DISPENSE GAS CELLAR SAFETY ASSESSMENT

BOC Sureserve

SAFETY ASSESSMENTS

Beer Dispense Gases such as Carbon dioxide and nitrogen are dangerous gases. They can cause asphyxiation (suffocation). It is therefore **essential** that CO2 cylinders are stored in a **well ventilated area,** ideally outside. The storage area inside a building must also be well ventilated; under certain circumstances a forced extraction system will have to be installed.

Storing gas cylinders

- **CO2 cylinders** must always be left standing on end.
  Reason: They contain liquid CO2 which sits at the bottom of the cylinder.

- **N2 cylinders** may be stored on their end or on their side.
  Reason: They contain a gas which fills the whole cylinder, however it is stored.

  Note: 75 lb cylinders may not be stored inside.

Name and Address of Proprietor

_____

_____

_____

_____

BOC Sureserve

08457 302302

SAFETY IN BEER STORES AND CELLARS

Louvered openings

A louvered door or wall opening may be installed in a beer store instead of a forced extraction system only if:

- the store is above ground level
- a louvered door opens directly from the outside (open to atmosphere into the beer store) **and** the minimum size of the louvered part of the door is 0.45 m x 0.45 m.
- a louvered wall opening is in an outside wall of the beer store so that the bottom of the opening is within 100 mm of the floor level **and** the minimum size of the louvered opening is 0.45 m x 0.45 m.

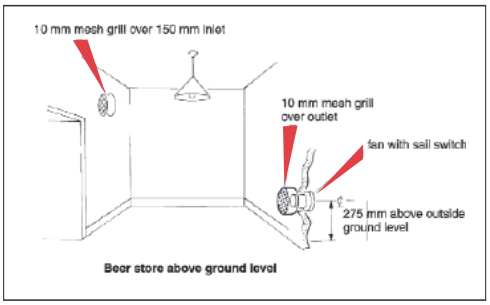
Forced extraction systems

- The forced extraction system must have a 500 m3/h extractor fan ducted to atmosphere.
- The inlet to the ducting must be within 150 mm of floor level.
- The fan must run continuously.
- The fan must have running lights positioned just outside the entrance to the beer store, which are activated by a sail switch in the ducting. The green light should be on when the fan is running; the red light should be on when the fan has stopped.
- A fresh air ope of at least 150 mm dia (or equivalent) must be made at a high level to allow fresh air to enter the beer store. The outlet opening should also be at least 150 mm dia (or equivalent).
- The trader and staff must be trained to appreciate the forced extraction equipment and the potential hazards associated with carbon dioxide.

CO2 Alarms

IF ANY ALARMS ARE ACTIVATED YOU MUST CARRY OUT THE FOLLOWING STEPS

Step 1 Ensure you inform someone else who can act as an observer outside the cellar, and who can raise the alarm should an emergency arise.



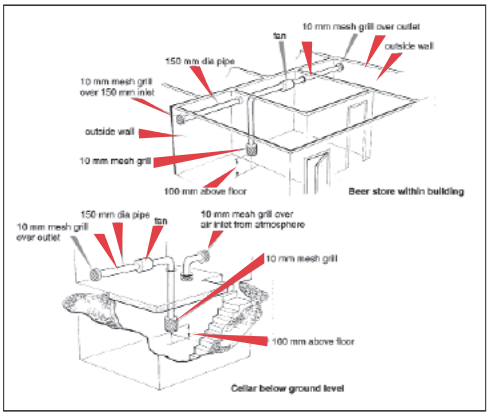
Step 2 If ALARM 1 ONLY is flashing (and NOT ALARM2) and slow speed buzzer:-

1. Enter the cellar and isolate the CO_2 supply.
2. Keep the cellar door open and ventilate the room by opening all windows and doors.
3. Wait outside the cellar, until the unit returns to Safe Mode (Green Light).
4. Check and repair CO_2 leaks.

Step 3 If BOTH ALARMS 1 and 2 are flashing and medium speed buzzer:-

1. DO NOT ENTER CELLAR/COOL ROOM.
2. If possible, ventilate the room by using the extraction fan or by opening any windows and doors FROM THE OUTSIDE.
3. Never attempt to enter the cellar by holding your breath.
4. Contact BOC Sureserve for technical support at the following number:

   08457 302302
5. Do not enter the cellar until the CELLAGUARD returns to the Safe Mode (Green Light).
6. Do not operate the beer dispensing system until the CO_2 monitor system has been checked and any leaks have been repaired.



Working with CO2 cylinders

When working at **ground level:**

- leave the doors open.

When working **below ground level:**

- leave the doors open
- tell the person on duty that you are working in the cellar
- ask him/her to wait at the entrance while you descend to ensure you reach the cellar floor safely.
- **never** connect a cylinder to any equipment not provided by BOC Sureserve.

DISPENSE GAS CELLAR SAFETY ASSESSMENT

BOC Sureserve

Full name and address of premises

BOC Account Number:

Name and address of Proprietor/Company/Group

Tel. No.

Contact Name:

Account No:

I hereby accept receipt of the dispense gas cellar survey BOC Sureserve have undertaken on ____/____/____

Risk having been identified @ _____%

I understand the recommendations made from the risk assessment findings and that I should take appropriate action to implement these recommendations.

Cellar Assessor Signed	Outlet Signed	Date

BOC Gases does not have the relevant expertise to advise on aspects of risk assessment other than gas safety and we therefore recommend that other risks mentioned in the Confined Spaces Regulations 1997 are assessed by suitable experts.

Cellar - FLOOR PLAN

BOC Sureserve

ROOM DIMENSIONS (m^3)	System Type	Serial No.s	Cylinders
Area 1			
Location			
Area 2			
Location			

Requirement: New Installation Requirement ☐ Existing Account Survey ☐

Area 1 Area 2

CELLAR LOCATION Below ground ☐ Above ground ☐

Area 1

Area 2

Vent Type Mechanical ☐ Passive ☐

Comments:

Special Instructions:

DISPENSE GAS ASPHYXIATION RISK

BOC Sureserve

Multiple storage areas should have an assessment for each cellar

Confined Space/Cellar Date of assessment / /

CARBON DIOXIDE

SINGLE GAS CYLINDER VOLUME

Determine the cylinder containing the largest amount of carbon dioxide by volume - this may not be your largest cylinder but the one containing the most carbon dioxide. Use the Sureserve Gas Cylinder Volume Reference Chart to help you. If you do not use BOC as a gas supplier check the information on each cylinder or contact your supplier.

CELLAR VOLUME

Measure and record the length, width and height of your cellar as accurately as possible. If you do not have a tape measure you can approximate the value by pacing the length and width - one average stride being equal to 1 metre. Multiply the values together to obtain the cellar volume in cubic metres.

IMPORTANT

You must consider the floor area occupied by all objects/equipment in the cellar which may considerably reduce the air space. You should estimate the total cellar area in m^3 occupied by such objects and deduct this from the total cellar volume to obtain the total free air space.

Largest single gas cylinder volume (m^3)

V1 = _____

DIVIDE BY

Length (m)	Width (m)	Height (m)

Cellar volume (m^3) _____ (less) **Estimated volume of objects (m^3)** _____

Total free air space (m^3)

V2 = _____

MULTIPLY THE ANSWER BY 100

AIR CONTAMINATION

X 100%

= _____ **%**

Divide V1 by V2 x 100 to determine the % contamination of air in the cellar in the event of a cylinder venting its entire contents

ENTER THE RESULT HERE

LOW RISK	MEDIUM RISK	HIGH RISK
0 - 0.5%	0.5% - 1.5%	greater than 1.5%

Safe System of Work

BOC Sureserve

Guide to implementing a safe system of work for a cellar with an asphyxiant risk

TO COMPLY WITH THE REQUIREMENT THAT A SAFE SYSTEM OF WORK IS FULLY DOCUMENTED WITH STAFF TRAINING RECORDS KEPT YOU SHOULD:-

1. Record the potential risks and hazards posed by handling and storing dispense gases in a cellar.
2. Communicate assessment results and train staff in all safety procedures.
3. Implement regular housekeeping checks to confirm easy access, no slipping or tripping hazards and no free-standing gas cylinders.
4. Display appropriate warning signs near all entrances to and within the cellar.
5. Ensure regular maintenance schedules are kept for all gas dispense equipment.
6. Establish a routine of regular gas leak checks and keep records.
7. Appoint a responsible person to maintain this safe system of work.
8. Ensure compliance with the HSE/BLRA/BSDA codes of practice.
9. Maintain gas cylinder stocks at a level suitable for business needs - do not over stock.
10. Review risk assessment at regular intervals of not more than 12 months and after any major changes in the cellar.
11. We strongly recommend the installation of carbon dioxide monitoring equipment. (Essential if carbon dioxide contamination level exceeds 4%).
12. Increase ventilation by installing a forced-air ventilation system.
13. Develop and implement emergency evacuation procedures: if carbon dioxide air contamination exceeds 4% this will include the use of the fire brigade to rescue someone incapacitated.

IN ADDITION TO THE ABOVE, BOC SURESERVE RECOMMENDS THE FOLLOWING ACTIONS:

Risk Indicators Recommendations

High Risk ☐

Recommend the following:

1. Cellar ventilation installation 500m^3ph with Sail Switch and indicator alarm or passive vent 750m x 750m
2. Plus cold room CO_2 alarm installation
3. Or cold room and cellar CO_2 alarm installation

Medium Risk ☐

1. Cellar ventilation installation 500m^3ph with Sail Switch and indicator alarm or passive vent 750m x 750m
2. Plus cold room CO_2 alarm installation
3. Or cold room and cellar CO_2 alarm installation

Low Risk ☐

1. Adequate cellar passive ventilation and cold room Co_2 alarm installation

Cellar Assessor Signed	Outlet Signed	Date

Attach any supporting documentation (receipts maintenance contracts etc.) and any additional sheets of records.

ACTION PLAN

BOC Sureserve

To ensure full compliance you must record here the actions that you have taken to implement the recommendations which have been made in respect of this cellar.

Cellar _____ Date ____ / ____ / ____

	Date of Installation
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	

CO_2 Alarm installed by BOC ☐ Other ☐

Outlet Signed

Position

GAS DISPENSE SAFETY CHECK LIST

BOC Sureserve

In addition to assessing the dispense gas asphyxiation risk level, you should also undertake and record an inspection of the following safety factors:

THE CELLAR

Are hazard warning notices clearly visible?	Yes ☐	No ☐	N/A ☐
Is there clear, unobstructed access into and out of the cellar?	Yes ☐	No ☐	N/A ☐
Is there adequate lighting in the cellar?	Yes ☐	No ☐	N/A ☐
Are cellar floors dry and uncluttered	Yes ☐	No ☐	N/A ☐
Is ventilation adequate and working (eg. unblocked ventilation grills, properly maintained mechanical extractors)?	Yes ☐	No ☐	N/A ☐
Has gas dispense equipment been installed by a competent expert?	Yes ☐	No ☐	N/A ☐
Is gas dispense equipment regularly serviced and maintained?	Yes ☐	No ☐	N/A ☐

SAFE STORAGE OF GAS CYLINDERS

Are cylinders in use chained in an upright position?	Yes ☐	No ☐	N/A ☐
Are cylinders not in use chocked flat or chained upright?	Yes ☐	No ☐	N/A ☐
Are floors where cylinders are stored/used level and dry?	Yes ☐	No ☐	N/A ☐
Are floors where cylinders are stored/used uncluttered?	Yes ☐	No ☐	N/A ☐

SAFE HANDLING OF GAS CYLINDERS

Are all persons handling cylinders wearing suitable protective clothing? (eg. protective shoes, gloves)?	Yes ☐	No ☐	N/A ☐
Is adequate equipment available for lifting heavy materials? (eg. trolleys, hoists, etc.)	Yes ☐	No ☐	N/A ☐
Are cylinders over 25kg in weight lifted by 2 persons?	Yes ☐	No ☐	N/A ☐
Are staff fully trained in lifting and handling cylinders?	Yes ☐	No ☐	N/A ☐

EMERGENCY PROCEDURES

Do all staff know what to do in the event of an emergency (e.g. accident, gas leak)?	Yes ☐	No ☐	N/A ☐

ACTION REQUIRED

_____

_____

If you have answered No to any of the above questions, you may NOT be following health and safety recommended safety procedures.