

Fire Safety in Schools

“O Agni, help us to gain prosperity by leading us on the righteous path, you know all our thoughts and actions. Redeem us from all our sins and evil ways. We bow before you with gratitude”.

- Rigveda

How to Call Fire Brigade

- Remember that every minute is valuable once fire breaks out.
- Dial 101 or 108 your nearest police station
- Tell your name, address, telephone number and land marks to identify place of fire.
- Tell what is on fire and place of fire.
- Keep the phone receiver and wait for confirmation.
- Do all these things coolly and calmly.
- Avoid false calls; it will delay really needy people's calls. This may be your own relative or friend.

FIRE PREVENTION DO IT FOR LIFE

ANDHRA PRADESH FIRE AND EMERGENCY SERVICES

FIRE SERVICE WEEK

Six decades age:

On Friday, April 14, 1944, the Cargo vessel S.S. Fort, Stikine, carrying ammunitions, caught fire and exploded at Victoria Dock, Bombay. The holocaust that followed took a heavy toll. Hundreds of men from the Bombay Fire Brigade

fought the blaze. For 66 of them, it was the last CALL. Today we pay homage to those courageous men. And so that they may not have laid down their lives in vain. Let us dedicate ourselves to the fight against fire.

Our Pledge Today

- To do our utmost to prevent fires
- To save lives and property
- To be on constant alert against fires
- To help others escape, without panic
- To thus prevent human and economic National Prosperity

Our Objectives

- To effectively fight fire and conduct rescue operations at all times need
- To increase public concern for safety and prevention of fire accidents and spread the message of Fire Prevention.
- To formulate codes of discipline for preventing fire accidents.
- To guide various sections of society in setting up fire prevention system.

Fire Easy to Prevent. Hard to Fight.

ALL YOU SHOULD KNOW ABOUT FIRE

INTRODUCTION

The invention of fire was turning point in the human race quest for safety and security. Fire is a natural phenomenon and even spontaneous combustion requires no human help. What the human race did was to recognize the value of fire for heating their food and warming their homes or living area, and then eventually using it to, create engines of commerce and weapons of war. Although the human race did not invent fire, the greatest challenge is to learn to manage fire and to prevent it from destroying its user. For this, we have to understand, what fire is and what its true nature is.

WHAT IS FIRE?

Fire, we have to know that Fire is fast, hot, dark and deadly. In less than half a minute, fire can get out of control and turn into a major fire.

Within few minutes the place will be covered with deadly smoke, poisonous gases and enormous heat.

Fire occurs mostly when we are negligent, careless and asleep. In case of fire, do remember that, there is only enough time to escape. Fire spreads quickly and we should never waste time to grab valuables.

HEAT IS MORE THREATENING THEN FLAMES.

In case of fires, the temperature can do upwards from 600 degree Celsius whereas our human body can tolerate heat only up to 50 to 60 degrees. Heat alone can kill. Inhaling hot air will scorch our lungs and our clothes will also melt with our skin.

FIRE IS DARK AND DEADLY:

In case of fires the electricity will go off. Fire starts bright but soon turns out to complete darkness and deadly produces thick black smoke which contains deadly Carbon monoxide and other toxic gases.

Fire eats up the oxygen and in oxygen depleted environment, we feel disoriented, disorganized and drowsy.

Do Remember: Smoke is deadlier than Fire.

THEORY OF FIRE EXTINGUISHMENT

In simple terms, fire is defined as an exothermic chemical reaction accompanied by the emission of heat and light! The important ingredients for fire are Heat, Air and Fuel and we refer to this as a fire triangle.

As we said earlier, the combination at right proportion of air and fuel vapour and on application of sufficient heat source to sustain chain reaction, the fire takes place. The reverse is the basis of fire extinguishment that is the removal of any one of the ingredients, the fire will be extinguished.

THE METHODS ARE:

- Cooling - Reduction of heat, on application of water.
- Smothering of blanketing – Removal of air.
- Starvation – Removal of fuel.

What is the best extinguishing media for all types of fires except for eclectic fires, oil (Hydro carbon) fires and metal fires.

Water is inexpensive, readily available, conveniently stored and transported. It can be easily pressurized to be used as an effective water jet or for that matter can be used in any form like fog, spray, etc. as per our requirement...

Water has the ability to absorb large amount of heat from fire and thereby it cools the fuel below its ignition temperature. Further, the steam produced pushes away the air above and this has a smothering effect.

We know that, petrol, diesel and other hydro carbons are lighter than water and in cases of fire involving hydro carbons-Directing water jet will not be effective as water sink in the oil and the spillage of oil on water surface will fuel further spread of fire and hence we should not use water on oil fires.

Instead we should use foam, which contains 3 parts of foam concentrate and 97 parts of water because it has a blanketing and cooling effect over fire surface.

USE OF FIRST AID FIRE EXTINGUISHERS

We can see those fire extinguishers at cinema halls or other public buildings. We know that, they are used to extinguish fire at its incipient stage. (Starting)

They are easy to handle and convenient to store and can be used at times of emergencies. But they require regular maintenance. Training is essential for effective use of fire extinguishers.

We use various types of extinguishers to extinguish different types of fires.

DIFFERENT TYPES OF FIRE EXTINGUISHERS ARE:

- | | |
|----------------------|------------------------------|
| 1. Water type | 2. Foam |
| 3. DCP and | 4. Carbon – di-oxide. |

ELECTRIC FIRES

DO YOU KNOW, WHAT IS ELECTRICITY?

To know that, we have to take a coil of wire and rotate it within the magnetic field of a magnet, then we get electricity.

With the same technique, the force of water or the pressure of steam is used to rotate the turbine to generate large quantities of electricity.

In the modern world we cannot imagine a life without electricity. But this wide spread usage is accompanied by dangers also. When we go near live wires. Touch accidentally we will get a shock.

WHAT IS A SHOCK?

Current has a tendency to pass from higher potential to lower potential. The earth is considered to be zero potential. When we are in contact with live electric wire, the electric current. Passes through the human body to earth, that is from higher potential to zero potential.

Passage of current through the human body would stop blood supply to the brain and can be fatal.

Another danger in the use of electricity is the electric fire.

ELECTRIC FIRE STARTS DUE TO:

- Arcing or overheating of electrical circuits.
- Defective Wiring, Earthing.
- Sub Standard fixtures and misuse of appliance or wrong connections etc....

We know that water will conduct electricity and hence water or foam should not be directed against live electric wires.

The extinguishing media which is non conducting and protects the costly equipment alone should be used for protect the costly equipment alone should be used for these types of fires. Carbon-di-oxide, the non conducting extinguishing media can be effectively used for these types of fires.

Incase of Electrical Fires, Switch off the power supply at once and call for help. Use sand to put out the fire.

Remember: Never use water on live electrical appliance.

Electrical Safety: Some practical tips.

Use the Right Fuse / Miniature Circuit Breakers (MCBS)

The fuse is designed to stop overheating if the wrong fuse is fitted and there is a problem, a fire could occur.

Wire plugs carefully

The outer covering of the power lead should go inside the plug and be secured there. Inside the plug the wires should be firmly in their places.

Don't Overload Sockets:

If too many appliances draw power from one socket, it can be overloaded and start overheating.

Throw away damaged cables:

If a power lead has a crack or a hole, stop using it. Never mend it with insulating tape. Never join two pieces of power cable your self.

Never run cables under mats or carpets:

They can ware through and no one will know.

Important tips to the children: Remember Electricity can be dangerous.

Never put anything in to an electrical outlet, not even while playing. Never play with electric cords.

Never stick any thing into an electrical socket.

Never take apart or try to fix electrical things.

Tell a trusted adult immediately about any electrical appliance that starts emitting smoke, smelling or fuming or makes sparks or funny noises.

Don't fly kites near power lines.

Turn off lights, stereos, TVs and other electrical equipment when you have finished using them.

In case of air electrical shock:

Loosen all clothing and arrange for clear breath by holding little back wards and see that tongue should not obstruct breathing.

Artificial breathing should be attempted too.

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FIRE PREVENTIVE MEASURES FOR SCHOOLS

School Management should spend time developing long-term workable and effective strategies to reduce hazards and the risk of a fire starting. At its simplest this means separating flammable materials from ignition sources.

You should consider:

- Arson.
- Housekeeping.
- Storage.
- Dangerous substances: Storage, display and use
- Equipment and machinery.
- Electrical safety.
- Smoking.
- Managing building work and alterations.
- Existing layout and construction.
- Particular hazards in corridors and stairways used as escape routes.
Insulated core panels.
- Restricting the spread of fire and smoke and
- Help for people with special needs.

Premises can be targeted either deliberately or just because they offer easy access. Arson is a particular problem in schools with most likely to be started by pupils, ex-pupils or those with a knowledge of the school.

Fires started deliberately can be particularly dangerous because they generally develop much faster and may be intentionally started in escape routes. Of all the risk-reduction measures the most benefit may come from efforts to reduce the threat from arson.

Measures to reduce arson may include the following.

- Deter unauthorized entry to the site by limiting site entrances, providing appropriate boundary security and implementing controlled site access.

- Thoroughly secure all entry points to the premises, including windows and the roof, but make sure that this does not compromise people's ability to use the escape routes.
- Ensure the outside of the building is well lit.
- Reduce the opportunity for an offender to start a fire by reducing concealed entrances or areas which offer cover.
- Make sure you regularly remove all combustible rubbish.
- Do not place rubbish skips adjacent to the building.
- Do not site wall-mounted waste bins beneath windows or on walls covered in combustible cladding – in general secure waste bins in a compound separated from the building.
- Do not allow combustible displays or storage on the internal windowsills of ground floor rooms; secure all storerooms, staff restrooms, the head teachers office and general office areas against intrusion at the end of the working day.
- Secure flammable liquids so that intruders cannot use them.
- Reduce the scope for potential fire damage by limiting the availability of easily ignitable materials and the opportunity for fire spread through the premises; maximize the use of video surveillance; encourage staff to report people acting suspiciously.
- Promote good relations with neighbours who overlook your premises – they can be your eyes when the premises is unoccupied, and
- Do not park vehicles next to windows or doors opening into buildings.

Good housekeeping will lower the chances of a fire starting, so the accumulation of combustible materials in premises should be monitored carefully. Good housekeeping is essential to reduce the chances of escape routes and fire doors being blocked or obstructed.

Refuse

Waste material should be kept in suitable containers prior to removal from the premises. If bins, particularly wheeled bins, are used outside, they should be

secured in a compound to prevent them being moved to a position next to the building and set on fire. Skipt should never be placed against a building should normally be a minimum of 6m, away from any part of the premises.

If you generate a considerable quantify of combustible waste material then you may need to develop a formal plan to manage this effectively.

Close down procedures

To reduce the risk of a fire occurring I your premises out of normal hours, it is important that proper close down procedure are applied, particularly in higher risk areas close as kitchens, laboratories and workshops. Close down checks could include checking that:

- Refuse / waste has been removed from the premises and placed in secure storage.
- Flammable materials are locked away.
- Equipment is secured.
- Internal doors are closed and
- External doors have been secured, ensuring this does not effect the means of escape for anyone that may use the premises outside of the normal working hours.

House Keeping:

Many of the materials found in education premises will be combustible. If your premises have inadequate or poorly managed storage areas then the risk of fire is likely to be increased (see Figure13). The more combustible materials you store the greater the source of fuel for a fire. Poorly arranged storage could prevent equipment such as sprinklers working effectively.

Combustible materials are not just those generally regarded as highly combustible, such as polystyrene, but all materials that will readily catch fire.

However, the quantities kept and the storage arrangements, the risks can be significantly reduced.

In laboratory areas, the retention of large quantities of flammable liquids or chemicals, especially if not stored in proprietary cabinets, can increase the hazard. Such readily available flammable materials which need storing when not in use. This is likely to include items such as audio visual equipment (e.g. televisions, video / DVD players, etc.) and materials used for class demonstrations (e.g. basic artwork materials, books, scientific equipment etc.) and material used for appropriate storage of these materials and make provisions where necessary this should not be in circulation / escape routes.

Poorly managed storage areas often become over-stocked or dumping areas for unwanted material. Do not pile combustible material against electrical equipment or heaters, even if turned off for areas where combustible materials are stored.

Consider the following to reduce these risks:

- Ensure storage and display areas are adequately controlled and monitored.
- Use fire-retardant display materials wherever possible (suppliers should be able to provide evidence of this).
- Ensure Electrical lighting used as part of the display does not become a potential source of ignition, and
- Do not use circulation escape route for storage.

Furnishings, upholstered seating, cushion and art materials.

When stored in bulk, certain types of cushioning (e.g. as used for a sports day) and some art materials pose a risk of rapid fire growth and should therefore be stored in a fire resisting container or room.

Scenery store, storage enclosures and open stage storage

Because scenery often comprises combustible materials, you need to take particular care with its storage and, in particular, storage on an open stage.

Only materials which you know are not combustible should store on an open stage, otherwise such materials should be stored in a 30 minute fire resisting storage enclosure when they are not in current use. If in doubt you should seek specialist advice.

Dangerous substances:

Storage, display and use.

Specific precautions are required when handling and storing dangerous substances to minimize the possible of an incident. Your supplier should be able to provide detailed advice on safe storage and handling, however, the following principles will help you reduce the risk from fire.

- Substitute highly flammable substances and materials with less flammable ones.
- Reduce the quantity of dangerous substances to the smallest reasonable level necessary for running the business or organization.
- Correctly store dangerous substances, e.g. in a fire-resisting enclosure. All flammable liquids and gases should ideally be locked away, especially when the premises are unoccupied, to reduce the chance of them being used in an arson attacks, and
- Ensure that you and your employees are aware of the fire risk the dangerous substances present and the precautions necessary to avoid danger.

Flammable liquids

Highly flammable liquids present a particularly high fire risk, For example, a leak from a container of flammable solvents, such as acetone, may produce large quantities of heavier than air flammable vapors. These can travel large distances, increasing the likelihood do their reaching a source of ignition well away from the original leak such as a basement containing on automatic timers.

Flammable liquids stored in plastic containers can be a particular problem if involved in fire because they readily melt, spilling their contents and fuelling rapid fire growth.

The risk is reduced by ensuring the storage and use of highly flammable liquids is carefully managed that materials contaminated with solvent are properly disposed of (see Figure 14) and when not in use, they are safely stored. Up to 50 liters may be stored in a fire-resetting cabinet or bin that will contain any leaks.

LPG storage and use

Where LPG in cylinders or cartridges is present, you need to take particular care to minimize the possibility of its involvement in a fire. The total amount of LPG should be kept to the minimum necessary to meet your needs.

Keep LPG cylinders both full and empty in a property designed, safe location, either in the open away from the premises or in a separate building that is dedicated for LPG where.

- They cannot be interfered with.
- They can be kept upright (with valve protection fitted).
- They are aware from sources or ignition and / or ignitable materials; and
- They are aware from any corrosive, toxic or oxidant materials.

Piping

Piping conveying gas or flammable liquid (e.g. into science or engineering laboratories) should be, as far as practicable, or rigid metal. Any necessary flexible piping should consist of material suitable for the gas or liquid being conveyed it should be adequately reinforced to resist crushing and withstand the maximum internal pressure to which it may be subjected. If possible, each laboratory should be fitted with an isolating valve to enable gas supplies to gas taps on benches to be shut off at the end of the day. If in doubt you should seek advice from a competent person.

Electrical safety

Poorly installed and maintained electrical equipment can be a significant cause of accidental fires. The main causes of fire are:

- Overheating cables and equipment, e.g. due to overloading circuits, bunched or coiled cables or impaired cooling fans.
- Incorrect installation or use of equipment.
- Damage or inadequate insulation on cables or wiring.
- Combustible materials being placed too close to electrical equipment which may give off heat even when operating normally or may become hot due to a fault.
- Arcing sparking by electrical equipment.
- Bunched cables passing through insulation which can generate excessive heat, and
- Lack of maintenance or testing.

All electrical equipment should be installed and maintained in a safe manner by a competent person. If portable electrical equipment is used. Including items brought into a workplace by staff, then your fire risk assessment should ensure that it is visually inspected and undergoes portable appliance testing ('PAT') at intervals suitable for the type of equipment and its frequency of use. If you have any doubt about the safety of your electrical installation then you should consult a competent electrician.

Issues to consider include:

- Overloading of equipment.
- Correct fuse rating.
- PAT testing and testing of the fixed installation.
- Protection against overloading of installation.
- Protection against short circuit.
- Insulation, earthing and electrical isolation requirements.
- Frequency of electrical inspection and test.
- Temperature rating and mechanical strength of flexible cables.
- Portable electrical equipment.

- Physical environment in which the equipment is used (e.g. wet or dusty atmospheres), and
- Suitable use and maintenance of personal protective equipment.

All electrical installation should be regularly inspected by a competent electrical engineer appointed by you, or on your behalf.

Electricity generating plant and mains supply transformers should be placed in a room which is not used by the public, and does not communicate directly with any other part of the building to which the public may be present and which is of fire-resisting construction throughout (except where there are windows, skylights and openings communicating directly with the open air).

Displays are often located in corridors and in entrance foyers, and generally comprise materials such as paper, cardboard and plastic which provide a means for the rapid spread of fire.

You should evaluate what material could ignite first and what would cause the fire to develop and spread, and assess how materials used in temporary or position them accordingly. To reduce the risk of fire spread, you should consider the following.

- Avoid the use of displays in corridors and foyers.
- Minimise the size and number of display areas to discrete, separate areas.
- Do not put displays down stairways which are part of a designated escape (i.e. dead-end conditions).
- Treat displays with proprietary flame-retardant sprays.
- The use of displays away from curtains, light fittings and heaters.
- Keep displays away from ceiling voids which may lack fire barriers.
- Ensure that there are no ignition sources in the vicinity, and
- Ensure displays do not obstruct escape routes or obscure fire notices, fire alarm call points, firefighting equipment or escape signs.

If disabled people are going to be in your premises then you must also provide a safe means for them to leave if there is a fire. You and your staff should be aware that disabled people may not react or can react differently, to a fire warning or a fire. You should give similar consideration to others with special needs such as parents with young children or the elderly.

FIRE SAFETY TIPS:

In the event of fire, remember time is the biggest enemy and every second counts. Escape first and then call for help and also, remember fires are scary and confusing. They can be loud, burn very fast and their smoke makes a room very dark.

PLAN YOUR ESCAPE

- The best escape plans have two ways to get out for every room.
- While escaping, stay to the floor, smoke rises during a fire. The safest air is down below.
- The fire escape plan should include who gets out first and where to meet once outside. Then practice the plan.

Caution: The members with disabilities may need special help.

Before opening any door in a fire, feel it first. Try to bang on the door at the back of the hand. If it is hot, there may be fire on the other side. Try to get out another way.

Alert others to the emergency, yell 'Fire' Bang on doors of others if you can.

Remember: The lights may not work during a fire. Know how to get out in the dark. Practice feeling your way out with your eyes closed.

Never stand up in a fire, always crawl low under the smoke and try to keep your mouth covered. Stay outside no matter what. Don't go back for anything. It may cost your life.

If your clothes catch on fire, **STOP, DROP AND ROLL.**

If you run around, you will only fan the flames and make them burn faster. Lie down. This makes it harder for the fire to spread. It also reduces the effect of flames on your face and head as the flames burn upwards.

Once you are down and rolling, you can wrap a rug, blanket, towel or other heavy material to help them to put out the flames on their clothes.

HERE ARE SOME OF THE IMPORTANT FIRE SAFETY RULES FOR CHILDREN:

- Never play with matches or lighters.
- Never play with crackers without adult help.
- Never handle Petrol, LPG or other liquids that will burn.
- Always be careful around a stove, heater or open fire.
- If someone catches fire, get adult help or call 101.

Remind your parents to turn pot handles toward the center of the stove. They should never hang over the edge where someone could bump into them and knock.

HOW TO CALL THE FIRE AND RESCUE SERVICES:

In major towns, for calling Fire Services, we are using the toll free number 101/108 or the nearest power station.

During emergencies, while calling Fire Service be calm and give necessary details regarding the nature of fire, place of occurrence, landmark places if any and other details in a calm and measured tone.

Don't hang up the phone until asked to do so; the person at the other end may require additional details.

EMERGENCY PLANS

School emergency plan should be appropriate to the Premises and should include the following:

- How the students/teachers will be warned if there is fire.

- What staff/wardens should do if there is fire?
- How guest/residents should do if they discover a fire.
- How the evacuation of the premises should be discover a fire.
- How the evacuation of the premises should be carried out.
- Where the people should assemble after they have left the premises and procedure for checking whether the premises have been evacuated.
- Identification of key escape routes, how people can gain access to them and escape from them to a place of total safety.
- Arrangement for fighting the fire.
- The duties and identity of staff who have specific responsibilities of there is a fire.
- Arrangement for the safe evacuation of people identified as being especially at risk, such as those with disabilities, children, and lone workers.
- Specific arrangements, if necessary, for high risk areas.
- Contingency plans (e.g. Restrictions on the use of the building) for when life safety system such as evacuation lifts, fire detection and warning systems, sprinklers or smoke control systems are out of order.
- How the fire services will be called and who will be responsible for doing this.
- Procedures for meeting the fire and emergency services on their arrival and notifying them of any special risks. e.g. the location of highly flammable materials, and

FIRE RISK EVALUATION

- Evaluate the risk of fire occurring in the school.
- Evaluate the risk to people from a fire starting in the premises.
- Remove and reduce the hazards that may cause a fire.
- Remove and reduce the risk to people form a fire.

PERIODICAL CHECKS OF FIRE SAFETY AND MAINTENANCE OF RECORDS.

- Testing and checking of escape routes and ensuring that they are maintained free of obstructions and are in safe usable condition at all times.
- Testing and maintenance of fire extinguishers, hose reels, fire alarm systems, fire blankets, fire pumps, emergency lighting etc.,
- Testing and maintenance of emergency lighting systems.
- Maintenance of exit signs and ensuring their proper citing.
- Recording and training of relevant people and fire evacuation drills.
- Maintenance of records on the above for verification by the Fire Department Officials.
- Maintenance and audit of any system that are provided to help the fire and rescue service.

SCHOOL FIRE DRILLS

Schools are built to be safe from fire but serious fires do occur in these buildings also. If a fire does start, the students must have the ability to safely get out of the buildings. It is possible only if you formulate the fire drill and regularly practice it. That is why, schools must have fire drills.

The responsibility to formulate the fire drill rests with the concerned Principal/Head Masters of the School and a fire officer should watch your school's fire drill, evaluate and give advice.

OBJECTIVES OF THE FIRE DRILL:

Be Orderly: The persons who are supposed to be in danger act in a calm and orderly manner. Time counts in fire emergency and confusion can be dangerous.

Helping Others: The means of escape that is, the exits are used in accordance with a predetermined and practiced manner. Every room in a school ideally must

have two exits or two ways to get out of the room so that you can escape even if an exit is blocked.

Identification of the bell sound: Your school fire alarm – a continuous bell sound – should sound differently and from usual school bell sound. You must have to learn that sound, so that you can respond quickly in case of emergencies.

When the bell sounds, stop what you are doing and listen to teachers, when the fire alarm sounds, listen to your teacher or other adult supervisor and act per their instructions.

EXIT Safely: Walk out of the class room quickly and quietly in an orderly manner. Do not run. Single row should be formed. From the corridors, double line may be formed. Walked to your exit and go on to your meeting place outside the building. Stay with the group and do not leave the meeting place. Roll Call should be taken.

Get out and stat out: Do not go back inside the building for anything. Wait until your teacher says it is safe to go back inside.

Fire drills are serious: Real Fires are dangerous and you should know what to do. Treat every fire drill as if it were the real thing. Practice escape drills at home.

Some of the important codal provisions relating to fire safety in educational institutes are highlighted here for ready reference: (for details kindly refer IS 14435:1997)

- 1) No temporary structure such as tents or with thatched construction should be allowed for educational institutions.
- 2) All external shell and load bearing elements or the buildings housing the educational institutes of permanent nature shall have four hours of fire resistance rating while other non-load bearing elements shall have at least 2 hours fire resistance rating. (Fire resistance rating – ability to with stand fire).

- 3) Exit: Exits from the upper floor should be so located that no points in the floor are more than 30 meter from the nearest exit. (15m from deadened Corridors).
- 4) There shall be at least two separate exits available in every floor area. Exits shall be remote from each other as practicable and so arranged that there are no pockets or dead ends of appreciable size in which occupants may be trapped.
- 5) Every room with a capacity of 45 students shall have at least two door ways.
- 6) The height of the corridors and passage way shall be not less then 2.4 meter.
- 7) No exit doorway shall be less than 1m in width and that the width of assembly hall doorway shall be not less than 2 meter. The height of door shall not be less than 2 m. These shall be generally opening outwardly. Overhead or sliding door shall not be installed.
- 8) Staircase: All internal staircases, lifts, lobbies and corridors should be adequately ventilated and illuminated.
- 9) Any building having an area of more than 500 square meter on each floor and 15 m in height shall have at least two staircases of enclosed type; (Educational institutions are not allowed beyond 30 m in height) at least one shall be open space or to an open space, place of safety.
- 10) No staircase shall be allowed round a lift Shaft and no combustible storage or gas pipeline be laid on the stairway.
- 11) As per the provisions followed in the educational buildings.
 - For every 50 No. of Students 1 meter width stair case is required ex. If one upper floor as 200 students aggregate staircase width required is $200/50 = 4$ meters.
 - The width of the internal staircase shall not be less than 1.5 m.
 - The width of the treads shall not be less than 30 cm and shall be provided with non slippery flooring.

- The height of the riser shall not be more than 15cm and the number shall be limited to 15 per light.
- Height of the railing shall be more than 1m and the gap between the verticals should not exceed 20 cm and in case of buildings used by the small children it shall be reduced 15cm.
- All external stairs shall be directly connected to the ground.

12) Entrance to the external staircases shall be separate and remote from the internal staircase.

13) The fixed fire fighting installations shall be provided as per the guidelines issued in part 4 of National Buildings Code of India 2005.

First aid fire fighting appliances shall be provided, installed and maintained as per the norm and as per the advice of the inspecting Officer. (Refer BIS 2190:1992).

FREQUENTLY ASKED QUESTIONS

1. Is it necessary to get No Objection Certificate for Schools/Colleges?

As per section 13 of A.P. Fire Service Act 1999 and Rule 15 of AP Fire and Emergency Operations and Levy of fee Rules 2006, it is mandatory to get No Objection Certificate for the Construction of a school building from the Director General of Fire Services or any member of the service duly authorized **before construction**, if the service of the building is 6metres and above or if the plot area is more than 500 sq.metres.

2. What happens if you do not take the No Objection certificate from Fire department?

- I. The Licensing authority will not issue the permission.
- II. Action can be initiated as per section 31 of the AP Fire Service Act.

3. To whom should I apply for the No Objection Certificate?

If the building height is less than 15 meters you should apply to the District Fire Officer concerned for No Objection Certificate. If the height of the

buildings is 15 meters and above you should apply to the Directors General of Fire and Emergency Services.

4. What are the requirements for applying for No Objection Certificate?

- a. 5 sets of plans of all floors duly earmarking the a) open spaces all round the proposed building b) staircase with the width c) Fire safety measures as per table 23 of part 4 NBC of India 2005 (Plans should be as per scale and should be not less than (1:100).
- b. Checklist duly filled (down load form www.fireservices.ap.gov.in)

Note: You have to download the appropriate checklist depending on the height of the viz Checklist for educational buildings below 6m height/ checklist for buildings above 6m height but below 15 meter height/ form no 16 for buildings of 15 meter and above height.

Note: It is advisable to get the checklist filled by your architect/engineer as incomplete checklist may lead to the rejection of the application. The checklist should be signed without fail by the concerned.

- c. A non refundable fire precaution fee @Rs.10/- per sq. meter of total built up area in all floors including Basement and stilt floor in the form of Chalan under the Head of account 0070 109-SH(02) Fees of Fires-001 other receipts.
- d. 15% of the estimated cost of the fire safety installation and equipment in the form of Bank guarantee drawn on any Nationalized bank for a periods of 5 years guaranteeing provision and satisfactory maintenance of mandatory fire precaution.
- e. An undertaking on Rs. 100/- Stamp Paper (Form 17).

Note: For further details the A.P. Fire Services Act. 1999 and Rules 2006 may please be referred.

5. **Whether parking stilt height should be taken into consideration for calculating the height of the building?**
6. **What is the procedure for getting No Objection Certificate for the existing school buildings?**

Same procedure as outlines above has to be followed. If there is a deficiency in open spaces (for buildings below 15 meters height, additional fire safety measures and staircases as recommended by the department need to be provided. Construction of additional floors is permissible only if the mandatory set backs are provided i.e.,

Building height	Set back required
Below 15 m	6 m all round the building
15 m and above	Refer Table – IV of Revised Building Rules 2006

It is desirable that the fire safety system viz., hose reel, terrace tank, emergency lighting, fire extinguishers etc need to be installed at the earliest in your own interest. Renewal is not installed. For new construction occupancy NOC has to be obtained from the department after providing all the safety measures as per provisional NOC.

7. **Whether it is mandatory to conduct fire drills in the educational institutions?**

It is desirable to conduct the fire drills once in 3 months or in the beginning of each term to familiarize the students/teachers/security staff about the emergency plan of action in case of fire and other emergencies. Please refer the fire evacuation drill procedure for guidance.

It is also desirable to train your security staff/employees in the usage of fire extinguishers, hose reels, fire alarms, hydrants etc.