

HANDY HINTS OF HOUSEKEEPING & FIRE PREVENTION

www.ambiton.co.za

T: 041 5817170 / F: 041 5817174 / E: marketing@ambiton.co.za



FINANCIAL PLANNING

BUSINESS ASSURANCE

SHORT-TERM INSURANCE

WEALTH MANAGEMENT

ACCOUNTING & TAXATION

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CLASSIFICATION OF OCCUPANCY

Classification of Occupancy is determined by the fire risk emanating from that occupancy in terms of the National Building Regulations Classification (SABS 0400) & Building Control Standards Act, act 103 of 1977

A1	Entertainment and public assembly
A2	Theatrical and indoor sport
	Place to view theatrical, operatic, orchestral, choral, cinema or sport
A3	Places of instruction
A4	Worship
A5	Outdoor sport
B1	High risk commercial service
	Non-industrial process
B2	Moderate risk commercial service
	Non-industrial process
B3	Low risk commercial service
	Non-industrial process
C1	Exhibition hall
C2	Museum
D1	High risk industrial service
	Industrial process
D2	Moderate risk industrial service
	Industrial process
D3	Low risk industrial service
	Industrial process
D4	Plant room
	Unattended mechanical or electrical services necessary for the running of a building

E1	Place of detention Where people are detained for punitive or corrective reasons or because of their mental condition
E2	Hospital Where people are cared for or treated because of physical or mental disabilities and are generally bed-ridden
E3	Other institutional (residential) Where groups of people are cared for who either are not fully fit or are restricted in their movements or ability to make decisions or reside independently
F1	Large shop Where merchandise is displayed and offered for sale to the public and the floor area exceeds 250m ²
F2	Small shop Where merchandise is displayed and offered for sale to the public but the floor area does not exceed 250m ²
F3	Wholesalers' store Where goods are displayed and stored but only a limited selected group of people are present at any one time
G1	Offices Offices, banks, consulting rooms and other similar usage
H1	Hotel Where people rent furnished rooms, not being dwelling units
H2	Dormitory Accommodation in a single room
H3	Domestic residence Two or more dwelling units on a single site
H4	Dwelling house Dwelling unit on its own site, including a garage and other domestic outbuildings
J1	High-risk storage Where material is stored and that material can burn with extreme rapidity or release poisonous fumes or cause explosions
J2	Moderate-risk storage Where material is stored and that material can burn with moderate rapidity but is unlikely to release poisonous fumes or cause explosions
J3	Low-risk storage Where the material stored does not fall into the high or moderate risk
J4	Parking garage Place for storing or parking of more than 10 motor vehicles

MAXIMUM DIVISION AREA (m²)

Classification	Sprinkler system not required	Sprinkler system	
		1 Storey	2 Storeys or more
*E1 *E2 *E3	1250	1250	1250
A2 B2 B3 C1 C2 G1	5000	No Limit	10 000
A4 A5 D3 J3 J4	No Limit Restrictions Applicable		
All others	2500	No Limit	5000
* Maximum division area on any storey and all such divisions shall be interconnected			

Division of area means that the building is compartmentalised by a fire resisting element such as a Fire Wall.

Fire walls are characterised by two types:

- **Party Wall** – Solid double brick wall which ends at the exterior walls & underside of the roof.
- **Perfect Party Wall** – Solid double brick wall which extends past the exterior walls and roof by a minimum of 500mm.

Note that any unprotected/untreated piercings (steel columns & pipes) render the protection null and void.)

FIRE PROTECTION PORTABLE FIRE EXTINGUISHERS



The mounting is to be such that the extinguisher handle is no higher than 1,2 meters off the ground or if the extinguisher is placed on a shelf, that the base of the shelf is no higher than 0,750 meters off the ground.

Table 12 of Portable Fire Extinguisher Distribution

Class of Occupancy	Number of Portable Fire Extinguishers required (unit/m ²)	Type of Portable Fire Extinguisher			
		Water	Foam	Carbon Dioxide	Dry Chemical Powder
A1	1/2	9	9	5kg	4,5kg
A2	1/2	9	9	5kg	4,5kg
A3	1/2	9	9	5kg	4,5kg
A4	1/4	9	9	5kg	4,5kg
A5	1/4	9	9	5kg	4,5kg
B1	1/1	9	9	10k	9kg
B2	1/2	9	9	10k	9kg
B3	1/4	9	9	10k	9kg
C1	1/2	9	9	10k	9kg
C2	1/2	9	9	10k	9kg
D1	1/1	9	9	10k	9kg
D2	1/1	9	9	10k	9kg
D3	1/2	9	9	10k	9kg
D4	1/4	9	9	10k	9kg
E1	1/2	9	9	5kg	4,5kg
E2	1/2	9	9	5kg	4,5kg
E3	1/2	9	9	5kg	4,5kg
E4	1/2	9	9	5kg	4,5kg
F1	1/2	9	9	5kg	4,5kg
F2	1/2	9	9	5kg	4,5kg
F3	1/2	9	9	5kg	4,5kg
G1	1/2	9	9	5kg	4,5kg
H1	1/2	9	9	5kg	4,5kg
H2	1/2	9	9	5kg	4,5kg
H3	1/4	9	9	5kg	4,5kg
H4	1/1	9	9	5kg	4,5kg
H5	1/1	9	9	5kg	4,5kg
J1	1/1	9	9	10k	9kg
J2	1/1	9	9	10k	9kg
J3	1/4	9	9	10k	9kg
J4	1/4	9	9	10k	9kg

Fire Local Authority can increase required amount if the risk is determined to be high.

HOSE REELS

Installation required:

For buildings that are 2 or more storeys in height. Buildings that are one storey in height where the floor area exceeds 250m².

Exclusions:

- H4.
- H3 here is an independent access to ground floor.

Installation rate:

1 Hose reel per 500m² or part thereof.

The end of the hose reel is to be able to reach any point in the protected area. If there is a lack of water pressure, then 2 compliant fire extinguishers can be substituted.

Markings:

HYDRANTS

Required in:

- Buildings that exceed 12 metres in height.
- Buildings of any height where the floor area exceeds 1000m² of the following occupancy class: B1 B2 C1 C2 D1 D2 E1 E2 E3 F1 F3 H1 J1 J2 J3 J4.



Should display 'SABS 543' or 'approved by SABS'



External units should be in all-weather cabinets or covers

Check that units have not been damaged, that the hoses or handles are not missing and that signage has been provided.

The Local Authority may require a 24 or 30 metre hose, coupling and 16mm internal diameter nozzle to be provided.

With the exception of J4, all external units to be housed in all-weather cupboards.

Any part of a Permanent Amusement Park, Exhibition Ground, Shopping Centre, Group Housing, Cluster Housing Complex or Town House Complex to be no more than 90 metres from any hydrant point



Check that the handles and rubber O-ring washers are in place.

SPRINKLER SYSTEMS

Required in buildings:

- That are 30 metres in height except for G1 if the division does not exceed 500m² nor in H3.
- In basements with a floor area exceeding 500m² and having no natural ventilation.
- In any storey with the floor area exceeding 500m² and there is no suitable smoke ventilation.
- In a concealed space (not roof space) exceeding 800mm in height and 100m² above any ceiling or 300m² below any raised floor.

Records Room, Strong Room, Security Vault are excluded.

A sprinkler system can be substituted by any other approved fixed fire extinguishment system.



Note the following:

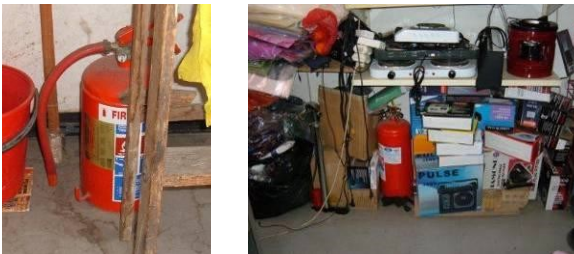
- The main sprinkler valve should have a supply of additional sprinkler heads, O-ring washers and that the main valve is secured in the open position with chains, straps or seals.
- Pipe brackets have not come detached from building.
- Sprinkler heads are not obstructed by signage or building alterations.
- Stock levels exceed the stated height restriction which could see a fire overwhelm the system.

FIRE FIGHTING EQUIPMENT MOUNTING

Check the condition of the mounting boards and brackets, if they are secure or pulling away from the wall.



Units must be kept free of obstruction at all times and never placed on the floor.



FIRE FIGHTING EQUIPMENT SERVICING

Servicing is to be done by a SANS 1475 registered Service Provider displaying the SABS marking on the service label. The service technician must be SAQCC registered. (South African Qualification and Accreditation Committee)



Firefighting equipment is to be serviced annually (6 monthly in high hazardous areas). Fire extinguishers may not be removed from site without a similar type left in its place.

FIRE FIGHTING EQUIPMENT GENERAL



Check the pressure reading on the gauge.



No pressure means the unit will not function. Over-pressure could result in a failure of the seals. Check the condition of equipment for missing or damaged pieces.

ELECTRICITY

A **Certificate Of Compliance** is needed for buildings older than 20 years and with any change in occupancy. **Wiring, plugs & sockets, lights & fittings** need to be in good condition to prevent short circuits from exposed wires or loose connections, leading to a fire.

Extension cables are for temporary usage only and are subject to failure and breakdown as they are often in the direct path of people.



Wiring needs to be affixed in a permanent position such as overhead trunking, cable trays and conduits to avoid damage.



For cable wire on the floor, metal plate covers can be affixed to the floor.



In order to try and prevent damage to electronic equipment such as computers, etc. from power spikes and electrical storms, power surge protection can be installed. **Open bar heaters** should be prohibited as this is often a source of fire ignition through radiated heat.

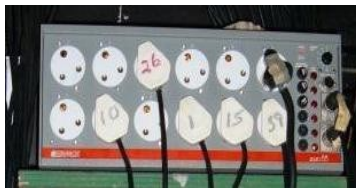
Distribution Boards are to be maintained in good condition and be kept free of obstructions. If there is a noise emanating from them or they are hot to the touch then they must be attended to immediately.

Check that the **earth leakage switches** have not being removed or replaced and that there are no other signs of tampering and that all covers are in place.



Infrared scanning to be carried out for larger installations every 3years as a safety measure

Mobile Phone charging is to be carried out in a safe manner using an intrinsically safe multi-plug unit with inbuilt fuses and power surge protection.



Multiple stacking of adaptors and DIY units are to be prohibited as these could lead to overloading, overheating and shorting out.



TRANSFORMERS



To prevent malicious interference, transformers should be housed in a secured location or fenced off. Oil cooled transformers need to have bund walls to contain any spillage. The **silica gel** should always be **blue** in colour. The changing to pink indicates that moisture is no longer being effectively absorbed from out of the oil. The result that the oil can breakdown, start to heat up and could result in a fire within the transformer.



Danger signage needs to be provided to indicate high voltage.

BUILDINGS

It is critical that buildings be maintained in a good state of repair as they form the protective covering for the trades that flourish therein.

Metal is subject to rust especially in coastal areas and sheeting needs often to be replaced every few years.

Asbestos cladding is to be removed because the exposure to asbestosis. The removal is governed by safety rules as stipulated in the Occupational Health and Safety Act

Timber partitioning adds to the fire load of a building and could easily prevent persons from escaping in an event of a fire. Portioning panels are to be fire rated to avoid potential loss of life.

Intumescent paint coating can be applied every 3 years to provide fire resistance to combustible structures.

Cracks are to be monitored to ascertain if structural defects are developing and advice of structural engineers would have to be sort.

To limit the impact of storm damage especially before the approach of the rain season, roof flashings are to be inspected and repaired if necessary. Internal box gutters, downpipes and internal drains/troughs are to be cleaned.



Where there exists a potential of impact damage to buildings, bollards should be installed.



Stairways are to be kept free from the storage of combustibles either on or below them as this could hinder escape in the event of a fire.



Broken tiles should be replaced and anti-slip strips applied to prevent accidents from occurring. Balustrades need to be fitted to all stairways without, and maintained in a good state of repair. No stairway should be less than 1 meter in width. Fire escape routes and doors are to be kept free from obstruction. The doors fitted with break-glass or push bar locks.



GAS INSTALLATIONS



To prevent damage from falling over, cylinders must be chained in the upright position.

Bulk outside storage of cylinders must be in a locked expanded metal cage for security and ventilation purposes. A roof covering should also be provided. Appropriate SABS approved signs and fire extinguishers are to be provided.



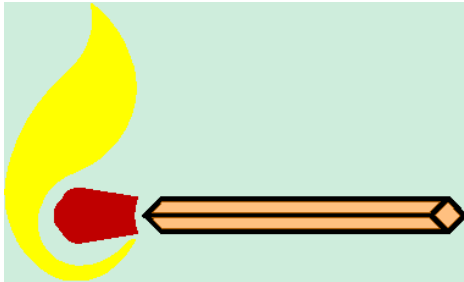
For ease of management, different gasses are to be separated from each other and empty cylinders marked "MT"

The following safety distances apply:

Capacity	Minimum Distance from Buildings &
Less than 500ℓ (±208kg)	1metre
500ℓ (±208kg) to 2250ℓ (±940kg)	4,5 metres
2250ℓ± (940kg) to 9000ℓ	7,5 metres
9000ℓ (±3750kg) to 67 500ℓ	9,5 metres

(IN)FLAMMABLE LIQUIDS

Flashpoint (FP): the lowest temperature at which a flammable liquid can be ignited by an external heat source.



Auto-ignition Temperature: the lowest temperature at which a flammable liquid will self-ignite.

Substance	FP - °C	Auto Ignite - °C
Acetone	-18	535
Petrol	-43	250
Thinners	-57	328
Turpentine	35	253
Diesel	56	257
Paraffin	38 to 74	228

Class & Maximum Quantities allowed without an approved flammable liquid store:

Class 0	LPG	19kg inside
Class 1	FP < 21°C	40ℓ
Class 2	FP 21°C to 55°C	210ℓ
Class 3	FP 55°C to 100°C	210ℓ
Class 4	Flammable Solid	250kg

Take Note! – This may vary between municipalities. Consult your local authority.

CLASSIFICATION LABELS



The number in the bottom triangle of the symbol indicates the Class the substance is.



Flammable liquids in the workplace should be stored in suitable Fire cabinets. No more than one work shift quantity should be held.

Safety decanting cans should only be used to prevent spillage



Larger drums should be placed on Decanting racks with catch/Drip trays beneath.

For the storage of larger quantities of flammable liquids, a **flammable liquid store** approved by the Local Authority is to be provided.

Elements of construction would include:

- Non-combustible roof, walls and floor
- Silled doorway or sunken floor to contain any spillage
- Flameproof light fittings
- Forced ventilation activated by the opening of the door
- Externally mounted fire extinguishers
- Appropriate signage



Tanks (Not Bulk Storage)

Above ground/elevated tanks can be up to 2200ℓ capacity

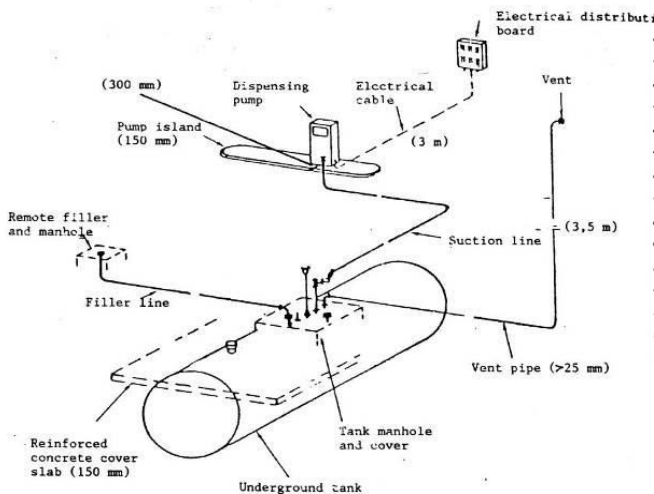
Below ground tanks can range from 6000ℓ to 23000ℓ



Bund wall Requirements

- It must hold the capacity of the tank plus 10%.
- Each tank is to have its own bund walls if it is less than 500mm from the next.
- The drain valve may not enter into a storm water drain
- A water/oil separator with outlet for water is to be provided.
- No holes are to be made in the bund walls as this would negate the function of the bund.

Dispensing pumps and tanks are to be a minimum of 3 metres away from any buildings or boundaries unless there is a 1,8 metre high 120 minute fire resistant screen installed extending 2 metres out on either sides.

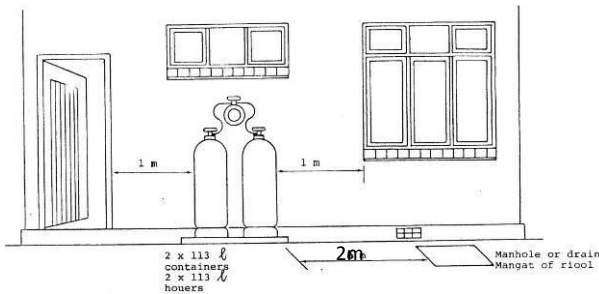


COOKING OPERATIONS



When using gas, the cylinder is to be sited no closer than 300mm from the stove but still in a well ventilated area. The cylinder may not be placed above the stove.

The internal gas cylinder usage is limited to one 19kg maximum. If additional capacity is needed then cylinders are to be sited externally in an approved cage and operate off a manifold system. The cylinders may not be laterally closer than 1 meter from any building openings. There must be at least a 3metre gap between the top of the valve and any building opening above unless fitted with a non-combustible roof. The cylinders may also not be within 2metres of a manhole or drain.



Pipe work condition and mounting must be inspected to avoid breakage and potential leaking.

Flexible hose should be kept as short as possible but not to exceed 2m.

Where additional cooking units are installed, the fixed piping should be extended accordingly.



Emergency Cut Off Valves are to be easily accessible, clearly indicated and the handles must be fitted.

Fire Blankets are to be wall mounted close to the deep fat fryers.



Extraction hoods are to be installed over the deep fat fryers. The filters are to be cleaned daily and the flue pipes every 3 to 6 months. A cleaning certificate is to be obtained from the Cleaning Company.

Fat traps are to be cleaned regularly. Fat and oil may not be poured down the drain.



STORAGE

Stack heights need to be limited to a maximum of 3,0 meters in height as this impacts on the fire load which can have a direct influence on the intensity and ferocity of a fire.

Stacking should be neat with sufficient aisle widths provided.



A clearance of at least 500mm must be maintained around all lights. The practice of utilising all available space such as storing of stock on the roof beams creates stress on the building structure and must be prohibited.

HOUSEKEEPING

A **cleaning programme** should be in place in trades where dust is generated during the course of the work shift. This can be done either manually or automatically or by a combination of the two.



Smoking is subject to legislation and is to be restricted to a designated safe area. Drums are to be provided, half filled with sand for cigarette butts.

Demarcation lines provide a safe passage as well as maintain housekeeping standards by limiting the placement of machinery and stock to designated areas.



Waste should be placed in suitable receptacles in a designated area and removed from the production area at the end of each work shift. Waste removal from the site must be done on a regular basis.



COMMON HAZARDS

BOILERS



Boilers are governed by the Occupational Health and Safety Act are subject to 3 yearly service and inspection. The certificate issued by the Department of Labour is always to be clearly displayed in the boiler room.

COMPRESSORS



Compressors should be mounted preferably in an outside enclosure because it is a pressurised unit.

The oil and air filters are to be changed regularly and there must not be any indication of oil leaks.

SPRAY PAINTING

Spray painting in the open is to be prohibited as there is no control over flammable vapours and potential sources of ignition as well as overspray.

Spray-painting is always to be carried out in a spray booth approved by the Local Authority.



To be constructed of non-combustible material. Fumes to be extracted to the atmosphere not lower than 4 meters off the ground and within 5 meters of a building opening. Lights are to have flameproof fittings.

PRODUCTION/MAINTENANCE



Oxygen (Black) & Acetylene (Maroon) units should also be on trolleys and chained in the upright position.



Flashback arrestors to be installed at both the torch and regulator. Check that the hoses are in good condition.

Welding/Grinding/Cutting



Should only be done in a designated area/workshop using safety screens to prevent sparks from flying.

If welding or grinding is to be done elsewhere, permission is to be obtained from the designated supervisor. A Hot Work Permit system should be in operation.

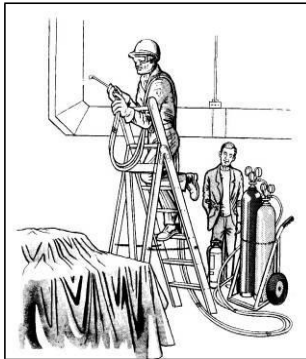
HOT WORK PERMIT*	
Date	
Permission is granted to	
to use in the (exact location)	
between a.m. and a.m.	
..... p.m. p.m.	
The above location has been examined.	A man will be standing by with an extinguisher/hose reel while the operation is in progress.
There are no combustible liquids, vapours, gases or dusts.	He and the operatives have had the nearest fire alarm/telephone pointed out to them and have been told what to do in the event of a fire.
All combustible material has either been removed or suitably protected against heat and sparks.	
Signature of person issuing permit and position held	
Work area and all adjacent areas to which sparks and heat might have spread were thoroughly inspected on completion of the operation, and thirty minutes later no smouldering fires were discovered.	
Signature of person responsible for the work	
(After signing return permit to the person who issued it.)	
*Applicable to all operations involving flame, hot air or arc welding and cutting equipment, brazing and soldering equipment, blowlamps, bitumen boilers and other equipment producing heat or having naked flames.	

All combustible materials are to be protected with a non-combustible covering and be inspected to ensure there are no openings for sparks to get in.

Outside contractors are to be made aware of procedures and hazardous area highlighted.

Fire extinguishers should be located at the work area and operators trained in their use.

If working in hazardous areas, there should be a trained person standing by ready with a fire extinguisher.



Ensure that equipment is in a good state of repair before commencement of work.

Empty drums that had contained flammable liquids are to be removed from the work area.

Drums previously containing flammable liquids are to be thoroughly degassed, preferably with steam, before being cut or welded.

The area of hot work is always to be well ventilated.