# ELECTRICAL SAFETY GUIDELINE FOR SCHOOLS

PUBLIC UTILITIES COMMISSION OF SRI LANKA

23-12-2010

Ref: PUCSL/E/INS/Safety/School safety Guide lines

### **Electrical safety guideline for schools**

#### Contents

1.0	Purp	ose	3
2.0	Scop	e	3
3.0	Defi	nitions	3
4.0	Resp	onsibilities/Obligations	4
	4.1	Head of the school (Principal)	4
	4.2	Class teacher/Sectional head	4
	4.3	Students	5
	4.4	Contractors/Service providers	5
	4.5	All users of Electrical appliances/ /Equipment/ Apparatus	5
	4.6	Supporting staff and security personnel	6
	4.7	Responsibility on record keeping	6
5.0	Man	agement of Electrical accidents/hazard	6
	5.1	General safety precautions	6
	5.2	Requirement of special protection system for appliances/equipment	7
	5.3	Testing intervals for Residual Current Devices (RCD)	7
	5.4	Fire &Safety	7
	5.5	Access to electrical Switch Boards	7
	5.6	Extention Boards and use of Extension Cords	8
	5.7	Testing & tagging of new and old appliances/equipment	8
	5.8	Electrical safety inspection check list	9
	5.9	Safe use of appliances/equipment	9
	5.10	Equipment working under hostile operating environment	10
	5.11	Rectification of unsolicited tapings and extensions	10
	5.12	Risk assessment for existing appliances/equipment	11
	5.13	Maintenance & record keeping of appliances/equipment	11
	5.14	Practices to be followed by Maintenance staff	11
6.0	Safet	y & First aid	12
	6.1	Safety Clearance	12
7.0	6.2	First Aid	13
7.0	7 1	Legel requirement	13
	7.1 7.2	Institutional requirement	13
	7.2 7.2	Report/record keeping of accidents	13
	7.5 7.1	Compensation	13
	/.+	Compensation	14

Annexure 01 – Responsibility on record keeping	15
Annexure 02 – Testing intervals for Residual Current Devices (RCD)	16
Annexure 03 – Testing & tagging of new and old appliances/equipment	18
Annexure 04 - Electrical safety inspection check list	19
Annexure 05 - Maintenance & record keeping of appliances/equipment	20
Annexure 06 - Register for damage/failed equipment	21

#### 1.0 Purpose:

To ensure the safety of all students, staff, employees and contractors who use electrical equipment and appliances or who may be exposed to electrical hazards. This guideline covers the requirements associated with electrical safety, maintenance of electrical equipment, identify defective electrical equipment and prevent accidents due to electricity

#### **2.0 Scope:**

This guideline applies to all students, all staff, visitors and contractors and to all work places associated with the school.

#### **3.0 Definitions:**

For the purpose of this guideline, following definitions applies:

- *Competent person* A person who has necessary theoretical knowledge and practical skills gained through qualification and training in the relevant field and experience to under take the task prescribed by this guideline.
- *Electrical installations* A system that supplies electricity to the buildings, including the switchboards, distribution boards, fixed wiring and socket outlets.
- *Electrical appliances* A device/apparatus connected to the electrical power supply
- *Extension cords/leads* An assembly of plug intended for connection to a main outlet socket, sheath flexible cords and cord extension sockets.
- *Fixed equipment* Equipment that is fasten to a support, secured in position located in a specific location
- *General purpose outlets* Three pin wall socket outlet (used for 230 V)
- *Personnel equipment* Any privately owned equipment of plug-in type, which used in schools; examples: radios, mobile phone charges, computers etc.
- *Portable appliance testers* Is an electronic instrument that tests the equipment automatically. No technical interpretation required.
- *Residual Current Device (RCD)* Is an electro- mechanical switching device intended to isolate the power supply when there is a current imbalance at rated leakage current value of the device.

- *Power Distribution Board (Fixed in the Installation)*-An Assembly containing switches or Protective devices(fuses, Main Breaker, circuit breakers, RCD etc) associated with one or more outgoing circuits but fed through the Breaker and the RCD which are capable to handle fault level associated in the location.
- *Extension board* A device having a single plug intended for connection main outlet socket, sheath flexible cord and an assembly of one or more outlet sockets.
- *Risk management* The culture, processes and structures that are directed towards realizing potential opportunities whilst managing adverse effects.
- BS-British Standard
- *IEE*-Institute of Electrical Engineers

#### 4.0 Responsibilities / Obligations:

#### <mark>4.1 Principal</mark>

- Responsible for general and electrical safety in their own respective areas such as class rooms, laboratories, Aesthetic rooms, workshops, IT learning centers, Home science laboratories, libraries, officers, staff rooms, canteens, sport rooms, pavilions, swimming pools, shrine rooms, hostels etc.
- This includes testing and tagging of relevant appliances & equipment and testing of extension cords and multiple-socket outlets. Ensure implementation of electrical safety guideline by appointing of competent testing personnel.
- Any damaged equipment should be repaired and or replaced with the help of competent persons.
- Ensure that the testing of equipment and installations periodically and tagging & keep records for inspection. Ensure that any faulty equipment is dealt with an appropriate manner.
- Inter building wiring connection should be fasten properly and frequent observation should be done in case where animals (monkeys etc.) use such path to move around.
- Ensure not to install antenna(Television, Radio etc) close to power lines (distance from the erecting point to the power line always more than the height of the antenna structure and the allowed clearance given in the 6.1)
- Ensure not to allow crossing of high voltage (HV) line, low voltage (LV) distribution wires, stay wires and setting up of earthing system within the schoolyards. Until such lines are cleared cradle should be fixed
- Ensure that the testing of equipment and installations should be done periodically and tag & keep records for inspection.

#### 4.2 Class Teacher/Sectional head

- Visually inspect all wirings in the class room and around
- Visually inspect all electrical appliances/equipment and cords before use.
- Visually inspect all earthing leads are properly earthed. Each building should have the proper earthing system.
- Do not use two pin appliances without having RCD. RCD should be checked before using suspected or risk prone appliances
- RCD should be checked –see annexure 2
- Do not use two pin appliances unless they are Class II type (Double insulated)
- Remove any appliances/equipment with frayed cords, missing ground prongs, cracked tool casings, etc. from service
- Attached warning tags to any defective appliances/tools and remove. Do not use them until it has been properly repaired
- Avoid the use of appliances/equipment under wet conditions which influences the conductive properties
- Electrical cords/leads must be protected from damage, including damage by liquids(acid,Alkaline,salt water,rain water etc.) .Always inspect the cords for any damage before use.
- Any exposed live wires should be properly insulated; by a competent person.
- Double adaptors and piggy back plugs must not be used
- Any electrical hazards, incidents or damages to the electrical equipment should be brought to the notice of Principal
- Ensure that the testing of equipment and installations periodically and tagging & keep records for inspection.
- Ensure that any faulty equipment is dealt with an appropriate manner and better to be repaired through the competent person.
- All the exposed wire/cable joints should be insulated using proper insulation tapes.
- In the case of inspection, ensure to get the approval from the principal and the list of areas to be inspected should be given to the Principal before commencing any inspection or any alteration to the Electrical Installation in the school by a competent person. Circuit diagrams relevant to the alteration should be given to the principal.

#### 4.3 Students

- Always use electricity under the supervision of Class teacher/Sectional Head.
- Do not touch any unsecured wires, cables, connectors, appliances or equipment specially in wet areas

- Do not use two pin appliances without having RCD. RCD should be checked before use of suspected or risk prone appliances.see annexture 02.
- Do not use two pin appliances unless they are Class II type (Double insulated)
- Any lapses being noted; should be informed to Class teacher or sectional Head.

#### 4.4 Contractors/service providers

- Proper authority should be taken from the Principal/Sectional head/ Class teacher before commence of any repair works .Such work should be under taken by competent approved contractors and should be carried out after ensuring the safety of students.
- Any amendment/changes to the installation should be informed to the principal in writing together with the drawings.

#### 4.5 All users of Electrical appliances/ /Equipment /Apparatus

- Do not use damaged cords, connectors etc. where insulation has been failed.
- Covers and protecting guards are in position & secured
- Ensure the apparatus and the hands are dry and clean
- Do not pull-out a plug from a socket by pulling the cable/cord
- Always switch off the power before pulling out a plug from a socket
- Check whether the RCD are installed and working properly.
- Get the RCD checked for proper installation and check the operation(timing, capacity/rating &tripping value etc) by a competent person.

#### 4.6 Supporting staff and security personnel

- Visually inspect all appliances/equipment and wirings in the class rooms and around
- Visually inspect all electrical appliances/equipment before use
- Remove any appliances/equipment with frayed cords, missing ground prongs, cracked tool casings, etc. from service
- Attach warning tags to any defective appliances/tools and do not use them until it has been repaired by a competent person.
- Avoid use of appliances/equipment under wet conditions which may influences the conductive properties
- Electrical cords/leads must be protected from damage, including damage by liquids/chemicals
- Any exposed live wires, cables etc. should be insulated by a competent person.
- Double adaptors and piggy back plugs must not be used
- Any electrical hazards, incidents or damages to the electrical equipment should be reported to the Principal

• Ensure that a list of areas to be inspected is provided to the Principal

#### 4.7 Responsibility on Record Keeping

Please see annexure 01 for details

#### 5.0 Management of Electrical Accidents/Hazard

- Electrical accidents are caused by a combination of following factors:
  - 1. Electrical Installation systems without having a proper protection system
  - 2. Unsafe Appliances/equipment and/or installation
  - 3. School premises made unsafe by the environment
  - 4. Unsafe practices

N.B.

Avoiding above mentioned lapses and installation of appropriate Residual Current Devices (RCD's sencitivity with 20mA or 30mA.) to provide automatic disconnection of supply in the event of an earth fault(leakage of current to the ground) in an installation or any leakage current to the ground through the connected appliance/equipment. whereby it could prevent electrical hazard or any electricution.

#### **5.1 General safety precautions**

• All the electrical installations in buildings should be in accordance with BS 7671 (2008), Requirement for Electrical Installations is IEE Wiring Regulations. 17<sup>th</sup> Edition or the latest. Inspection certificate should be issued by a Chartered Electrical E ngineer that the installation wiring has been done in compliance to the above mentioned standard.

## 5.2 Requirement of special protection system for Appliances/Equipment and from lightning

- The installation of appropriate Residual Current Devices (RCDs) is to provide automatic disconnection of supply in the event of a fault in an installation or in a connected electrical appliance/equipment.
- Installation of proper MCCB to the relevant Sub Circuit could protect from over loading or from short- circuiting the circuit.
- Proper Earthing system should be available for each building.
- Install Lightning protection system for the building and its Earthing lead should be buried at least 3meters away from the installation Earthing lead.

#### **5.3 Testing Intervals for Residual Current Devices (RCD)**

This is a special protection device and to be used in workshops, laboratory, construction sites and other outdoor areas as it gives protection against shock or electrocution. Selection of the RCD should be in accordance with IEE Regulation, to avoid unnecessary tripping and safe operation. Please refer annexure 02 for details

#### 5.4 Electrical Fire and Safety

Fire fighting equipment should be available and it should be marked for the type of fire.
Type of fire :A-solid(wood,paper plastics etc.),
B-liquid (Oil , Petrol or spirit type liquids, paint etc.),
C-Gases(LP Gas,Accetiline etc
D-Metal(Aluminium,Led,etc)
Electricity.

Fire due to Electricity

Operating instruction should be available with the fire fighting extinguishers. It is recommended to use Powder Type fire extinguisher for open fire due to electricity. However, for the restricted cubicle /enclosed environment use  $CO_2$  fire extinguisher. Do not use water or water base extinguishers such as Foam etc..Foam fire extinguishes should be use for fire due to oil/diesel,petrol,kerosene etc. Don't use water. Otherwise use sand to cover fire

- Do not meddle with grounded (fallen) power line but switch off the power from the main switch and sub circuit switches and inform the electricity authority. But in extremely emergency condition, use tested and approved Rubber Gloves after switching off the power and ascertain that there is no power in the line.
- Avoid Transmission high voltage (HV) network, towers, substations and their earning system within the school premises. If it is available, it should be separated out from the fence and it should be beyond 3 meters.

#### 5.5 Access to electrical switch boards

- Approaching way to the main switch boards and other sub switch boards should be kept free from any obstructions to enable for quick access to knock off the supply in case of an emergency.
- Keep the insulated mat before the switch boards/switches where operator stands for operation

#### 5.6 Extention Boards and use of Extension Cords

- Unsolicited connection (flexible wiring) should not be taken from the power boards.
- Extension type cords that are not 3-wire type, not designed for hard usage, or that have been modified, should not be used
- Use only factory-assembled cord assembly.
- Use only cords, connection devices, and fittings that are equipped with strain relief mechanism.
- Remove plug top by pulling the plug, but not by cord
- Do not use flexible cords that have been damaged or with the un-acceptable modification.
- All socket outlets installed on extension cords should be incorporate with shutters.
- Avoid use of extension leads along walkways and corridors
- Power Boards used in the school should comply the IEE Regulation
- Power Boards should have the minimum protection features such as ,Current overload protection with the reset device
- Individual switch should be available for the Power board where their leads are more than 1.8 meters
- Power boards must be in safe location where it does not get damage due to external body .Otherwise it should be securely mounted on work bench or floor where there is no external impact on the board
- Power boards should not be over loaded (i.e. piggy back one board onto another )
- Piggy- back plugs and double adaptor should not be used as it cause high risk on safety
- Before use Power board extension leads should be checked (inspect and test) for any damage and should not cover by mats ,across corridors or other trafficable areas
- Extension cords, which are in tight coil, may overheat and catch fire
- Check all electrical plugs to make sure they fit snugly into their outlets. Plugs that are loose or that wobble in the outlet are potential fire hazards and should be repaired or otherwise remove from the service. Discolored and heated outlets, plug tops should be checked by a competent person to find out the reason and rectify or replace depend on the situation.
- Use only 12 Volts power supply for soldering iron/bouth

#### 5.7 Testing & Tagging of new and old appliances/equipment

- Testing & Tagging of electrical equipment are required only for the works in work shops, construction sites or uses in hostile operating condition.Please refer annexure 02 for details
- Old and new appliances/equipment, extension cords and multiple-socket outlets should be tested by a competent person
- Any damage appliances/equipment should be repaired or replaced if beyond repairs with the help of a competent person

- Ensure that the testing of appliances/equipment and installations periodically and tagging & keep records for inspection.
- Tagging After testing for use, it should be tagged with a durable and legible label and attached as close as practical to the plug end of the lead indicating :
- Test Date:
- 2. Next due date for test
- 3. Identification barcode
- 4. Tested By:
- Ensure that any faulty equipment is removed from the service until it repaired for safe operation

#### **5.8 Electrical safety inspection check list**

All the outlets and switches should be checked before starting the school for the year and for details, please refer annexure 04

#### 5.9 Safe use of appliances /equipment

- Visually inspect all the switches, plug bases, lamp fittings, fan regulators, fans etc. connected to the system are free from external damage /component defects in the accessories to ensure the safety
- Check whether the RCD is installed and working properly.
- Check that flexible cords are effectively anchored.
- Check that the inner cores of the flexible supply cords are not exposed or twisted
- Check that the external sheaths are not cut, abraded, twisted or damaged to such extent that the insulation is visible
- Check covers and guards are in place and secured as required by manufacturer/supplier
- Visually inspect all electrical appliances/equipment for any damage before use
- Remove any appliances/equipment with frayed cords, missing ground prongs, cracked tool casings etc. from service
- Switch off any appliances/equipment as well as plug base switch (if available) before plugging to electrical supply
- Check whether the power supply earthing system is properly grounded
- Check whether the electrical appliances/equipment earthing arrangement is properly secured
- In case of two wire system where there is no earthing conductor for the appliances/equipment should not be connected unless having the RCD protection
- Do not remove ground pins/prongs from cord and plug connected appliances/equipment or extension cords

- Use double insulated tools for live line repairs
- Ground all exposed metal parts of appliances/equipment through proper arrangement (through properly grounded plug bases)
- Use insulated ladders (fiberglass) and other tools when deals with electricity or use at least ladders of having insulated rubber caps at resting ends
- Do not use an electrical appliances/equipment for other purposes than it has been designed, whereby no longer ensure the safety features built in by the manufacture
- Do not use appliances/equipment meant to use indoor locations for out door works
- Do not use cords or tools with worn insulation or exposed wires
- Use extreme caution when working with electricity where there is water in the environment or on the skin
- Use standard pins to tap the supply from the power source
- Always switch off the power supply in case of replacement of bulbs and any apparatus
- Heavy load appliances (Refrigerators, Mixers, Iron, wet Grinders, washing machines, UPS etc with three pin plug top should be used.) must be properly earth through the installation earthing system.
- Do not allow to hang advertisement boards or any other on the power carrying poles
- Ensure to get any wiring done only by competent persons.
- Do not allow vehicle to be loaded above the height of power line within the premises
- Portable Generator should not be connected to internal wiring installation without the advice of competent person for safety reasons
- Hot water geyser should be installed by competent person for safety reasons.
- Do not use electrical extension cords or appliances near the pool without earth leakage protection system.(connected circuit should have RCD).
- Do not use electric heaters in the bathroom unless they are specially design for bathroom.
- Do not touch anything connected with electricity with wet hands or use of electrical appliances in wet places or near water, such as drier near a bath or basin containing water
- Avoid erecting flag mask/antennas near the power lines within the school premises. Otherwise, distance from the erecting point should be more than the height of the mask/pole.
- 5.10 Appliances /Equipment working under hostile operating environment
  - Use of Appliances /Equipment should not be encouraged under hostile environment since there is no such requirement arises in schools

#### 5.11 Rectification of Un-solicited tapings and extensions

• Proper authority should be taken from the Principal/Sectional Head before do any

tapings & extensions in case of special occasions such as sport meets religious festivals etc.

• Any such tapping & extensions should be done in accordance with BS 7671 (2008), Requirement for the Electrical Installations is IEE Wiring Regulations. 17<sup>th</sup> Edition or the latest.

#### 5.12 Risk assessment for existing appliances /equipment

• Risk assessment should not be encourage as the necessity of using such appliances /equipment is not very essential in schools

#### 5.13 Maintenance and record keeping

• Test and tag of relevant appliances/equipment, extension cords and multiplesocket outlets and keep relevant records for inspection and maintenance activities should be recorded and for details please refer annexure 05.

Any damaged appliances/equipment should be repaired or replaced if it beyond repairs with the help of a competent person. Maintain a register for damage/failed equipment. For details, please refer annexure 06

#### 5.14 Practices to be followed by Maintenance staff

• Maintenance group should be headed with a competent work supervisor and he should take necessary permits and ensure to follow the electrical regulations, safety of staff and the equipment.

- Arrange such works during after school hours, weekends or school holydays.
- Get the "permit to work" indicating the work to be attended together with the names of competent persons (approved competent personal).
- Switch of the Main switch and take off fuses, switch off MCBs and earth the system
- Put up the Sign Board indicating that the "Men at Working."

• After completing the work all the workers who attend the work should acknowledge in writing that the system is no longer safe to work, remove earth from live parts and normalize the system by the work supervisor.

#### 6.0 Safety & First Aide

#### 6.1 Safety

Clearance requirement for the Distribution Low Voltage Power Line (230Volts to Ground) is as follows:

Location	Clearance in Meters
Crossing of Public Road	5.5
Other than crossing of Public Road	5.2
Places where vehicle is not accessible	4.9
Service wire(insulated) to Buildings or	
between Buildings where vehicle is	3.7
accessible	
Service wire(Insulated) to Buildings or	
between Buildings where vehicle is <b>un</b>	2.7
accessible	
Above the building(avoid this situation in	2.7
the school bldgs.)-Vertical clearance	
Near the building-horizontal Clearance	1.5
Erection location of any	Always, distance from the
Post/Mast/Antenna(TV, Radio etc)	erected point of the Post/Mast to
	the power line, should be more
	than the height of the post or a
	Mast

NB-All the High voltage lines(More than 230volts to ground) should not be allowed to crosses the School premises(Buildings or Play Grounds etc.)

#### 6.2 First Aide

#### -Procedure to follow in case of an accident/shock due to Electricity

• While seeking assistance, immediately switch off the power and if it is not possible ,try to remove the patient from the power supply in most appropriate safe manner (rescue person should use appropriate gloves or at least dry paper/dry wooden plank/dry pages of a book/dry cloths etc. as a insulator in order to avoid contacting with the electrical supply through the affected person). It is also keep in mind

that only one person should be in command in the rescue operation and always use the right hand.

After rescue the patient shake his shoulders gently and speak him to test whether he is conscious or unconscious (Figure 01)



• Casualty does not show any response place the finger tips of on the casualty's forehead and the chin and back his head to open the air way. (Figure 02)



• Check the breathing for 10 seconds. Respiratory process can confirm by look, listen feel. (Figure 03).



• If the casualty is breathing, treat the casualty as an unconscious person and place him recovery position.





Step-2





•

- If the casualty is not breathing,
- Place the heel of your first hand on top of the other hand, and interlock your fingers. Leaning well over the casualty, with your arms straight, press down vertically on the breastbone and depress the chest by about 4-5 cm (1 <sup>1</sup>/<sub>2</sub> in.). Release the pressure without removing your hands from his chest. Compress the chest 30 times at a rate of 100 compressions per minutes. The time taken for compression and release should be about the same.





• Tilt the head back, lift the chin, and take a deep breath to fill your lungs with air and place your lips around the casualty's mouth, making sure you have a good seal. Blow steadily in to the casualty' mouth until the chest rises. give two rescue breaths .



• Continue this cycle of alternating 30 chest compressions with two recue breaths.

#### FIRST AID FOR BURNS

- i. Keep him away from fire and smoke
- ii. Drench Burnt area immediately with cold running water
- iii. Cover with him thick clothes
- iv. Give fluids if patient is able to swallow
- v. Never give alcohol to the patient
- vi. Direct patient to correct treatments

#### Action to be taken at Emergency of Fire, Explosion etc.

- i. Make all people known.(by operating the emergency alarm)
- ii. Stop the work engaged.
- iii. Do not be panic
- iv. Switch off the electricity supply if availability of electricity is dangerous.
- v. Assemble at the safety place known previously
- vi. Make sure all have com safely.
- vii. Use only dry powder & Co2 fire extinguishers for electrical fires.

#### 7.0 Accident reporting

#### 7.1 Legal requirement

• Inform all fatal accidents due to electric shocks to the nearest Police Station of the area and relevant electrical supply authority

- Inform to Chief Factory Inspecting Engineer. Department of labour as per Factories Ordinance
- Necessary to fill the relevant forms and forwarded to the doctor who is attending the patient
- Inform to the Commissioner for Workmen Compensation as applicable.

#### 7.2 Institutional requirement

- Anybody who suffered from a electric shock seek immediate first aid and medical attention as it may cause delayed effects
- Inform all fatal and major accidents due to electric shocks to the Zonal education office and keep the record
- Get the installation, outlets and appliances are checked by competent person . Any equipment caused the accident should be checked before re-use
- Appropriate corrective action has to be taken to prevent such incident in future
- To hold the preliminary enquiry and forward to the Zonal education office for the formal enquiry
- If there is a severe damage or Fatal, accident has to be informed to the Labor Department

#### 7.3 Report/record keeping of accidents

• All the reports & records in connection with the accident should be maintained under the custody of the Principal

#### 7.4 Compensation

• Arrangements should be made to pay the compensation (if applicable) to the affected party based on prevailing Law in the country.

#### Annexure 01

Responsibility on Record Keeping

Record	Responsibility	Location	Media	Duration
Record of Test	School	office	Hard copy	7 Years
& Tag	Principal			
Record of faulty	School	office	Hard copy	7 Years
equipment	Principal			

#### Annexure 02

Testing Intervals for Residual Current Devices (RCD)

This is a special protection device and to be used in workshops, laboratory, construction sites and other outdoor areas as it gives protection for electrocution. Selection of the RCD should be in accordance with IEE Regulation, to avoid unnecessary tripping and safe operation.

Type appliances	<b>Push Button Te</b>	st by user	Operating Time RCD tester		
and Environment					
	Portable	Fixed	Portable	Fixed	
Work shops &	Daily or before	6 months	12 months	12 months	
repair places	use which ever				
	is longer				
Healthcare,	3 months or	6 months	2 years	2 years	
Educational units	before every				
& Laboratories	use which ever				
	is longer				
Office	3 months	6 months	2 years	2 years	
Environment					
Hired	Prior to use	Not applicable	2 years	2 years	
Equipment/outside					
Repaired/serviced	Before use	Before use	Before use	Before use	
equipment					
Accommodation	6 months	6 months	2 years	2 years	
houses/Quarters					

Concert	6 months	6 months	1 years	1 years
Room/Theatre				
environment				

Note:-

Portable RCD should be use in following situations

- 1. Based on Risk assessment
- 2. Suspected power supplies where hard-wired RCD have not been provided.
- 3. In hostile or unusual environment

#### Annexure 03

Testing & tagging of new and old appliances/equipment

Testing & Tagging of electrical equipment are required only for the works in work shops , construction sites or used in hostile operating environment .As a guide example of equipment required for testing and tagging are:

Nature of Equipment	Example		
Hand held equipment	Hand held power tools		
	Hairdryers		
	Kitchen appliances		
	Laboratory equipment		
Portable equipment	Floor polishers		
	Vacuum cleaners		
	Portable lighting equipment		
	Pedestal Fans		
	Heaters		
Electrical equipments that is moved	Overhead projectors		
between operation in such a manner that	Laptop computers		
could damage the flexible supply lead(	Welding equipment/Machine		
Portable equipment with cabling system)	Extension cords		
	Power boards		
	Battery charges		
	Portable RCDs		
	Portable outlet devices		
	Isolation transformers		
Equipment used in workshops, hostile	Electrical appliance/equipment used in		
operation environment-Operating	Wet or dusty areas		
condition that are like to result in	Outdoors		
mechanical damage to the equipment or	Kitchens		
expose to moisture, heat, vibration,	Laborites with chemical fumes/liquid		
corrosive substances or dust or fumes	environment		

could	damage	the	function	of	the	Work shops.
equipn	nent					

#### Note:-

New electrical equipment is not necessary to check in accordance with the principle of safe design and manufacture but visual inspection is necessary to ensure that there is no damage occurred during transport. However, if future testing is necessary, then the tag has to incorporate. It is not necessary to test and tagged some equipment such as desktop computers and stationary office equipment as they are permanently located and due to the working environment. Frequent testing of fixed electrical equipment in safe environment is not necessary.

Following are the some of the equipment where testing and tagging is not normally required since they are used in non-hostile operating environment.

- 1) Desktop computers,
- 2) Scanners,
- 3) Photocopiers,
- 4) Lamps.
- 5) Radios,
- 6) Fridges,
- 7) Freezers etc.

#### <mark>Annexure 04</mark>

Electrical safety inspection check list

School Name:......Date......Date.....

Item	Action/Situation	Yes	No	Date
No.				<b>rectified</b>
1	All the circuit breakers in the panel are clearly labeled			
2	Circuit breaker panels are not obstructed			
3	An emergency power shut off is present			

Tested By:..... Next Date of Inspection:.....

#### Annexure 05

Maintenance and record keeping of appliances/equipment

School Name.....

Location/room ......Date of Inspection.....

Description	Building	Requireme	Visual	Tested	Observatio	Inspecte
of the	& Room	nt of Tag	Inspection	by	n	d Date
Equip./Appli	No.			Instrum		
ance				ent		

Tested By:..... Next Date of Inspection:.....

#### Annexure 06

Register for damage/fail equipment

School Name......Date of Inspection.....

Location	Description of the equip.	Danger Tag	comments	Action Repair Dispose

Tested By:..... Next Date of Inspection:.....

NB: Disposal should be done as per government circular