



TEST REPORT

on behalf of

Shanghai DaAo Safety Protection Equipment Co.,Ltd.

Security cabinet of Compressed gas bottle

Security cabinet of Inflammable liquid

Prepared For: Shanghai DaAo Safety Protection Equipment Co.,Ltd.
No.8559,Chuannanfeng Rd,Situan Town,Fengxian
District,Shanghai,China

Prepared By: Shanghai Global Testing Services Co., Ltd.
No. 968 Meilong West Road, Minhang District, Shanghai,
China.

Report No.: TPSH17050210777
Date of Test: May 02, 2017 to May 10, 2017
Date of Report: May 10, 2017



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Date: May 10, 2017

The following sample(s) was/were submitted and identified by the client as:

Applicant	: Shanghai DaAo Safety Protection Equipment Co.,Ltd.
Address	: No.8559,Chuannanfeng Rd,Situan Town,Fengxian District,Shanghai,China
Sample Description	: Security cabinet of Compressed gas bottle Security cabinet of Inflammable liquid
Model No.	: 4 gallon, 12 gallon, 30 gallon, 45 gallon, 60 gallon, 90 gallon
Sample Receiving	: May 02, 2017
Testing Period	: May 02, 2017 to May 10, 2017
Testing Performed	: SELECTED TEST(S) AS REQUESTED BY APPLICANT
Test Requested	: BS EN 14470-1:2004 : BS EN 14470-2:2006
Test Result(s)	: FOR FUTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)
Conclusion	: THE SUBMITTED SAMPLE(S) MET THE TEST



Authorized Signature

For and on behalf of

Shanghai Global Testing Services Co., Ltd

Shi Lei/Kevin

General Manger -GTS/SHO

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BS EN 14470-1:2004			
Clause	Requirement + Test	Result – Remark	Verdict
5	Construction		-
5.1	Fire protection		-
	In the case of a fire, the cabinet shall assure that, for at least 15 min, the contents of the cabinet do not contribute any additional risks or spread of fire		P
5.2	Doors		
5.2.1	The doors of the cabinet shall be fully self-closing from any position		N/A
	The closing time of the doors, from the time of door release, shall not exceed 20s. The time for closing from their completely open position or from the position given by a hold open feature shall be measured with a stopwatch at a temperature of (20±5)°C		
5.2.3	Doors and their surroundings shall be designed such that the risk of injuries by pinching is minimised. To minimise injuries by closure of the doors, the static force shall not exceed 100 N between the main closing edge and the counter closing edge.	After testing:89 N	P
5.2.4	It shall be possible to operate each door single-handedly		N/A
5.2.5	If the doors are lockable, the locking device shall not compromise the self-closing performance required in 5.2.1		P
5.3	The side and back walls of cabinet shall be the same thickness and comparable construction		P
5.4	Ventilation		
5.4.1	Cabinets shall be equipped with openings for inlet and exhaust air, enabling the connection of the cabinet to an exhaust air system.		P
	In a cabinet in which ventilation is taking place, with the doors closed, air exchange at a rate of at least 10 times the volumetric capacity of the cabinet		



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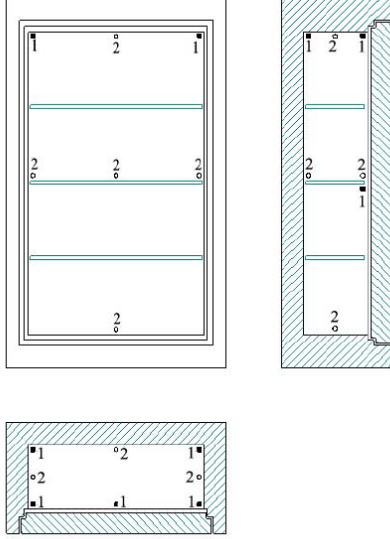
Date: May 10, 2017

BS EN 14470-1:2004			
Clause	Requirement + Test	Result – Remark	Verdict
	per hour shall take place, with a pressure drop not exceeding 150 Pa. The ventilation system shall maintain a lower pressure in the cabinet than that outside. The ventilation shall be effective immediately above the bottom tray of the cabinet.		
5.4.2	The ventilation openings for inlet and exhaust air shall close automatically when subjected to a temperature of (70 ± 10) °C.	Testing temperature 65°C	P
5.5	Shelves		
	The shelves and their fastenings shall be of non-absorbent material and shall carry the load specified in the user information to be supplied (see clause 7) without any damaging distortion at the testing temperature according to annex A. The shelves shall not hinder the automatic closure of the doors. This shall be tested by visual inspection.		P
5.6	Spill containment sump		
	A spill containment sump shall be installed underneath the lowest storage level. The sump shall be designed such that liquids spilled from higher shelves are collected in the sump. The sump shall have a minimum capacity of 10 % of the volume of all the containers stored in the cabinet, or at least 110 % of the volume of the largest single container, whichever is the greater. All spillages or condensation up to this volume shall be retained. This shall be tested by comparison with user information and, in case of doubt, by measurement of the sump capacity. The sump shall perform its function after the fire resistance test described in clause 6. This shall be verified by visual inspection after filling the sump with water.		P
6	Fire resistance		
	The fire resistance capability of the cabinet shall be investigated by a type test. This test is performed by heating the cabinet in a furnace according to the temperature-time curve described in 5.1.1 of EN 1363-1:1999 and measuring the temperature increase inside the cabinet. The cabinet shall then be classified as Type 15, 30, 60 or 90, according to the time for which the interior		P

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BS EN 14470-1:2004			
Clause	Requirement + Test	Result – Remark	Verdict
	<p>does not rise by more than 180 K, at any point of measurement, from a starting temperature of (20 ± 5) °C. The test is given in annex A.</p> 		
7	Information to be supplied		
	<p>The cabinet manufacturer shall supply with the cabinet a manual of information, which includes at least the following:</p> <ul style="list-style-type: none"> a) the maximum load capacity of each shelf (see 5.5) and of the whole cabinet; b) the maximum volume, in litres, of the largest single container that may be stored in the cabinet (see 5.6); c) the sump capacity, in litres; d) a warning stating that extreme caution should be exercised before opening a cabinet after a fire; e) a list of parts which have to be checked and / or replaced on a routine basis; f) instruction to the user to mark on the cabinet if the cabinet is to be operated without connection to an exhaust air system; g) instruction to the user to check that the connection to the ventilation system, if fitted, is correctly made, for example by using a smoke tube; h) notification to the user that, if forced ventilation is not connected, the 		P



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BS EN 14470-1:2004			
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	immediate area around the cabinet could become a hazardous zone; NOTE Attention is drawn to regulations in respect of ventilation, which will apply whether the cabinet has forced ventilation or not. i) instruction to the user not to use the sump for storage; j) recommendation to the user to undertake regular inspection and maintenance and recommendations for the maintenance intervals; k) the supplier's declaration of conformity or the certificate(s) of conformity from a test house.		
8	Marking and labeling		
	The following inscriptions shall be mounted on the front of the cabinet in a suitable and visible place: a) advice that the door(s) must remain closed when not in use; b) the appropriate warning sign for 'Caution: risk of fire' and the appropriate prohibition sign for 'Fire: open light and smoking', according to ISO 3864 (all Parts); c) the fire resistance capability, specified in minutes, e.g. Type 15, 30, 60 or 90; d) name and/or trademark of the manufacturer; e) model number and year of production; f) maximum volume of a single container, in relation to the sump capacity, to be stored in the cabinet;		P

Remark:

1. Test results are only responsible for sample(s) submitted by applicant.



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BS EN 14470-2:2006			
Clause	Requirement + Test	Result – Remark	Verdict
5	Construction		
5.1	Fire protection		
	The cabinet shall be designed and constructed to ensure that, in the event of a fire, the contents of the cabinet do not contribute any additional risks or spread the fire for at least 15 minutes.		P
5.2	Ventilation		
5.2.1	Cabinets shall be equipped with openings for inlet and exhaust air, which allows for connection of an exhaust air system to the cabinet. In a ventilated cabinet in which ventilation is taking place, with the doors closed, latched and locked, the following extraction rates shall apply: -when using flammable and fire supporting gas, at least 10 air changes of the cabinet's volume per hour. - when using toxic gas, at least 120 air changes of the cabinet's volume per hour. Under the above conditions the pressure drop shall not exceed 150 Pa. The ventilation system shall maintain a lower pressure in the cabinet than in the surrounding atmosphere. Ventilation shall take place on the top and bottom of the cabinet. Design of the air circulation system within the cabinet shall ensure adequate purging from minor leakage.		P
5.2.2	In the event of a fire, the inlet and exhaust vents shall close automatically.		P
5.3	Gas cylinder restraining		
	Within the cabinet a suitable system shall be installed to prevent gas cylinders from falling over. The system shall be suitable for the quantity and dimensions of cylinders, which can be used in accordance with the user's instruction manual.		P
5.4	Insertion and removal of pressurised gas cylinders		
	The cabinet shall be constructed so that cylinders can be inserted and removed as safely as possible with minimum manual effort.		P



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BS EN 14470-2:2006			
Clause	Requirement + Test	Result – Remark	Verdict
5.5	Installation of gas pipelines (for gas cylinders in use)		N/A
5.6	Installation of electric cables (where appropriate)		N/A
6	Fire resistance		
	The fire resistance of the cabinet for storing pressurised gas cylinders shall be determined by a type test. This type test is performed by heating the cabinet in a furnace according to the time-temperature curve described in clause 5.1.1 of EN 1363-1:1999 and measuring the temperature increase on the surface of an empty gas cylinder within the cabinet. The temperature increase on the surface of the cylinder valve spanner flat (see Figure A.1) shall not exceed 50 K. Test details are given in Annex A.		P
7	Information to be supplied		
	<ul style="list-style-type: none"> a) instructions for correct cabinet installation; b) maximum combined volumetric capacity of the gas cylinders stored within the cabinet; c) safety procedure instructions in the event of fire, particularly the minimum time, when after a fire, the doors can be safely opened; d) instructions concerning the effect of gas pipes passing through (penetration of) the walls and roof of the cabinet, particularly the potential of reduced fire resistance; e) instructions to correctly seal the unused gas pipe feeds through the cabinet (penetration to the cabinet's walls and roof); f) warning that storing corrosive gases will adversely affect the effectiveness of the inlet and exhaust closing mechanisms; g) instructions to check that installation of the ventilation system, if carried out, is correctly realised (for example by using a smoke tube); h) recommendation to undertake regular inspection and maintenance; i) supplier's declaration of conformity or the certificate(s) of conformity of a test house. 		P
8	Manufacturer's marking and labelling		



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BS EN 14470-2:2006			
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	a) fire resistance class, specified in minutes, e.g. Type G15, G30, G60 or G90; b) instruction that the door(s) shall be kept closed; c) safety sign in accordance with ISO 3864 as warning of pressurised gas cylinders; d) name and/or trademark of the manufacturer; e) model number, year of construction and, if appropriate, serial number; f) marking of the inlet and exhaust connections to differentiate between them; g) advice to read the user instruction manual.		P

Remark:

1. N/A denotes not applicable
2. Test results are only responsible for sample(s) submitted by applicant.

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Sample Photo(s)





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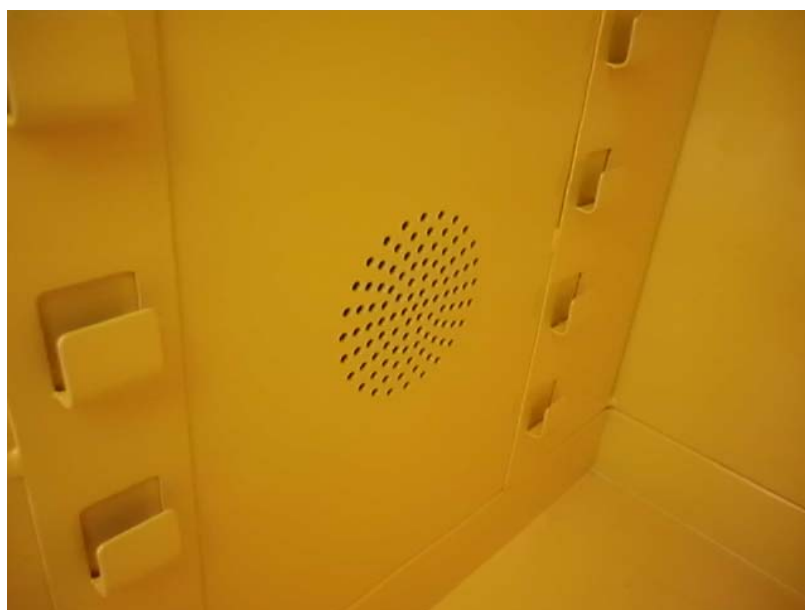




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*****End of Report*****