







Installation & Testing of Fire Sprinkler System

(Method Statement)

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Company Email		**Company Contact #**	
Concerned Person		**Designation/ Title**	

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Revision Summary

S/#	Date	Rev	Revision Description	Revised By & Title
1				
2				
3				
4				

Contents

1. Purpose....2
2. Objective....2
3. Scope....2
4. Terms....2
5. Responsibilities....3
   - 5.1. CEO....3
   - 5.2. Project Manager (PM)....3
   - 5.3. Safety Officer (SO)....3
   - 5.4. Workers....3
6. Installation Guidelines....3
7. Methodology....4
   - 7.1. Material Handling & Storage....4
   - 7.2. Fire Sprinkler System Installation....4
   - 7.3. Sprinkler Head Installation....4
   - 7.4. Butterfly Valve & Flow Switch Installation....4
8. Fire Sprinkler Testing Methodology....5
   - 8.1. Test Requirements....5
   - 8.2. Test Method....5
9. Health and Safety Hazards....5
10. Personal Protective Equipment....6
11. Tools & Equipment....6
12. Annexures....6

1. Purpose

The general purpose of the document titled as **Method Statement for Installation & Testing of Fire Sprinkler System** is to provide detailed, guidelines and installation instructions of the fire sprinkler system at the workplace.

The document ensures the organization has adopted a Safe System of Work (SSoW) and applicable to everyone and all of the sub-activities so that the work is performed as per approved standards, and safely without jeopardizing the safety of the workers, and impacting the environment.

The organization has reduced the risk level to minimum and acceptable level by considering the appropriate control measures, and implementing on all levels.

2. Objective

The objective of the document is to;

1. Comply with the requirements;
2. Perform the job activity as per the approved standards;
3. Follow the health and safety guidelines;
4. Avoid impacting the environment due to work activities;
5. Get approval from top management before any change implementation;

3. Scope

The scope of the document titled as **Method Statement of Installation & Testing Fire Sprinkler System** is applicable to everyone involved in the work activity including contractors, sub-contractors, and the daily wager workforce.

4. Terms

S/#	Term	Description
1.	CEO	Chief Executive Officer
2.	PM	Project Manager
3.	SO	Safety Officer
4.	SSoW	Safe System of Work
5.	QA	Quality Assurance
6.	QC	Quality Control
7.	HSE	Health, Safety, & Environment
8.	MS	Method Statement
9.	HIRA	Hazard Identification & Risk Assessment
10.	ERP	Emergency Response Plan
11.	I&T	Installation & Testing

12.	NFPA	National Fire Protection Association

5. Responsibilities

5.1. CEO

1. Provide guidelines and information to perform the job.
2. Provide resources to perform the job at the site safely.
3. Ensure the work method statement and processes are developed, and implemented.
4. Ensure the all accidents are record, investigated, and corrective actions are taken.
5. Ensure all workers are trained, and experienced before start of the job.

5.2. Project Manager (PM)

1. Plan the project and execute with team members.
2. Ensure the project drawings are prepared and communicated to the workers.
3. Guide the workers and engineers to perform the project jobs.
4. Prepare the method statements, risk assessments, and job safety analysis with safety department.
5. Ensure the project is performed as per quality standards.
6. Other responsibilities allocated by the management.

5.3. Safety Officer (SO)

1. Prepare the Risk Assessment, Project HSE Plan, Method Statement with the project manager.
2. Train the workers and help in conducting toolbox talks.
3. Inspect the areas and ensure it is safe for working.
4. Help in conducting the emergency exercises on regular basis.
5. Conduct incident investigations and ensure corrective actions are adopted.
6. Other responsibilities allocated by the top management.

5.4. Workers

1. Perform the job as per method statement.
2. Take part in incident investigation, area inspection, emergency mock exercises.
3. Report all kind of incidents, accidents, spillages, use of wrong tool, near miss, etc.
4. Other responsibilities allocated by the top management.

6. Installation Guidelines

- Material and work installation quality will be inspected and implemented by the project management team members and gaps will be rectified immediately. The work will be performed as per the drawings of the project, and so any irregularity will be reported and rectified on immediate basis.
- Applicable standards, and legal requirements will be complied, and change in requirement will be communicated to whole workforce.
- Manufacturer's installation guidelines will be consulted and work will be performed accordingly.
- Health and safety guidelines and instructions will be followed and implemented at all levels.
- Workers will be provided with appropriate personal protective equipment and accessories.
- Work at height and in confined space is subject to the permit to work.
- Proper equipment should be used for work at height.
- Tools and equipment will be provided and used for the job by competent person.

- All of the tools and equipment will be inspected by the competent person.
- No individual will introduce his private tool/ for work at the workplace.
- Any defective tool, equipment, PPEs, and other items will be discarded and removed from worksite.
- Workers will ensure they follow the safety rules and instructions.

7. Methodology

7.1. Material Handling & Storage

Material will be supplied to the workplace on lorry, unloaded with the help of the crane and forklift. The unloaded material will be moved to the store and pipes shall be stacked on safe location. The pumping units and valves will be placed separately.

Approved safety officer and material man will inspect the items for their physical appearance, and tally up with the material manifest. Defective items will be removed from the site and sent back to supplier for replacement.

The pipe's open ends will be covered with covers to ensure no foreign object or any animal enter these pipes e.g., rats, cats, etc. All of the items will be stored away from the water, and chemicals that can damage them.

7.2. Fire Sprinkler System Installation

1. The installation of the Fire Sprinkler System should be done as per **National Fire Protection Association Standard 13**.
2. Fire Sprinkler System Drawing shall be consulted before start of the job for correct location identification.
3. Pipe hangers will be placed at regular intervals according to the drawings.
4. Male threaded pipes will be attached using the approved and good quality sealing compound to ensure no leakage is experienced when water is injected.
5. Pipes of 2 inches or below will be threaded whereas the pipes of 2-1/2 inches or above will be prepared with cut groove or roll groove.
6. The overhead piping will be fitted with proper equipment and tools to ensure they don't collapse during installation or after installation.
7. Underground pipes will be covered with the protective polyvinyl tape and joints will be welded properly by a competent and experienced welder.
8. Approved hangers and brackets will be used to support the system load and hold in place firmly. Combined network of these brackets and hangers will be established and placed on concrete surface. Installation of hangers and brackets on soft surface is not allowed.

7.3. Sprinkler Head Installation

1. Fire sprinkler head shall be installed according to the NFPA 13 standard.
2. Fire sprinkler head will be inspected before installation.
3. Workplace drawings will be consulted for fire sprinkler head installation at approved location.
4. Distance between the heads will be as per the NFPA 13 standard.
5. Sprinkler heads will be installed after the piping installation to avoid any mismanagement or technical fault occurrence.
6. If there is leakage remove the equipment immediately instead of leaving for later replacement.
7. Hand tight the sprinkler head to avoid damage, use proper size of wrench.

8. Place the escutcheon plate and press it over the sprinkler body until the external edge meets the mounting surface, wall, appropriately.

7.4. Butterfly Valve & Flow Switch Installation

1. Consult with the approved drawings before installation of the butterfly valve and flow switch.
2. Identify the locations and ensure it is clean and tidy, free of dust, stains etc.
3. Ensure valve disc doesn't impede with the operation of other components at all during operations.
4. The valve should be connected with inlet and outlet pipes properly, the pipes should be installed properly and supported to ensure they don't place excessive load/stress on valve.
5. Don't push or pull the valve to bring the pipes in correct position.
6. When closing the valve wheel, it can require more force due to non-greasing, or lodged debris inside, that's why the valve shouldn't be closed forcefully or with help of any wrench. Open the valve and close it one or several times for safe seating.
7. Flow switch should be placed on vertical/horizontal pipe, by making a hold in the pipe as per NFPA 13 standard.
8. Place the vane inside the pipes without bending or making creases, and tight the nuts.
9. Ensure the made hole for Flow Switch is not more than 2-inches.



Butterfly Valve



Flow Switch

8. Fire Sprinkler Testing Methodology

8.1. Test Requirements

1. Hydrostatic testing shall be carried out by a competent person to check and test the pipes.
2. Hydrostatic test shall be carried out for 2 hours to monitor the performance of pipes.
3. Hydrostatic pressure will be not less than 1 and not more than 5times of required working pressure.
4. Calibrated Pressure Gauge shall be placed at the lowest point. No visible leakage at any point is expected.
5. Throughout the **Hydrostatic Pressure** test, there should be no change in the system pressure.

8.2. Test Method

1. All of the openings should be covered.
2. All drain valves should be in closed position.
3. Keep one drain valve at highest location pretty loose to ensure no air column builds up, and start filling the pipes with water, and after filling it, close the valve.
4. Use pressure pump to bring the pressure to the acceptable and predetermined pressure and wait for a while. Then check the all small and big joints for leakage.
5. If system is showing no leakage, increase the pressure from 1time to 1.5 times and keep repeating till pressure becomes 5times of normal operating pressure.
6. If the system is not leaking, keep the pressure at 5times and leave intact for 2 hours.
7. Record the performance, and share with the client for record.

9. Health and Safety Hazards

1. Abrasion and cuts due to hand tools usage;
2. Electrocution, hit by flying broken objects separated, from powered tools usage;
3. Trip & fall, collapse of the stacked material;
4. Slip, trip, and fall accident due to accumulated debris, tangling wires, dispersed tools, uneven walking surface at workplace.
5. Fall from height due to no use of safety harness, use of improper working platform usage, or by incompetent person.
6. Fire and explosion at the workplace due to welding, hot work activities

10. Personal Protective Equipment

S/#	Personal Protective Equipment	Qty.
1	Helmet	
2	Ear Plugs	
3	Eye Protection	
4	Coveralls	
5	Safety Boots	
6	Hand Gloves	
7	Personal Fall Arrest System / Harness	
8	Face Shield (Welding)	
9	Welding Glasses	

11. Tools & Equipment

S/#	Tools & Equipment	Qty.
1	Drill Machine	
2	Wrench	
3	Hammer	
4	Screw Driver	
5	Portable Cutter	
6	Scaffolding	
7	Ladders	
8	Safety Signs	
9	Welding Machine	

10	Gas Cutter	

12. Annexures

1. Work Risk Assessment
2. Workplace MEP Drawing
3. Manufacturer Installation Recommendation
4. Workers Training Certificates
5. Workers Toolbox Talk Attendance Sheet
6. Hazard Report Form