be used alone, then the requirements of the full flow rate for the tests, as stated in this European standard, shall be met.

In the information supplied by the manufacturer all necessary information on how to use multiple filters shall be given.

Note. The laboratory deems that the samples satisfy the requirements in this clause based on the obtained performed type test results.

6.8 Packaging **Pass**

Filters shall be offered for sale packaged in such a way that they are protected against mechanical damage or visible contamination before use.

Where appropriate, filters shall be factory sealed to protect the filter media against environmental influences in such a way that the breaking of the factory sealing can be identified.

Note. The laboratory deems that the samples satisfy the requirements in this clause based on the obtained performed type test results.

6.9 Mechanical strength (M.S.) **Pass**

Filters shall be subjected to the mechanical strength test when required by the relevant clauses of this standard.

After this treatment the filters shall show no mechanical defect and shall meet the requirement of the relevant clauses.

Note. The laboratory deems that the samples satisfy the requirements in this clause based on the obtained performed type test results.

6.10 Temperature conditioning (T.C.) **Pass**

Filters shall be subjected to the temperature conditioning test when required by the relevant clauses of this standard.

Note. The laboratory deems that the samples satisfy the requirements in this clause based on the obtained performed type test results.

6.11 Breathing resistance **Pass[2]**

The resistance imposed by filter(s) to the flow of air shall be as low as possible and in no case exceed the values shown in Table 1.

For multi type gas filters with mixed classes and/or types, the value corresponding to the highest shall not be exceeded.

Type E1: 15L/min: ≤1.0mbar ; 47.5L/min: ≤4.0mbar

Note2. Refer to Annex A for test data.

6.12 Gas capacity **Pass[3]**

Filters shall meet the appropriate requirements of Table 2, Table 3 and Table 4.

Type and class	Test gas	Minimum breakthrough time at test condition	Test gas concentration in air		Breakthrough concentration
		min	% by volume	mg/l	ml/m³
E1	SO_2	20	0.1	2.7	5

Flow condition : Single filter:30L/min; Multiple filters: 15L/min

Note3. Refer to Annex A for test data.

8 Marking **N/A**

8.1 General

The marking shall be as clearly visible and as durable as possible.

Sub-assemblies and components with considerable bearing on safety shall be marked so that they can be identified.

If sub-assemblies with considerable bearing on safety are too small to be marked, the information shall be given in the information supplied by the manufacturer.

8.2 Filters

a) the appropriate filter type, class and colour code, in accordance with Table 5.

Filter marking: _____/_____

Filter colour code: __/__

b) a mark showing if the filter is for a multiple filter device;

c) the number of this European Standard, i.e. EN 14387;

d) the year and month of end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 2 where the code “yyyy/mm“ indicates the year and month;

e) the manufacturer, supplier or importer shall be identified by name, trademark, or other means of identification;

f) the sentence "See information supplied by the manufacturer" at least in the official language(s) of the country of destination, or the appropriate pictogram as shown in Figure 2;

g) manufacturers" model designation;

h) for AX filter, the sentence “For single use only” at least in the official language(s) of the country of destination, or an appropriate pictogram;

8.3 Filter package

The filter package shall be marked at least with the following information:
a) year and month of the end of shelf life. The end of shelf life may be informed by a pictogram as shown in Figure 2 where the code ‘yyyy/mm’ indicated the year and month.
b) manufacturers model designation;
c) manufacturer's recommended conditions of storage (at least the temperature and humidity) or equivalent pictogram as shown in Figure 2.

9 Information supplied by the manufacturer N/A

On the delivery, the information supplied by the manufacturer:
a) shall accompany every smallest commercially available package;
b) shall be at least in the official language(s) of the country of destination;
c) of the filters shall contain all information necessary for trained and qualified persons on:
application/limitations;
give type-identifying marking to ensure that the filter can be identified;
checks prior to use;
fitting;
describe how the filter(s) is inserted in the equipment for which it is (they are) designed and how that equipment is identified;
use;
maintenance;
storage of the filter;
disposal.
d) shall be clear and comprehensible. If helpful, illustrations, part numbers, marking should be added;
e) shall include warnings against problems likely to be encountered, for example:
hazards of oxygen deficiency;
hazards of oxygen and oxygen-enriched air;
the use of gas or combined respiratory protective devices, specially those which are not directly connected to the face piece during work with open flames or liquid metal droplets may cause serious risk due to the ignition of the charcoal containing filters which may generate acute levels of toxic substances;
air quality;
use of equipment in explosive atmosphere;
storage under conditions other than those specified by the manufacturer may affect the shelf life;
guidance as to use of filter(s) with both full face mask or half mask, or not with half mask as appropriate (weight of filter);
f) explanation of the used symbols shall be given;
g) name and address of manufacturer and/or his authorised representative shall be given;
h) for filters marked "NR", a warning shall be given that the combined filter shall not be used for more than one shift.

End of Test Results

Annex A: Summarization of Test Data

Clause	Result				Assessment
6.5	Mass (g)	1+2	189		Pass
		3+4	192		
		5+6	188		
		7+8	190		
6.11	Breathing resistance (mbar)	Mechanical strength			Pass
			Orientation	15L/min	47.5L/min
		1	A	0.2	0.6
			B	0.2	0.7
			C	0.2	0.7
			D	0.2	0.6
			E	0.2	0.7
		2	A	0.2	0.7
			B	0.2	0.6
			C	0.2	0.7
			D	0.2	0.7
			E	0.2	0.7
		Mechanical strength and temperature conditioned			
		3	A	0.2	0.7
			B	0.2	0.6
			C	0.2	0.6
			D	0.2	0.7
			E	0.2	0.7
		4	A	0.2	0.7
			B	0.2	0.7
			C	0.2	0.7
			D	0.2	0.6
			E	0.2	0.7
		Note: A: upright and facing directly ahead B: facing vertically upwards C: facing vertically downwards D:lying on the left side E: lying on the right side			

Clause	Result				Assessment
6.12	Gas capacity	Filter type: E Filter class: 1 Requirement ⩾20 min Test gas: SO_2 Test gas concentration in air : 2.7 mg/L Flow conditioning: Multiple filters: 15 L/min Mechanical strength	Breakthrough time		Pass
			5	No breakthrough after 25 min	
			6	No breakthrough after 25 min	
			7	No breakthrough after 25 min	

End of Annex A

Annex B: Photo of samples

End of Test Report