




Bangladesh Power Development Board

INTEGRATED MANAGEMENT SYSTEM

**(BASED ON ISO 9001:2015, ISO 14001:2015 & ISO 45001:2018
STANDARDS)**

MANAGEMENT OF FIRE EXTINGUISHER PROCEDURE

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|  | INTEGRATED MANAGEMENT SYSTEM | Document No.: BPDB-IMS-PR-081 |
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1. Purpose

This procedure ensures that throughout BPDB, an adequate number of the correct types of Portable Fire Extinguishers are readily available and that they are maintained in a serviceable condition. The location of such equipment shall be clearly identified.

2. Scope

This procedure applies to all employees and contractors of BPDB.

3. Terms and Definition

None

Abbreviations

BPDB – Bangladesh Power Development Board

MR – Management Representative

4. Roles and Responsibility


- **MR**

The MR shall be responsible for ensuring that:

- Carrying out a routine inspection of all fire-fighting equipment every month and findings recorded in relevant maintenance management program. As recommended by the vendor depending on the quality of extinguishing media, all Fire Extinguishers will be refilled and certified by third party.
- Any equipment must be withdrawn from service, if they should be found defective, discharged or in any way not fit for reason for withdrawal reported and replaced immediately with an equivalent type. The withdrawn equipment should be tested/repaired/recharged by a recognized third party and made available for return to service at the earliest opportunity.
- Ensure all personnel are familiar with emergency response procedures and receive adequate basic fire-fighting training.
- Fire extinguishers, of the correct type, are installed at the locations as specified in the Plot Plan.
- The number of fire extinguishers provided is adequate for the purpose intended.
- Ensure that each fire extinguisher is suitably identified by its equipment number.
- Copies of Plot Plan, identifying fire points and escape routes, are displayed at the following locations: Administration Building different floors.

- **BPDB EMPLOYEES**

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BPDB employee's responsibilities include but are not limited to the following:

- To maintain fire points clear of any obstructions and ensure that access to such equipment is freely available at all times. Where a problem is identified it must be reported immediately to the MR or the duty shift charge engineer.
- When fire-fighting equipment has been used details of such use must be reported to the MR and used or partly used fire extinguishers must be suitably identified.
- To ensure that they are familiar with all emergency response procedures, location of fire-fighting equipment, type and use of such equipment. They should also be sufficiently trained in basic fire-fighting techniques to enable them to take the appropriate actions in the event of a fire.

5. Procedures

5.1 INTRODUCTION

A portable fire extinguisher is a "first aid" device and is very effective while being used for small fire incidents. Most incidents start relatively small and can be controlled by the use of portable extinguishers, other than in large fire or explosion conditions. The use of fire extinguisher that matches the class of fire, by a person who is well trained, can save both lives and property. Portable fire extinguishers are installed in workplaces regardless of other firefighting measures.

It is ensured that all employees are familiar with the location and type of fire extinguishers distributed throughout BPDB. Particular attention is paid to those items of equipment located within the employees own work area.

To be of any value, extinguishers must be:


- Easy to operate.
- Readily available and clearly identified
- Appropriate to the risk being protected.
- Maintained in good working order.

i. EXTINGUISHER TYPES

There are normally 4 basic types of portable fire extinguishers. The types and color codes of such portable fire extinguishers installed are as follows:

- Black.....CO2 (Carbon Dioxide)
- Cream or White...Foam (Foam and water solution)
- Red or Blue.....Dry Chemical Powder

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ii. USE OF FIRE EXTINGUISHERS

Dry Chemical Powder is most effective against Class A, B and C type fires as it acts chemically on flames. Formulated powders must be used for D type fires specially. The powder has no cooling properties and should not be used after all flames have been extinguished to conserve supplies to deal with any re-ignition if necessary. The operator will suffer irritation to the nose, throat and eyes should large quantities be released into a confined space. It is an irritant but not toxic. Dry chemical powder presents no hazard when used on or near live electrical equipment.

Foam is most effective against Class B type fires as it has excellent smothering properties. The extinguisher must not be used on or near electrical apparatus as the contents of this type of extinguisher are approximately 95% water.

Carbon Dioxide (CO₂) extinguishes fires by displacing the air which is the oxygen, surrounding the fire. It smothers the fire, as the CO₂ does not support combustion. It is most effective against Class A, B and C fires. This type of extinguisher is used against electrical risks and effectively works in enclosed spaces.

Warning

CO₂, whilst not a toxic substance can lead to asphyxiation (suffocation) if inhaled in large enough concentrations for a sufficient period of time. As a rule of thumb if the concentration is high enough to extinguish a fire then it is high enough to injure anyone who inhaled it over a long period. For this reason, you should stand clear of the fire area after discharging CO₂ extinguisher and watch for signs of re-ignition (always a distinct possibility when gaseous agents are used.)

iii. CLASSES OF FIRE

Combustible substances are grouped into the following classes:

- A.....Solid materials such as wood, paper, textiles, etc.
- B.....Liquids or liquefiable solids such as oil, paint, fat, grease, etc.
- C.....Gases such as Propane, Butane, etc.
- D.....Metals such as Magnesium, Sodium, Titanium, etc.

Note: Electrical fires could fall into one or more of the above categories.

iv. TRIANGLE OF FIRE

Combustion requires the following three (3) elements to initiate the chemical chain reaction that would cause a fire or an explosion, Heat, Oxygen and Fuel (combustible substance)

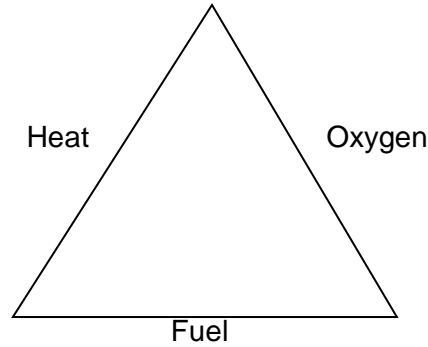
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All 3 elements must remain present to sustain combustion.

In the event that a fire or an explosion has already occurred, the aim must be to remove one or more of the above elements. So, a strategy must be adopted that will prevent such a chain reaction occurring. One or more of the following methods can assist in achieving this:

- Removal of the fuel (known as starving the fire).
- Removal of heat (known as cooling the fire).
- Removal of Oxygen (known as smothering the fire).

5.2 EQUIPMENT INSPECTIONS


The following points shall be checked during monthly inspections:

- **Fire extinguishers are of suitable type for the adjacent risk and fully charged. The pressure gauge is in-tact and not damaged. The pressure should be within the recommended level on extinguishers equipped with a gauge (such as that shown below). The needle should be in the green zone. If the needle is not in green zone, the extinguisher requires professional maintenance and this should be noted on the inspection report.**



- Inspection or Test tags must be valid; out of date equipment must be withdrawn and replaced with equipment carrying valid certification.

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- All seals and safety locking pins are intact.
- Nozzles are clear of dirt and hoses are not perished or worn.
- Visually inspect the extinguisher for dents, leaks, rust, chemical deposits or other signs of abuse/wear and note any findings on the inspection report. If the extinguisher is damaged or needs recharging, remove it from service and note this on the inspection report.
- All fire points are uniquely numbered and all identification means are clearly legible.
- Fire extinguishers shall be suitably mounted on the brackets provided for such purposes and not positioned on the floor/ground. Extinguishers having a gross weight not exceeding 40 pounds will be so installed that the top of the extinguisher is not more than 3-1/2 feet above the floor.
- Access to all such equipment is kept clear of obstacles.

5.3 RECORD KEEPING

Inspections shall be conducted by operations team according to the monthly inspection schedule. All information resulting from such inspections shall be recorded in extinguisher check list on both hard copy and soft copy and inform MR after inspection is done.

An inspection sign on the fire extinguisher inspection tag should include:

- Date of inspection.
- Signature of inspector.
- Remarks.

5.4 TRAINING

Training in basic fire-fighting shall be carried out and include, but not be limited to the following:

- Description of the different types of fire-fighting equipment available within BPDB.
- Description of where, when and how to use such equipment.
- Hazards awareness when fighting different types of fires.

6. Reference

ISO 45001: 2018 Standard

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7. Appendix

None

8. REVISION HISTORY

| SI No. | Revision Number | Section | Change Made | Date of Creation |
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