

## FUME CUPBOARD

### DESCRIPTION AND EXPLANATION OF COLOUR CODING AND ITS IMPLICATIONS

A copy of this information package can be found on the OH&S website along with all the test results at: <http://www.adelaide.edu.au/hr/ohs/fumeextract/>

#### INTRODUCTION

##### A. CURRENT CONTEXT

Every fume cupboard has recently been tested in accordance with the Australian Standard with varying degrees of compliance.

Property Services through their contractors are engaged in a programme of remediation to return the fume cupboards to the level required by the end users.

##### B. WHAT HAPPENS WHEN IT'S GREEN?

There is an ongoing test regime that calls for six monthly tests of each individual fume cupboard against the Australian Standard 2243:2001 Part 8 Fume Cupboards.

Fume cupboards that meet the requirements of the Standard will have a Green colour code applied at the completion of each testing.

#### 1. RESPONSIBILITIES

##### a. Property Services

- Have responsibility for the day-to-day maintenance, which is accessible through online Maintenance Service Requests.
- In the event of equipment failure Property Services will engage a contractor to address the issue and return the fume cupboard to full compliance.
- The management of the contract and contractors of testing of fume cupboards in accordance with the AS 2243:2001 Part 8.
- To ensure the contractor carries out testing of the fume cupboards on a six monthly basis.
- To make available the test results to end-users.
- The contract and the contractors of the remediation programme are also under the management of Property Services.

##### b. Chemical Fume Handling Equipment

Chemical Fume Handling Equipment is currently the contractor whose responsibility it is to conduct the six monthly testing of all the fume cupboards against the Australian Standard requirements.

##### c. School/Area

- The School/Area is responsible for the dissemination of information, training, instruction and supervision in the use of the fume cupboards within their particular area.
- They are also responsible for performing a risk assessment of the intended use of the fume cupboard that is required at any time that the colour code of the fume cupboard changes.
- The School/Area has the responsibility to ensure that the capability of the fume cupboard is not exceeded.

**d. Laboratory Supervisor**

- Is responsible for ensuring that the risk assessment of the intended use of the fume cupboard has been performed whenever the colour code of the fume cupboard changes.
- General housekeeping, training, instruction, use of the fume cupboard and the reporting to Property Services of Maintenance Requests are additional responsibilities of the Laboratory Supervisor.
- During the workplace safety inspection the laboratory supervisor should ensure that chemicals are not stored in the fume cupboard.

**e. OH&S Unit**

To draft policy and guidelines for the use of fume cupboards. Education in the use of fume cupboards and where-ever required are able to assist in the risk assessments of the fume cupboards.

**f. Operator/user.**

- Is primarily responsible to ensure that the fume cupboard category is applicable for their use and that they do not exceed the capability of the fume cupboard.
- To use the fume cupboard in a manner that optimises its performance.
- Must decontaminate and clean the internal area of the fume cupboard.
- Are responsible for minimising equipment and/or chemicals stored within the cupboard unless there has been an assessment showing a decline in the operation of the fume cupboard.

## **2. TERMINOLOGY**

(AS 2243:2001 Part 8).

**a. Fume cupboard:** - a partially enclosed workplace that

- a) is designed to prevent the spread of fume to operators and other personnel;
- b) is ventilated by an induced flow of air through a sash opening or working aperture that may be adjusted.
- c) dilutes the fumes, and
- d) by means of an exhaust system, provides for the safe and remote discharge of the fume outside the building
- e) allows use of appliances, flammable gases and chemicals in what may be dangerous processes.

**b. Fume hood:** is a device mounted over a workplace to receive or capture fumes. It may provide little or no enclosure for the workplace and is therefore unable to attain containment as high as a fume cupboard.

**c. Face velocity** is the velocity of the air passing through the working aperture measured in the plane of the sash.

**d. Sash** is the transparent safety screen in the working aperture of a fume cupboard, which can be positioned between the working chamber and the operator for protection, and which can be adjusted either vertically or horizontally to vary the size of the working aperture.

**e. Make up air** is the air needed to replace that exhausted from the room by laboratory fume cupboards and other exhaust devices.

**f. Hazard Management** is the process by which hazards are identified, assessed and controlled. In the area of fume cupboards, the fume cupboards are required to be assessed to see if they are suitable to be used for particular chemical processes.

**g. Fume scrubbers & Wash-down Facilities:** - Essential fittings for work with substances such as Perchloric acid and Hydrofluoric acid, and maybe desirable where highly corrosive substances

are in use or where there is problems with safe discharge of gaseous effluent. The scrubbing solution shall effectively scrub all fumes passing from the fume cupboard into the duct work. The wash down facility shall clean all concealed surfaces, especially behind any rear baffles.

### 3. TEST RESULTS

#### a. **Critical elements which results in a colour code change. (List)**

Critical elements (which can affect the worker), which will colour change from Green to Amber

- Electrical socket-outlets are not protected by RCD's and fitted with illuminated indicators
- Emergency isolator not present and does not have an alarm (which operates for 20 mins if power fails) under fault conditions.
- No automatic isolation in event of inadequate airflow has been provided.
- Lighting does not give 400 lux at work surface
- Face velocity falls to greater than  $0.2\text{ms}^{-1}$  but less than  $0.3\text{ms}^{-1}$

Critical elements (which can affect the worker), which will colour change from Green to Red

- Fire extinguisher is not mounted approximately 4m from fume cupboard
- Smoke test failed
- Insufficient makeup air
- Make up air disturbs the fume cupboard air flow
- Lighting is not isolated from working chamber
- Sash is not transparent and does not stay in place when positioned
- Face velocity falls to less than  $0.2\text{ms}^{-1}$
- Reverse flow of exhaust is prevented

Perchloric acid fume cupboards, the critical elements (which can affect the worker), which will colour change from Green to Red

- Scrubber pump and exhaust fan are not interlocked during scrubber operation
- Duct surfaces between fume cupboard and scrubber are not able to be inspected
- Spray pattern within scrubber can not be observed while in operation
- There are no wash down facility fitted behind the baffles
- Fume cupboard and supporting framework is constructed from timber

#### b. **Explanation of Compliance Report**

Each fume cupboard has a separate 8-paged test report.

Cover page (page 1)

Date of the test, the identification number, a photograph of the fume cupboard and lists the non-compliance upgrades the fume cupboard requires.

Test compliance certificate form FCT001-7 (page 2-8)

This gives specific data on the velocity, smoke test and results against the Australian Standards (refer to appendix A).

### 4. RISK ASSESSMENT PROCESS

The following risk assessment model has been reproduced with permission from Hibbs and Associates (2004) "The University of Adelaide Fume Cupboard Risk Assessment".

#### **Hazard Identification**

Chemicals used in fume cupboards are first categorised into a hazard category according to their inherent ability to cause adverse health effects. The criteria descriptors of the main three Hazard Categories detailed in Table 1 below can generally be found in risk phrases listed in the relevant section of Material Safety Data Sheet for the particular Hazardous Substance (or key toxic marker within a mixture).

TABLE 1 - HAZARD CATEGORY	
Hazard	Criteria
High	Substances ranging from carcinogenic, very corrosive, very toxic or sensitisers (eg. benzene, 25% Ammonia, 81% Ortho-Phosphoric Acid, HF, >2% Caustic). Also include substances that are toxic (eg. > 20% Methanol).
Medium	Substances that are harmful or irritant (eg. >20% Xylene, 0.5 - 2% Caustic).
Low	Substances that are not covered by the above criteria, but not restricted only to hazardous materials

### Estimation of Exposure to Substances in Specific Tasks or Jobs

The Hazardous Substance risk assessment process is task or process-based. The end users will determine the major processes or jobs in the work unit for the purpose of the risk assessment.

Factors that need to be considered in evaluating exposure potential relate to both the substance being handled (eg. quantity used, physical form, volatility, frequency of use, etc.) and the associated work activities (enclosure, current ventilation status, frequency of use, etc.). The potential exposure to a generic substance or process in a generic type of fume cupboard is estimated in accordance to Table 2.1 below:

TABLE 2.1 – POTENTIAL EXPOSURE CRITERIA			
Criteria	Score		
	1	10	100
(A) Quantity of substance used	< 1 g (ml)	1 – 100 g (ml)	> 100g (ml)
(B) Physical Characteristics of substance	Dense solids, non-volatile liquids, no skin absorption	Dusty solids, volatile liquids, low skin absorption	Gases, highly volatile liquids, aerosols, solutions that promote skin absorption
(C) Characteristics of operation, activity including frequency & duration of tasks	Predominantly enclosed system or inside working fume cupboard, low chance of mishap	Partially open system, fume cupboard >0.3 m/sec, relatively low chance of mishap	Fume cupboards with low face velocity (0.2-0.3 m/sec) &/or any operation where chance of mishap is medium or high

The approximate exposure to every substance can be estimated by applying the following formula:

## EXPOSURE POTENTIAL SCORE = A X B X C

TABLE 2.2 – APPROXIMATE EXPOSURE	
Exposure potential score = A x B x C	Exposure Potential Category
<1000	Low
1,000 to 10,000	Medium
> 10,000	High

### Estimation of Risk to Health

The risk ranking (from 1 to 5) for each substance used in the particular process or task is assigned according to Table 3 below:

TABLE 3 – RISK LEVEL			
Hazard Category	Exposure Potential Category		
	Low	Medium	High
High	4	4	5
Medium	1	2	3
Low	1	1	1

### Controls and Allocation to a Fume Cupboard Category

It is assumed that normal safety precautions (e.g. hand, eye or skin protection) associated with the handling of chemicals, are being implemented. High, medium or low priority is then assigned to the implementation of control measures according to the assessed level of risk. Where risk descriptors are high, moderate or low, certain colour-coded categories of fume cupboards may be acceptable for their use.

TABLE 4 - RISK LEVEL AND ALLOCATION TO FUME CUPBOARD CATEGORY			
Risk Descriptor	Risk Level	Action Priority	Acceptable Fume Cupboard Category for Use
High	4-5	High	Green Colour - Category G
Medium	3	Medium	Amber Colour - Category A1 (or higher)
	2	Low-Medium	Amber Colour - Category A2 (or higher)
Low	1	Low	Amber Colour - Category A3 (or higher)

**Note:** A fifth category, Red Colour - Category R, exists. These fume cupboards should not be used with any task.

## 5. COLOUR CODE CHANGE

### a. Testing Regime

Property Services manage a contract for the testing of all fume cupboards every six months. The testing is to determine the level of compliance of each individual fume cupboard with the Australian Standard AS 2243:2001 Part 8.

Chemical Fume Handling Equipment is currently the contractor whose responsibility it is to conduct the six monthly testing of all the fume cupboards in the University.

### b. Testing results

The colour code categorises the fume cupboard with a risk level for the type of work that can be safely conducted within them. That means the control measures incorporated in the fume cupboard and in a working condition are such that they provide the necessary protection for the type of work indicated by the risk level.

Once the testing has been completed a colour code will be fixed to the fume cupboard that reflects the compliance of the cupboard to the Australian Standard and in turn it's appropriate risk level.

The colours are Green, Amber 1, Amber 2, Amber 3 and Red.

For further explanation of the Colour Coding please refer to Appendix one.

Where a fume cupboard is tested and the colour coding applied after the test is different to that which it carried prior to the test, you must perform and document a new risk assessment for that fume cupboard.

This means that where there is a change of colour coding as a consequence there is a change to which the fume cupboard can legitimately function as an adequate control measure in the protection of the operator's health and safety.

Before performing the risk assessment read the test report for that fume cupboard to determine which parameter of the Australian Standard that the fume cupboard has failed.

The test results for every individual fume cupboard will be available from the OH&S website.

This information is critical for the risk assessment and the change of use for the fume cupboard.

<http://www.adelaide.edu.au/hr/ohs/fumeextract/>

## 6. HANDOVER PARAMETERS

These parameters are applicable only for the case where a fume cupboard is the subject of remediation under the Property Services contract for Fume Cupboards Upgrade 2004 – 2005.

### a. Compliance with the Standard

The contractor awarded the work under the contract for Fume Cupboard Upgrade will complete the work to the Australian Standard AS 2243:2001- Part 8.

In consultation with the end user and taking advice from the Consulting Engineers some of the fume cupboards can never meet all the requirements of the Australian Standard and therefore will be upgraded to be compliant with particular clauses of the Australian Standard.

This is indicative of the final colour coding assigned and fixed to the fume cupboard.

### b. Signed off and accepted by the University.

On completion of all works requested by the end user and programmed by the Consulting Engineer for a particular fume cupboard the contractor will present the fume cupboard for inspection, testing and commission.

Acceptance tests carried out on the completed installation to demonstrate that the system, including all components and equipment, operates correctly, safely and efficiently, meets the performance requirements, and is acceptable for handover.

Handover and acceptance by the University occurs when the Acceptance test has been satisfactorily completed and the test records for the fume cupboard have been received for inclusion in an operation and maintenance manual.

The fume cupboard will have a test compliance certificate and colour code attached.

**c. Handed over to the operator/user to use in accordance with the risk assessment of the process and the colour code indicated.**

After acceptance by the University the fume cupboard is ready for use by the end user in accordance with the colour code attached. (See Appendix One.)

The user of the fume cupboard must conduct their own risk assessment related to the experiment or process they intend to perform within the cupboard prior to the first time commencement of the procedure.

Each and every procedure performed in the fume cupboard must be risk assessed before the procedure is commenced for the first time so that the appropriate colour coded fume cupboard is used. This essential risk assessment procedure will assist in identifying the fume cupboard that will provide the best protection for the health and safety of the operator.

## 7. CONTACTS

**a. Property Services – maintenance**

The Testing Contractor will automatically log maintenance faults detected during the testing cycle with Property Services. However if areas detect faults between testing cycles (e.g. light blown, fan making noises) you are required to log this with Property Services maintenance via their website. <http://requests.property.adelaide.edu.au/forms/index.html>

**b. Faculty Fume Cupboard Contact person.**

If you require further explanation of results beyond this document then contact

Sciences: Peter Berry Smith

Humanities and Social Sciences and Engineering: David Burford

Health Sciences: Jane Knipe

## 8. EXCEPTIONS

**a. Perchloric Acid**

(AS 2243:2001 Part 8)

Perchloric acid is an explosion risk and is extremely shock sensitive. In addition, after exposure to perchloric acid, some organic materials, such as timber or rag, spontaneously ignite when they dry.

- Perchloric acid is not a fuming but is a powerful oxidizer at temperatures above about 60-70° C (i.e. when heated in say a digestion). Dilute solutions are less problematic at elevated temperatures, but can still be potent oxidizers. Dilutions can be done in a normal fume cupboard, but digestions or any heating of perchloric acid must be done in a perchloric acid fume cupboard (only and always) with an operable washdown system.
- The fume-scrubbing facility shall be run continuously. On completion of the operation with perchloric acid, the wash-down facility shall be operated for 15 min and any condensate, spills or dust deposits shall be manually washed from the interior of the fume cupboard chamber by means of a hand-held gentle spray of cold water.
- Contact the OHS Unit or Refer to AS2243.8 regarding suitability of fume cupboard for using perchloric acid. The use of perchloric acid should be confined to one fume cupboard within an area and any cupboard where Perchloric acid is used must be registered with Property Services.

**b. Hydrofluoric Acid**

(AS 2243:2001 Part 8)

- The fume cupboard surface is to be crevice free with smooth surfaces for easy decontamination.
- As Hydrofluoric acid etches glass the material of the sash is not to be made of glass.

**c. Biological**

(AS 2243:2001 Part 8)

Biological materials, which are infectious to humans or hazardous to the environment, should be carried out in a biological cabinet and not in a general-purpose fume cupboard (refer to AS 2243.81 and AS 2243.3).

**d. Heavy Vapour Work**

(AS 2243:2001 Part 8)

Heavy vapour work shall be undertaken in a specially designed containment enclosure with fume extraction. The airflow will be different from a conventional fume cupboard as it is required to be directed downwards to an absorption filter before exhausted from the building.

**e. Flammable Liquids Distillation and High Temperature Work**

(AS 2243:2001 Part 8)

- Fume cupboards are to be made of heat and fire rated material.
- There shall not be a gas supply in the fume cupboard.
- The fume cupboard will have a holding capacity of more than three times the maximum volume of liquid in the fume cupboard at any time.

# APPENDIX ONE

## FUME CUPBOARD COLOUR CODING

### GREEN

The Green colour category represents the fume cupboards that comply with the majority of the Australian Standard 2243:2001 Safety in Laboratories Part 8: Fume Cupboards.

That means that the fume cupboards comply with the critical elements required as a control measure for the protection of health and safety of the end-user.

These fume cupboards can be used for all experiments requiring a fume cupboard, after the user of the fume cupboard has conducted their own risk assessment related to the experiment or process they intend to perform within the cupboard.

Procedures that have a risk assessment rating of High, Medium and Low can be conducted in these fume cupboards.

Where Perchloric Acid is to be used that fume cupboard must be fitted with a scrubber and have a Green colour coding.

### AMBER

The Amber colour category represents the cupboards that do not fully comply with the standard.

Within this category there are three sub-categories arranged in order of degree to which the fume cupboard complies with the standard. The categories are; Amber A1, Amber A2 and Amber A3, with Amber A1 the most compliant and Amber A3 being the least compliant. The use of these cupboards is limited and a full Risk Assessment should be conducted before each experiment to determine what category of cupboard is appropriate for the experiment or process.

Processes and procedures that have a risk assessment rating of Low should be used in an Amber A3 fume cupboard or higher.

Where the risk assessment is determined to be Low – Medium the process should be conducted in an Amber A2 fume cupboard or higher.

Risk Assessment Rating, = Medium, the acceptable fume cupboard category for use is Amber A1 fume cupboard or higher.

**Procedures that have a risk assessment rating of High, should not be done in a fume cupboard that is colour coded Amber.**

### RED

**The Red colour category represents a fume cupboard that is not a functioning fume cupboard and consequently cannot be used.**

View information at: <http://www.adelaide.edu.au/hr/ohs/fumeextract/>

## APPENDIX TWO

### Fume Cupboard Categories

Non-compliances as per AS/NZS 2243.8 – 2001

☐ Indicates the minimum clauses that must be satisfied to be the category of Fume Cupboard

		Green	Amber A1	Amber A2	Amber A3	Red
<b>Standard</b>	<b>Description</b>					
	<b>SITING REQUIREMENTS</b>					
4.1	Minimum spacings comply with Figure 1					
	<b>SERVICES</b>					
2.2.2	Controls clearly marked to indicate the type of service	✓				
2.2.2	Service outlets are individually controlled	✓	✓			
2.2.2	Service controls are located outside fume cupboard	✓	✓			
	<b>ELECTRICAL</b>					
2.2.1	Electrical services outlets are located outside fume cupboard	✓	✓			
2.2.1	Electrical socket-outlets are protected by RCD's and fitted with illuminated indicators	✓	✓			
2.2.3.1(c).	Emergency isolator present and suitably labelled	✓	✓			
2.2.3.1	Isolators require manual resetting	✓				
2.2.3.2	When isolator operates under fault condition it indicates its operation by an audible and visual signal	✓	✓			
2.2.3.2(i)	For a power failure the audible alarm has the capacity to operate for at least 20min	✓				
2.2.3	Fume cupboard isolator switch isolates any socket-outlets and flammable gas supplies but leaves fan running	✓	✓	✓		
2.2.3.2(a)	Means of automatic isolation in event of inadequate airflow has been provided	✓	✓	✓		
2.2.3.2	Automatic isolation is manual reset type (i.e does not restore electrical supply and gas supply for the fume cupboard on resumption of adequate airflow)	✓				
2.2.3.1(a)	One minute delay is achieved from establishment of adequate airflow before gas and electricity supplies are made available to the fume cupboard	✓	✓	✓		
3.2.5.5(d)	When fume cupboard is switched off fan runs for 20 mins but gas and electricity supplies are not available	✓	✓	✓		
	<b>LIGHTING</b>					
2.2.4	Lighting gives 400 lux at work surface	✓				
2.2.4	Lighting is isolated from working chamber	✓	✓	✓	✓	
2.2.4	Access is provided for maintenance and cleaning of light	✓	✓			

		Green	Amber A1	Amber A2	Amber A3	Red
	<b>CHAMBER</b>					
Appendix A	Materials of construction are suitable for use	✓	✓	✓		
Appendix A	Stainless steel surfaces are earth bonded	✓	✓	✓		
2.3	Base is sealed and minimises spillage toward operator	✓	✓	✓		
2.5	Sump, if fitted, is of 10mm or more depth and has minimum capacity of 5L	✓	✓			
2.6	Chamber has smooth interior finish with no areas where residue can collect	✓	✓			
	<b>SASH</b>					
2.7.1	Sash remains in place when positioned	✓	✓	✓	✓	
2.7.1	Sash is transparent	✓	✓	✓	✓	
2.7.1	Sash is easily moveable and made of corrosion-resistant material	✓	✓			
2.7.2	Sash has stop at maximum working opening					
2.7.4	Vertically rising sash has a minimum opening of 50mm	✓	✓	✓		
2.7.4	If sash is power operated, a manual override is provided, along with handles					
2.7.5	Sash handles do not create eddy in the plane of sash opening					
	<b>BAFFLES</b>					
2.8.2	Baffles are removable for cleaning operations	✓	✓	✓		
2.8.3	Removal and replacement of baffles does not alter their set point	✓	✓	✓		
2.9	Support structure construction is suitable for weight, equipment, materials and temperatures	✓	✓	✓		
	<b>LABELLING</b>					
2.12	Warning label is affixed					
2.13	Ductwork, fans units and air cleaning devices are labelled with fume cupboard identification number and location	✓	✓	✓		
2.13	Identification label (model, number, manufacturer) is affixed to fume cupboard					
	<b>FIRE PROTECTION</b>					
2.14.2	Thermal heads (if fitted) are corrosion resistant	✓	✓	✓		
2.14.3	Fire extinguisher is mounted approximately 4m from fume cupboard	✓	✓	✓	✓	
	<b>AIRFLOW</b>					
Appendix E	Face velocity tested in accordance with Appendix E, passed test and report submitted	✓	> 0.3ms <sup>-1</sup>	> 0.2ms <sup>-1</sup>	> 0.2ms <sup>-1</sup>	< 0.5ms <sup>-1</sup>
Appendix F	Smoke test conducted in accordance with Appendix F, passed test and report submitted	✓	✓	✓	✓	Fails
3.1.2	At minimum sash opening, the airflow is not less than five (5) cupboard volumes per minute	✓	✓	✓	✓	
3.1.3.2	Sufficient openings have been provided in walls and doors for make up air, if laboratory is not	✓	✓	✓	✓	

		Green	Amber A1	Amber A2	Amber A3	Red
	mechanically ventilated					
3.1.3.2	Any make up air system does not disturb the cupboard air pattern	✓	✓	✓	✓	
3.1.3.2	Ceiling air diffusers or grilles within 3m of the front do not discharge directly towards the cupboard	✓				
3.1.5.1	Auxiliary air supply systems are not fitted to the fume cupboard	✓	✓	✓	✓	
3.1.5.2	Variable flow systems maintain compliance with minimum airflow and face velocity requirements	✓				
3.1.6	Air extracted from the fume cupboard is not recirculated	✓	✓	✓	✓	
	<b>EXHAUST DISPERSAL</b>					
3.2.2	Exhaust ductwork within the building is maintained at negative pressure when in use					
3.2.3	Airflow in the exhaust or face velocity is continuously monitored	✓	✓			
3.2.4	Cupboard is separately ducted to its own individual exhaust fan	✓	✓	✓		
3.2.4	Reverse flow of exhaust is prevented	✓	✓	✓		
3.2.5.4	All parts of the fan in contact with the fumes are accessible for cleaning	✓	✓	✓		
3.2.6	Ductwork including any gaskets show no evidence of leaks	✓	✓	✓		
3.2.7.6	Exhaust duct discharges vertically upward and is at least 3m above roof at point of penetration and 3m from any access or walkway	✓	✓	✓	✓	
	<b>USE AND MAINTENANCE</b>					
4.2.4	Sound pressure levels tested in accordance with AS 1807.20	✓	✓	✓	✓	
5.1	Maintenance program instituted and records of maintenance and testing up to date	✓	✓	✓	✓	
6.1.2	Liquid volume assessment conducted	✓	✓			
6.1.4	Liquid volume warning label fixed to fume cupboard	✓	✓			
6.5	Cupboard not used for storage of chemicals	✓	✓	✓		
	<b>PERCHLORIC ACID FUME CUPBOARDS</b>					
2.10	Scrubber pump and exhaust fan interlocked during scrubber operation	✓	N/A	N/A	N/A	N/A
2.10	Duct surfaces between fume cupboard and scrubber able to be inspected	✓	N/A	N/A	N/A	N/A
2.10	Spray pattern within scrubber can be observed while in operation	✓	N/A	N/A	N/A	N/A
B3.3	Wash down facility is fitted behind baffles	✓	N/A	N/A	N/A	N/A
A8 and B3.1	Fume cupboard and supporting framework construction is free from timber	✓	N/A	N/A	N/A	N/A