

REPORT
OF
FIRE SAFETY AUDIT

CONDUCTED AT



HOTEL SINGAAR INTERNATIONAL
KANNIYAKUMARI

(MAY, 2007)

By



NATIONAL SAFETY COUNCIL

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ACKNOWLEDGEMENT

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- NATIONAL SAFETY COUNCIL

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PART 1

GENERAL

1.1 Introduction

The National Safety Council of India (NSCI) and the United Nations Environment Programme (UNEP) are jointly implementing a 2-year Project “*Disaster Risk Reduction through Awareness, Preparedness and Prevention Mechanisms in Coastal Settlements in Asia – Demonstration in Tourism Destination – Kanniyakumari*” with technical support from the Swedish Rescue Services Agency (SRSA), Sweden and the International Hotel and Restaurant Association (IH&RA), France from October 2006.

This project is being funded by the European Commission’s cooperation-arm EuropeAid that has developed a specific Post Tsunami Programme as part of its Asia Pro Eco II initiative.

This Project aims at increasing the disaster management operational capacity of the main disaster and tourism stakeholders in tsunami hit tourism destinations including Kanyakumari. This will be achieved by improving the local authorities’ and the private sector’s ability to manage natural and man-made disasters and by training the local authorities, residents and tourists on how to properly prepare and react to disasters, as well as co-operate with the authorities during mitigation efforts. This demonstration project is proposed to be implemented by application of United Nations Environment Programme’s APELL process.

APELL, standing for Awareness and Preparedness for Emergencies at the Local Level, is a process designed by UNEP to create public awareness of hazards and to ensure that communities and emergency services are adequately trained and prepared to respond. This process will be applied to the specific needs of tourism destinations, as it has been done for other activities or sectors, like ports and mining industry.

The Project was launched by organising a 3–day Workshop on “Project Launching and APELL Training” from 21-23 March 2007 in Kanniyakumari. At the Inaugural Function the Director General, NSCI who is the Project Director offered its services (without any fees) on fire safety audit of the 3-star hotel in Kanniyakumari i.e. Hotel Singaar International, where workshop was organised, if the hotel agree to implement the recommendations of the audit. The Hotel Management welcomes the idea and agreed to implement the fire service plan in their hotel as per the report recommendations. The purpose of the audit is to demonstrate practical implementation fire safety in hotels so that others can implement fire safety plan in their hotel.

Accordingly, NSC carried out the audit during last week of April, 2007. The Field visit was undertaken by the NSC's audit team comprising of the following officers:

1. Shri W. A. Balakumaran, Member, NSC Expert Panel
2. Shri R. M. Salunkhe, Project Asstt. (Audits), NSC

1.2 Opening Meeting

An opening meeting was held with Shri K. Sivaramakrishnan, General Manager. During the meeting following points were made by the audit team.

- Safety Audit is not fault finding, but it is for identification of the areas for improvement in safety performance based on the observations, discussions with management and other personnel, and reference to the documents & records made available for verification.
- Safety is considered as an integral part of safe product or better service and is basically a management function and hence the responsibility for safety of employees and as well as customers/guests lies with the Management.
- Managing safety principles and practices in hotel premises has three components, viz.
 - a) Identification of potential hazards in the premises.
 - b) Establishment of a safe system to guard against these hazards.
 - c) Maintenance of the safe system in day to day work.
- Co-operation of the senior management personnel is a key in the successful completion of safety audit.
- Safety Audit is carried out keeping in view all the statutes like Fire safety regulations, Indian standard specifications, codes of practices etc.
- Recommendations made in the report would be practicable and information provided will be authentic.
- Safety Audit report will be a confidential document between the Hotel Singaar and NSC.

1.3 Profile of the Hotel Premises Audited

Hotel Singaar International is a three star hotel admeasuring 96000 sq. feet built up area; falling under category of High Rise Building. It is located

near to the railway station on the main road of National Highway and 90 kilometers from Thiruvananthapuram International Airport. The hotel is operating since 1998.

Total numbers of floors in the hotel are seven including basement. The seventh floor was under construction, at the time of audit. There are total 101 rooms in the hotel. It was informed that during the peak season the maximum occupant load in the hotel is around 250. Total numbers of employees are around 150.

1.4 Objectives of the Audit

The objectives of the Fire Safety Audit are as follows:

- Examine the existing procedures, systems and measures being followed for control of fire.
- Identify potential fire and electrical hazards not covered by the existing procedures.
- Recommend improvements for better effectiveness of existing procedures, system and control measures for the identified Fire & Electrical hazards.
- Check the extent of the compliance with statutory provisions and recommend the corrective action to be taken in case of non-compliance.

1.5 Methodology

The following methodology was followed for successful completion of the audit.

- Hold an opening meeting with the General Manager of the hotel.
- Inspect the hotel building and its premises.
- Discussion with the ground staff, selected at random.
- Briefing the General Manager, about the observations, for immediate action.
- Prepare and submit the report based on the actual observations and in line with the requirements of Indian Electricity Act & Rules Fire Safety Regulations, Indian Standards Specifications and codes of practices.
- Submit final audit report.

1.6 Areas covered in the Audit:

- Lounge and reception
- Passage leading to the rooms at each floor
- Guest rooms (at least one) in each floor
- Kitchens, including LPG cylinders storage
- Dining hall
- Bar
- Diesel Generator room
- Conference halls
- Road/ walkway surrounding the hotel building
- House-keeping room
- Lifts
- A few shaft openings each floor (Services duct - for hydrant and electrical system)

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PART 2

FIRE SAFETY MANAGEMENT SYSTEM

2.1 Management Policy on Fire Safety

The Management should issue a written statement of its policy regarding fire safety and fire loss control to its employees. (Suggested sample is given at Annexure I). The policy should be displayed at the conspicuous places.

2.2 Assigning of Safety Responsibility

Responsibility for fire safety should be vested as additional responsibility to a person from the management level. Such person should be trained in the fire safety aspects. He may be made responsible for inspecting, checking of the electrical & fire equipments, on regular basis.

2.3 Guidelines for Fire Safety in the hotel

Management should prepare the guidelines in support of the instructions issued to its employees to achieve desired fire safety in the hotel. The suitable guidelines and tips for safety in case of fire, electrical safety, LPG safety, hotel safety etc are attached as Annexure to this report. These may be appropriately selected and displayed at prominent places considering the activities carried out in the various hotel premises.

2.4 Evacuation Plan for Emergency

At present the hotel do not have a evacuation plan. A well laid down an emergency evacuation plan is must for every hotel premises with clear cut directives and command to avoid confusion and time lapses in emergency. A model emergency organization chart is attached at Annexure II. The hotel management may prepare the role & responsibilities for each personnel involved in the emergency.

* * *

PART 3

FIRE PREVENTION AND PROTECTION

AUDIT OBSERVATIONS & RECOMMENDATIONS

Based on the visits to various parts in the building and the discussions held with the concerned persons the following observations and recommendations are made:

	OBSERVATIONS	RECOMMENDATIONS
3.1	FIRE PREVENTION SYSTEM	
i.	Side and Rear Open Spaces	
	On the north side of the hotel, i.e. in front of pushpam hall there is adequate space. There is a dedicated space for parking of the vehicles. On rear side of the hotel there is swimming pool, garden, and a catering institute.	It is suggested that the open space in front of the pushpam hall should always be kept free of obstruction and encroachment for the movement of fire tender during emergency. Vehicles should be sequentially parked in the parking bay.
ii.	Means of Escape	
	There are two staircases in the hotel. The staircase along with the lift enclosure can be treated as Primary staircase and the staircase used by the service personnel (housekeeping, pantry etc.) can be treated as Secondary staircase. Primary staircase is leading to the exterior of the building while the secondary staircase is leading to the reception and then to main exit. For both the staircases, no exit signage, floor numbers are indicated. Secondary staircase was obstructed by the A/C units and other material and also poor	Both the staircases should be kept free from obstruction. Proper exit signs should be displayed on the wall which can be easily identified. Sample exit signs are attached at the Annexure III. Floor numbers should be prominently displayed at each floor. Proper illumination should be provided for the staircase, along with emergency lamps

OBSERVATIONS	RECOMMENDATIONS
illumination was found in the same staircase.	
iii. Floor Plan	
Floor plan is not available. This is required for the guests and staff to reach the safe place, at shortest time, in case of emergency.	<p>The floor plan should be prepared and displayed at each room, the Reception and other prominent locations at every floor, visible to all guests & staff. This should include:-</p> <ul style="list-style-type: none"> • Locations of all emergency exits (clearly marked). • Locations of corridors, pathways leading to all emergency exits (clearly marked). • Emergency evacuation routes. (Clearly distinguishable) • Location of Fire Protection Equipments • Location of power equipment (such as a DG, etc.) <p>A sample floor plan is attached at the Annexure IV.</p>
iv. Services Duct	
<p>It was observed that electric distribution cables/wiring, Water mains, drainages pipes, intercom lines were running through the same duct.</p> <p>Also there were several joints in the electrical wiring with insulation tapes, loosely laid. The poor wiring system is a source of ignition, besides a threat of electrocution.</p>	<p>The electric distribution cables/wiring should be laid in the separate duct. If this not possible, then the same should be enclosed in the conduit which should have two hours fire resistance.</p> <p>It should be also ensured that connectors should be used while connecting the electrical joints. Permanent vent should be provided at the top of the duct.</p>
v. Air Conditioning	
All the rooms are A/C rooms in the hotel with individuals split and	Connectors should be used while connecting the electrical joints.

OBSERVATIONS	RECOMMENDATIONS
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window A/Cs. Electrical Joints were noticed near the A/C units.

vi. Fire Lifts

One passenger lift and one service lift are installed in the building. They are provided with alarm for use by the user(s) and was found working.

Passenger lift can be modified with the following features and can be treated as Fire lift in case of emergency.

- To enable fire services personnel to reach the upper floor with minimum delay, one or more of the lifts should be designed as to be directly accessible to every dwelling/floor.
- The lift shall have floor area of not less than 1.4 sq m. (This may be ensured if the same is not available, now.)
- Loading capacity – 548 kg (8 persons)
- There shall be alternate electric source of supply from generator in case normal electric source of supply fails.
- The words “Fire Lift” shall be displayed in fluorescent paint on lift landing doors at each floor level.
- The lifts shall have solid doors with fire resistance of at least one hour.
- The speed of fire lift shall be such that it can reach the top floor from ground level within one minute.
- Lift license should be prominently displayed in the lift.

OBSERVATIONS	RECOMMENDATIONS
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vii. Main Kitchen

The LPG cylinders were kept in the trench. There are twelve manifolds, in which only two manifolds were in use.

Gunny bags of Charcoal were noticed in the trench along with the LPG cylinders. Ventilation was poor. LPG leak was also smelt at the time of audit.

LPG, being heavier than air will settle in the trench and take long time for dispersal because of poor ventilation.

A number of unconnected hoses were seen. They may cause leak of LPG due to valve passing.

The LPG storage area has high Fire risk.

The exhaust duct from the kitchen terminates through goose-neck and in open terrace. The LPG leak, if any, will also be exhausted through the gooseneck termination, where a blower motor is available. The motor is not flame proof and may result in explosion/fire.

- A sign board shall be posted and maintained on every floor at or near the lift indicating the words **IN CASE OF FIRE; OCCUPANTS SHALL USE THE STAIRS UNLESS INSTRUCTED OTHERWISE.**
- The relays, wire ropes, safety interlocks etc., are to be checked and certified by a competent person, once in a year.

Following are the recommendations :

- Cylinders should be kept in storage of brick masonry wall of 22.5 cms.
- The storage shed should be adequately ventilated near the ground level and near or in the roof. The frontage of the storage should be of expanded metal door with minimum of one meter width.
- The roof of the storage shed should be of non-combustible in nature.
- Perforators should be provided to the door at bottom level as well at top level for circulation of fresh air. The cylinder should be kept on concrete platform of 10 cms high
- The storage should be constructed at least three meters away from the burner.
- Valves, fittings and accessories and shut off valve should be of approved type.

OBSERVATIONS	RECOMMENDATIONS
<p>The awareness of fire prevention and fire control on the part of cooks and assistants was lacking.</p>	<ul style="list-style-type: none"> • Piping should be properly supported with suitable clamps; the piping should not run parallel above the electrical fittings/ piping. Minimum 15 cms should be kept in between the gas and electrical piping/ conduits • Main shut off valve of approved type should be provided at an easily accessible point on the piping, A board carrying the following instructions should be provided near the main shut off valve. <ul style="list-style-type: none"> MAIN SHUT OFF VALVE FOR GAS SUPPLY. CLOSE VALVE IN CASE OF FIRE OR GAS LEAK. DO NOT OPEN GAS VALVE WITHOUT FIRST CLOSING ALL APPLIANCE VALVES INSIDE. • Inflammable and other combustible material should not be kept on the premises of LPG storage. • LP gas detector should be provided in the storage cabin of the cylinders. • Minimum two DCP type fire extinguisher (10 kg) capacities should be kept in the premises. • The Exhaust duct of the kitchen should be erected in the L-position for better and faster dispersal of the exhausted gases, including LPG. • The people in the kitchen should be educated, periodically about the fire prevention and control.

OBSERVATIONS	RECOMMENDATIONS
<p>viii. Smoking Regulations</p> <p>As the smoking is permitted in the hotel premises, smoking zones were not identified & designated.</p>	<ul style="list-style-type: none"> • A guideline for safety in the use of LPG is given at Annexure VI. <p>Smoking zones should be properly designated.</p>
<p>3.2 FIRE FIGHTING EQUIPMENTS</p>	
<p>i. Only three fire extinguishers (water- CO₂ gas cartridge type) were noticed during the audit.</p>	<p>It is suggested that instead of water-CO₂ gas cartridge type fire extinguishers, Carbon dioxide type (4.8 kg) & Dry chemical powder type (10 kg) fire extinguisher should be used.</p> <p>The scale of the fire extinguishers should be as follows:</p> <p>For every 600 sq. metre of floor area one 10 kg DCP fire extinguisher thereof with minimum two extinguishers per floor or compartment. The extinguishers should be so located as to be available within 25m radius. The area should include-</p> <p>All the floors, King flower hall, Pushpam hall, kitchens, reception, restaurant, bar, store/housekeeping room, DG, Electrical rooms etc.</p> <p>In case of electrical fires Carbon dioxide type (4.8 kg) may be preferred.</p>
<p>ii. Fixed Fire Fighting Installation</p> <p>Two water tanks, one at the ground floor and the other at the terrace are available. They are fed from a well. Only one pump is available for pumping water from the well.</p>	<p>Fire Fighting Installation with following features may be considered:</p> <p>Installation Type- Wet riser cum down comer.</p> <p>Under-ground tank capacity- 150,000</p>

OBSERVATIONS	RECOMMENDATIONS
<p>Tapings are available in the water line running through the service duct, which could be utilized for fire fighting. But no hose reel was available.</p>	<p>litres.</p> <p>Hose reel may be provided in each floor.</p> <p>Terrace tank- 20,000 litres The pipe connections may be made in such a way that at least 50% of the capacity is available for fire fighting.</p> <p>Pump capacity for under ground tank - 2280 lpm with 3.5 bar pressure Pump capacity for terrace tank - 450 lpm with 2.0 bar pressure. The pump for lifting water from well should be connected to the power from DG set also.</p>
<p>iii. Fire Detection & Alarm system</p>	
<p>No such provision is available in the hotel.</p>	<p>Fire Detection & Alarm system may be considered in critical areas like Bar, Store/housekeeping room, lift room, electrical distribution room etc. The fire panel board should be located at the reception. Manual call points may be provided in each floor.</p>
<p>3.3 Emergency Evacuation</p>	
<p>i. No emergency evacuation procedure has been set-up.</p>	<ul style="list-style-type: none"> • The management should set up emergency evacuation procedure. • Suggested guidelines are given in Annexure V • The staff of the hotel should be assigned with the responsibilities and be trained in their role during emergency. • The guests should also be given information on Emergency. Evacuation procedure which could be in the form of a Guideline card given at the time of their check-in. • The open space near the car parking bay may be declared as
<p>ii. At present no Assembly point has been earmarked.</p>	

OBSERVATIONS	RECOMMENDATIONS
3.4 Other Observations	Assembly point, where all the occupants from the hotel can gather for the head count in case of emergency after the emergency evacuation. It should be properly designated as per the sign given Annexure III
i. Conference Halls	
No fire extinguishers, exit signages were provided.	The same should be done as per the recommended standards.
ii. Bar	
The entry to the bar is narrow and congested. No fire extinguishers, exit signage, or Detection system was available	The same should be done as per the recommended standards.
iii DG set room	
Old Generator set is located in a room, which has switchboards and other electrical switchgears. Lot of Combustible materials were found stored in the room, which increases fire risk. In addition hotel has new DG set kept outside the old DG set room.	It may be considered to keep the diesel tank outside the container/ room, as any leak in the diesel line may come in contact with hot exhaust pipe of the engine and may result in fire/explosion. No combustible material should be stored near the engine and house keeping should also be improved.
iv	
Fire fighting training	
Officers from Kanniyakumari fire station, impart training to the staff once in a year.	As the turnover of the staff is high in the hospitality industry, training and refresher training, atleast once three months, is essential. Fire drills should also be conducted (preferably every month) and records maintained for corrective action.

v

OBSERVATIONS	RECOMMENDATIONS
<p>Records</p> <p>Statutory licence from fire department was not readily available.</p> <p>No other record, pertaining to fire prevention & control was maintained</p>	<p>Statutory records (at least copies) should be readily available.</p> <p>Fire incident record, fire fighting training record, fire drills record etc., should be available with the designated fire marshall.</p>

SAMPLE POLICY FOR FIRE SAFETY

The Board of Directors of **XYZ Hotel** are responsible for preserving the resources of the company for the benefit of both the stock holders and its employees. In carrying out this responsibility, we recognize that we must aggressively manage, the fire prevention and control of property loss by giving the same attention and dedication to those elements as we do, to managing the many other elements that contribute to our success as the hoteliers in providing courteous service of highest order to our customers.

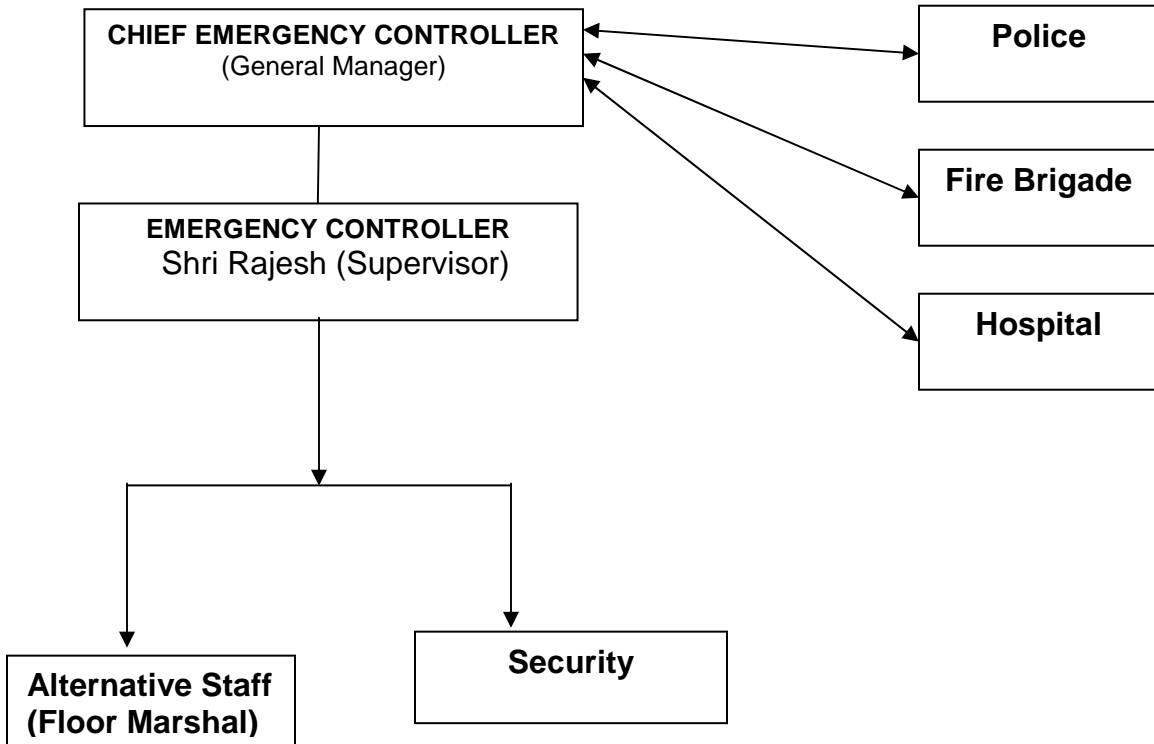
The life safety of our most valued customers and employees and fire loss control of valuable property is hereby made a part of the overall objectives of **XYZ Hotel** and the responsibility of each employee. To accomplish this, the responsibility of fire safety arrangement in **XYZ Hotel** shall vest with the Chief Executive.

Further, every employee of **XYZ Hotel** is responsible for making a positive and continual contribution to the success of our efforts to prevent a fire and recognize that every loss has a detrimental effect on our ability to meet our corporate objectives.

CHAIRMAN/ OWNER

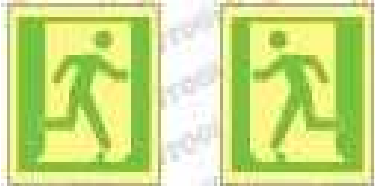
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EMERGENCY ORGANIZATION CHART

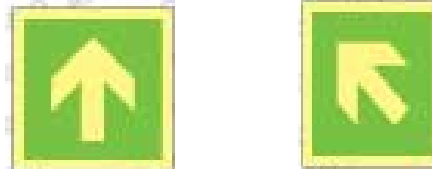


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SAMPLE FIRE PROTECTION SAFETY SIGNS



Emergency Exit
 Shape & Colours- Square
 Background: Green
 Symbol: white
 This sign shall be accompanied by an arrow shown in front table



Directional arrow for escape route
 Shape & Colours- Square/ rectangular
 Background: Green
 Symbol: white



Fire Exit
 Shape & Colours- Rectangle
 Background: Green
 Symbol: white

Direction for Staircase
 Shape & Colours- Rectangle
 Background: Green
 Symbol: white



Fire Assembly point
 Shape & Colours- Rectangle/ square
 Background: Green
 Symbol: white

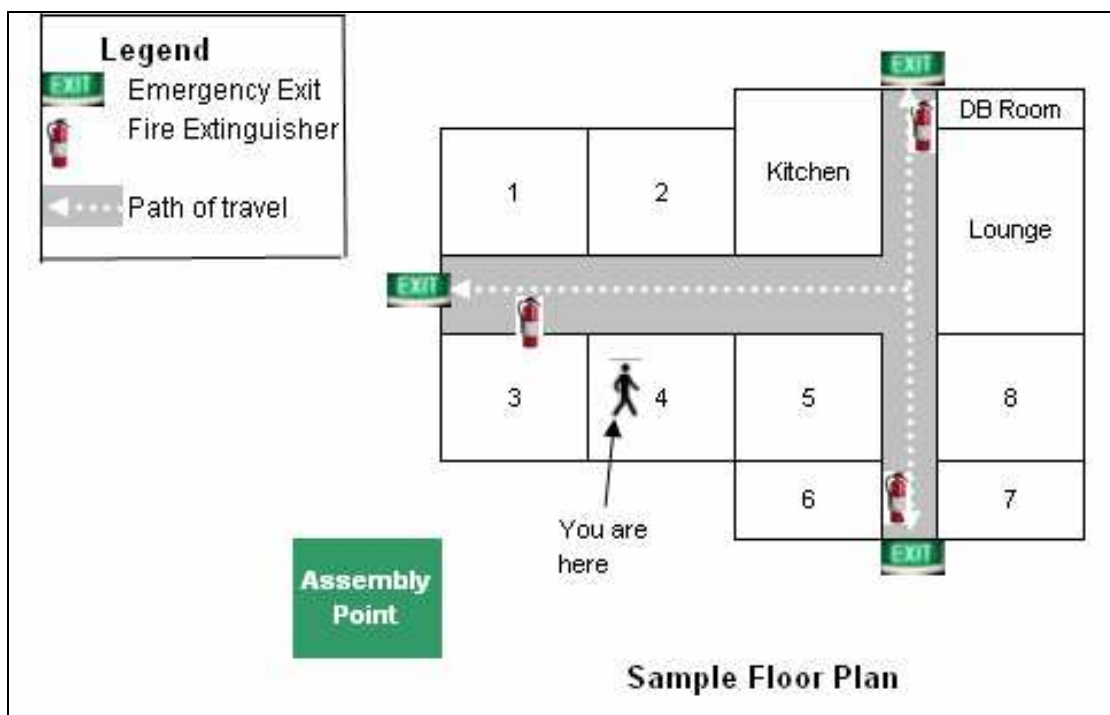
The above signages can be purchased from an agency who supplies as per the Indian Standards.

GUIDELINES FOR THE GUESTS, WHAT TO DO IN CASE OF FIRE

Permanently posted instructions shall be mounted in guest rooms at the inner side of entrance door, or any prominent location. The instruction shall contain floor map showing the location of the room, escape routes to staircase, location of fire extinguishers and clear instruction what the guests should do in an emergency.

Following are the model guidelines:

- If you notice a fire DIAL
- Tell everyone in your room to leave.
- Don't take any luggage or belongings.
- Close the door after you have left the room.
- Activate the Manual Call point on your floor and Shout "FIRE".
- If possible, tell nearby residents to leave.
- Don't use the lift. Use the stairway to escape.
- Leave the floor using the nearest stairway.
- Meet the hotel staff/firefighters at a safe place or designated assemble point. If you have useful information on the incident, tell them the situation.
- Report to the designated assemble point or hotel reception lobby.
- Remember, wherever you are, if there is smoke, crawl close to the floor.
- Cover the nose by a wet cloth.



* * *

EVACUATION PROCEDURE

- 1) The procedure should be so designed that all the guests of the hotel building are brought to the point of safety on ground floor in an orderly manner in the quickest possible time without causing panic and stampede. The procedure should also ensure positive proof of every individual from all the floors having reached the place of safety.
- 2) In case of any invalid, aged, ill or injured guests who are not in a position to come down, prompt assistance should be given to them for evacuating the place of safety.
- 3) Every floor shall have Floor Marshal assisted by two Dy. Floor Marshals in assisting and supervising the evacuation.
- 4) Before leaving the floor, the floor Marshal/Dy. Floor Marshal will search all the remote places, cabins, toilets, blocks, etc.
- 5) Floor Marshal/Dy. Floor Marshal will organize evacuation through staircase.
- 6) Floor Marshal/Dy/ Floor Marshal will arrange for assistance as required. They will also organise to rescue the trapped persons/guests with the assistance of fire service staff and their colleagues.
- 7) The evacuated occupants will be assembled at a place of safety on the ground floor and the floor Marshal/Dy.Floor Marshal will take a count to detect any missing guest/person.
- 8) In case of evacuation of the entire building, floor Marshal/Dy.Floor Marshal will assemble the guests in groups, floor-wise.
- 9) On receipt of orders for evacuation, the occupant/guest shall reach the nearest staircase for going down as per the instructions of the Floor Marshal/Dy. Floor Marshal without any panic or shouting. They should not wait any time nor they should create any panic. They should follow the instructions of the Marshal/Dy. Floor Marshal, scrupulously.
- 10) The floor Marshal/Dy. Floor Marshal, before leaving through a staircase will ensure that the staircase is not affected by hot gases and /or smoke.
- 11) Lift shall not be used at the time of evacuation.
- 12) Floor Marshal/Dy. Floor Marshal should be the last person to leave the floor and would report to security control room accordingly before leaving the floor.
- 13) Once in the staircase, no one should return to the floor for collecting their belongings or for any other purpose.

- 14) While in the staircase, the occupants should break-up into two lines, one line to move downwards along the railing/outer wall and other along the main wall of the staircase.
- 15) The occupants/guests should assist the other persons who might have overcome by smoke or also requiring any assistance.
- 16) All the occupants should scrupulously follow the instruction given by security control room on public address system.
- 17) In case of fire or smoke noticed by an occupant before actuation of automatic detection system, he should actuate manual fire alarm available nearest to him and report to the floor Marshal / Dy. Floor Marshal without any loss of time who will take steps to combat the fire and inform Security Control Room accordingly.
- 18) Floor Marshal shall always keep Security Control Room informed about the developments of fire and other associated hazards in his knowledge. As far as possible, he should order evacuation of his floor on getting orders from Security Control Room. In case he is not in a position to contact Security Control Room and if he considers evacuation essential, he may take decision for the evacuation of the floor and inform Fire Control Room as soon as possible.

GUIDELINES FOR USING LPG SAFELY

Liquefied Petroleum Gas (LPG) stored as a liquid under pressure in cylinders, is widely used in Kitchen/Canteen as cooking gas. The main hazards associated with LPG are fire or explosion in case of even minor leakage. In case of major leakage in confined spaces, asphyxiation due to deficiency of oxygen may also result. LPG being colourless and odourless, a distinctive foul odour is added to enable easy detection of a leak. As LPG vapour is heavier than air, these vapours accumulate at lower levels and a fire or explosion may result.

Safety While Taking Door Delivery

- Check whether valve-sealing tag is intact and safety protection caps are in position.
- Check leakage from valve by applying soap solution.

Safety While Changing Cylinders

- Put out all fires in the room
- Switch off all electric appliances
- Check for leakage from the rubber tube connections by applying soap solution
- Never light a matchstick to check the Leakage
- Leave changing of new cylinder to trained person
- Don't drag, roll or drop the cylinders
- Open the windows for free ventilation
- Preserve safety protection cap

Safe Usage

- Always keep cylinder in upright position, away from any source of heat, in a well-ventilated place. While moving cylinder, keep it upright.
- Don't tilt it to draw the last bit of gas. No extra gas can be obtained by tilting or shaking or immersing in hot water.
- Position stove/burner above the cylinder
- To light the burner, open the cylinder valve, hold a lighted match stick (or gas lighter) over the burner and only then turn the knob of the burner on.
- To turn off the burner, first close the cylinder valve and then the burner knob.
- When the stove is not in use, keep the cylinder valve closed. Check this particularly every night and whenever you leave the kitchen.
- If the flame goes out during use, do not relight it immediately. First close the cylinder valve and burner knob. Open all doors and windows. Allow time for leaked gas to dissipate. Only then relight the burner.
- Do not use synthetic fabrics (nylon, teryline etc..) while operating the stove. Wear cotton dress.
- Keep children/ untrained persons away from stove & cylinder

- Use dry pot- holders when handling pans on the stove. Do not use trailing towels, aprons etc.
- Never leave the stove/burner unattended when it is in operation. Cooking materials may overflow on the burners, extinguish the flame and leakage of gas will occur. Accumulated gas could get ignited.
- Never try to repair or adjust any part of the gas installation or allow untrained persons to do so.
- Do not position shelf/cabinet above the stove.
- If your stove is near a window, do not use curtains they may blow over the burner and catch fire.

In Case You Suspect LPG Leakage

- Close burner knobs and cylinder valves and refit safety protection cap.
- Extinguish any open flames
- Don't light a match stick or bring in other ignited material
- Open windows for free ventilation.
- Do not touch electrical switches.
- Do not tamper with the installation
- Immediately contact your distributor and the fire brigade. Keep their phone numbers handy.

* * *

GUIDELINES ON FIRST AID

First Aid refers to the emergency treatment given to a person suffering from an accident or sudden illness until a doctor attends. First Aid has three important aims viz; preserve life, promote recovery and prevent worsening of the casualty's condition.

TIPS FOR FIRST AID

ARTIFICIAL RESPIRATION (MOUTH TO MOUTH):

If Breathing has stopped, artificial/manual respiration can be performed but former method will be carried out by experienced person.

Basic Life Supports: Airways, Breathing, and Circulation.

Airway:

Lay victim on his back. If any foreign matter is in his mouth, turn head to one side, force mouth open and wipe it out with fingers. Tilt head as far back as possible by holding the crown of the head with one hand and pull the chin. This makes air passage clear to his lungs.

Breathing:

Keeps his head tilted backward and separate lips with thumb. Open your mouth widely and place it tightly over his mouth. Press your cheek against his nostrils to prevent air leakage. Watch the victim's chest as you blow, when it rises take your mouth away and let him breathe out naturally. Listen to the air being exhaled. Make the first ten breaths deep and at a rapid rate to give a good quick supply of life giving oxygen.

Circulation:

If victim doesn't respond to the above method start the circulation method. Stop blowing for a moment and press your hand (by keeping hand on hand) between naval and breast bone. Release hand pressure hand again blow air. Repeat the procedure. Never interrupt circulation more than 5 seconds.

ELECTRIC SHOCK:

Remove the patient from the source of danger. Make a rapid examination to ensure that the air passages are free, and clean them if necessary. Restore natural breathing by artificial respiration if breathing has ceased.

CUTS AND WOUNDS:

Stop bleeding (by Direct pressure; Direct finger pressure into the wound in cases of larger bleeding wound Toumiquet use only as a last resort). Wipe out the wound with clean sterile cloth. Avoid touching the wound with hands or unsterile

material. Clean the wound by running water. Apply ready-made adhesive bandage or sterile gauze and roller bandage as needed. Keep the patient quiet and get medical help.

BURNS:

Act quickly; put the affected part in cold water; Pour the water over burns that cannot be immersed. Cover with a sterilized dressing and get medical help immediately.

SUFFOCATION:

Remove the patient from the source of danger; Make a rapid examination to ensure that the air passages are free, and to clean them if necessary. Restore natural breathing by artificial respiration if breathing has ceased.

EYE INJURY:

Removal may be attended with the help of someone if foreign body is not embedded. In case of chemical burns, wash eyes with water for 15 minutes & apply sterile bandage. Don't apply oil or ointment. Send the victim to a doctor.

POISONING:

Remove the victim from the site taking precautions for the personal safety of the rescuer. Make the victim lie down and keep him quiet and warm. Remove contaminated clothing immediately and wash affected skin with plenty of water, seek medical treatment when anyone has symptoms apparently due to swallowing, inhalation or contact with skin or eyes.

FRACTURE:

Arrange the limbs in as natural position as possible without causing undue discomfort to the patient. Apply splints of any rigid material long enough to extend beyond the joints above and below fracture. Fasten splints firmly with bandage at least at three places. Transport the victim on the rigid frame to hospital. In neck fracture cases it is advisable to get a doctor to the scene for danger to life is great.

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REFERENCES

1. **IS 13716: 1993 – Fire Safety in Hotels – Code of Practice**
2. **IS 12349:1988 – Fire Protection – Safety Signs**
3. **IS 2190: 1992- Selection, Installation & Maintenance of First Aid Fire Extinguishers- Code of Practice**
4. **IS 9457: 2004 - Safety Colours & Safety Signs- Code of Practice**
5. **National Building Code of India, Second Revision, 2005 (Part 4- Fire & Life Safety)**

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