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SUPPRESSION SYSTEM FOR KITCHEN HOODS**

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<b>REVISION RECORD</b>
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This cover page is a record of all revisions of the document identified above by number and title. All previous cover pages are hereby superseded and are to be destroyed.

Rev. No.	Date	By	Chkd.	Approvals	Description and Page Numbers of Revisions

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## 1.0 PURPOSE

- This method statement covers the nature, type of work & application of the Installation, Testing & Commissioning of Wet Chemical Fire Suppression System for Kitchen Hoods for the project as mentioned in the Approved Shop Drawings & project specifications.

## 2.0 SCOPE

- Supply, Installation, Testing & Commissioning of Wet Chemical Fire Suppression System for Kitchen Hoods so as to ensure that the job execution complies with project requirements as indicated in the Approved Shop Drawings of Fire Protection System and complies with project specifications enable to serve for its intended purpose to the satisfactory level of the client.

## 3.0 REFERENCE

- 3.1 Latest Approved shop drawings for the required and applicable areas for Fire Protection System.
- 3.2 Specifications
- 3.3 NFPA Standard
- 3.4 UL 300 Standard
- 3.5 Project Quality Plan
- 3.6 Material Approval for Wet Chemical Fire Suppression System for Kitchen Hoods

## 4.0 DEFINITIONS

Main Contractor	:	
MEP Contractor	:	
PQP	:	Project Quality Plan
PSP	:	Project Safety Plan
QCP	:	Quality Control Procedure
HSE	:	Health, Safety and Environment
MS	:	Method Statement
ITP	:	Inspection Test Plan
QA/QC	:	Quality Assurance / Quality Control Engineer.
WIR	:	Inspection and Test Request
MIR	:	Material Verification Request
MAR	:	Material Approval Request
UPVC Class E	:	Ultra polyvinyl chloride Class E
UPVC	:	Ultra polyvinyl chloride

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HDPE : High density polyethylene

## 5.0 RESPONSIBILITIES:

- Responsibilities for ensuring that the steps in this procedure shall be carried out are specified at relevant steps in the procedure:
  - Project Manager
  - Construction manager
  - QA/QC Engineer
  - Site Engineer
  - HSE officer
  - SK

### 5.1 Project Manager

- The work progress shall be carried out as per planned program and all the equipment's required to execute the works shall be available and in good condition as per project planned.
- Specific attention is paid to all safety measures and quality control in coordination with Safety Engineer and QA/QC Engineer and in line with PSP and PQP.
- Project Manager is the overall responsible for the project in terms of work execution, safety, planning & quality. The Project Manager will maintain the planning progress and coordination of works with the main contractor.

### 5.2 Construction Manager

- Construction Manager is responsible to supervise and control the work on site.
- Coordinating with QA/QC Engineers, Site Team & Foremen for all activities on site.
- Control and sign all WIRs before issuing to Consultant approval.

### 5.3 Site Engineer

- The method of statement to the system shall be implemented according to the Consultant project specifications and approved shop drawings.
- Provision of all necessary information and distribution of responsibilities to his Construction team.
- The work progress shall be monitored in accordance with the planned work program and he will provide reports to his superiors.
- The constant coordination with the Safety Engineer to ensure that the works are carried out in safe working atmosphere.
- The constant coordination with the QA/QC Engineer for any works to be carried out and initiate for the Inspection for the finished works.
- He will ensure the implementation of any request that might be raised by the Consultant.
- Efficient daily progress shall be obtained for all the equipment and manpower.
- He will engage in the work and check the same against the daily report received from the Foremen.
- The passage of all the revised information to the Foremen and ensure that it's being carried out properly.

### 5.4 QA/QC Engineer (MEP):

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- The monitoring of executions of works at site and should be as per the approved shop drawings and project specifications & material approval.
- Ensure WIRs and MIRs are being raised for activities in timely manner and inspected by the Consultant.
- He will follow and carried out all the relevant tests as per project specifications.
- Obtain the required clearance prior to Consultant's inspections.
- Should acquire any necessary civil works clearances and coordination.
- One who will assist the Consultant Engineer/ Inspector during Inspections.

#### **5.5 Site Foreman**

- The carrying-out of work and the proper distribution of all the available resources in coordination with the Site Engineer on a daily basis.
- Daily reports of the works are achieved and coordinated for the future planning with the Site Engineer.
- Incorporate all the QA/QC and Safety requirements as requested by the concerned Engineer.
- Meeting with any type of unforeseen incident or requirement and reporting the same to the Site Engineer immediately.

#### **5.6 Safety Officer**

- The implementation of all safety measures in accordance with the HSE plan and that the whole work force is aware of its proper implementation.
- The implementation of safety measures is adequate to maintain a safe working environment on the work activity.
- Inspection of all the site activities and training personnel in accident prevention and its proper reporting to the Construction Manager and the Project Manager.
- The site is maintained in a clean and tidy manner.
- Ensure only trained persons shall operate the power tools.
- Ensure all concerned personals shall use PPE and all other items as required.
- Ensure adequate lighting is provided in the working area wherever required.
- Ensure high risk elevated areas are provided with barricade, tape, safety nets and with ladders.
- Ensure service area/inspection area openings are provided with barricade, tape, and safety nets.
- Ensure safe access to site work at all times.

#### **5.7 Store Keeper (SK)**

- Responsible for overall Store operations in making sure to store the material delivery to the site and keep it in suitable area that will keep the material in safe from rusty and damage.
- One who will acknowledge the receiving of materials at site in coordination with QA/QC & concerned Engineer.

### **6.0 EQUIPMENTS**

Following tools shall be arranged before starting the job.

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- a. Tool Box
- b. Measuring Tape
- c. Hack Saw Blade
- d. Spirit Level
- e. Electric Drill Machine
- f. Step Ladders
- g. Excavator
- h. Solvent Cement (if required)
- i. Electric welding machine. (if required)
- j. Crimping Tool
- k. Wire Cutter
- l. Screw Drivers

## **7.0 PROCEDURE**

- Work Sequence/Procedure

### **7.1 General Requirements**

- All the materials received at site shall be as per the approved technical material submittal for Wet Chemical Fire Suppression System for Kitchen Hoods to be inspected upon receipt & approved by the engineer prior in proceeding with the installation through MIR. Any discrepancies, damages etc, should be reported to the supplier for rectification or replacement & to be removed from site immediately.
- All construction/inspections/testing works shall be carried out in accordance with specifications & to be done by qualified Mechanical Engineers and shall be checked and approved by MEP Subcontractor Construction Manager along with QA/QC Engineer.
- Contractor has to clarify the procedure for material delivery to the site through consultant Engineer at site.

### **7.2 Handling & Storage**

#### **7.2.1 Handling**

- During transportation ensure that the materials are in a box or at least covered with plastic. Do not drop the materials especially on hard surfaces. This is particularly important as the materials might be broken, damaged & cause injuries to personnel.
- Where ever possible the loading and offloading of the equipment & its component shall be carried out by hand.
- When required or necessary, forklift shall be used in unloading the materials.

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## 7.2.2 Storage

### 7.2.2.1 Storage on site

- Wet chemical supplied / delivered shall be stored in the original closed shipping container supplied by the manufacturer. These containers shall not be opened unless otherwise instructed by the Consultant.
- Wet chemicals supplied/ delivered shall be maintained within the manufacturer's recommended temperature range.

## 7.3 Sequence of Installation, Testing & Commissioning.

### 7.3.1 Safety

- All site safety rules & regulations shall be complied with.
- Supervisors will deliver tool box talks, relevant to this installation, to all operatives involved in the installation, and shall be recorded.
- All operatives will be equipped with minimum personnel protective equipment; hard hat, safety boots, safety glasses.
- The persons using cleaning fluid and solvent cement have to wear hand gloves.
- All operatives shall fully understand the method of installing the abovementioned system.

### 7.3.2 Pre- Installation Procedure

- Before commencement of installation activity, the supervisor must ensure that:
  - Permission to start or Civil Clearances prior to installation has been given by the main contractor.
  - Materials have been inspected & approved by the Engineer during the delivery via MIR.
  - All relevant Shop drawings for intended for the system in relevance to the area of use have been approved by the Consultant.
  - Necessary openings in the floor (if required) are provided as per the approved builders work drawing.
  - Scaffolding/ ladders if necessary & required for installations are correctly built, safe & suitable for the purpose.
  - Floor Finish level and finish data are available to coordinate with all the elevations & distances required in the installations.

### 7.3.3 Installation Procedure

- Ensure the correct type and model of the material as per the approved material submittal.
- If necessary or required, mock-up will be installed and approved by the Consultant prior to further installations.
- Ensure that all pipe works/ duct works has been completed, tested & approved by the Consultant.
- Mark the locations for the cylinders, manual pull stations & pipe routings as per approved shop drawings & support details.



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- Install the Wet Chemical Fire Suppression System at the right location as per Approved drawings.
- For any discrepancies on the distances & elevations as per the approved drawings shall be marked “red line” on the drawings & shall be incorporated in the as-built drawings.
- Fix supports & brackets in a vertical position as per support details in the approved working drawing or as recommended by the manufacturer. Ensure that all fixings are secure & durable to hold the cylinder.
- Install the valve assemblies in an upright position. A shelf bracket is required for use with the cylinder & valve assembly.
- Recheck the position, distance & elevations of installed brackets & supports.
- Appropriate holes shall be drilled on the hood for pipe entry, nozzle dropping & plenum entry.
- Piping supports shall be fixed to the surface of the hood using the approved material for threaded rods, nuts, washers & clamps.
- Pipes shall be cut & threaded as per the dimensions required.
- Fusible links along with the housing kit shall be installed & used for each applications as well as one in every exhaust duct.
- Stainless steel rope shall be connected inside the pipe between the fusible links & cylinders & also from the manual pull station to cylinder.
- Cable shall be pulled from the cylinder control head to the Fire Alarm Panel.
- Appropriate terminations shall be done on the cylinder control head (Normally Open/ Normally Close Terminals) as well as on the Fire Alarm Panel.

#### **7.3.4 Testing & Commissioning**

- Upon completion of Installation, the system shall be tested in accordance to the specification & manufacturer’s recommendation & all tests shall be approved by the Consultant thru the Testing & Commissioning Procedures as follows:
  - Check the installation of the cylinder as per the approved locations, elevations & distances stated in the approved shop drawings.
  - Check all supports if properly & correctly installed as per the approved Support Details or Manufacturer’s Recommendations.
  - Check installation of Control Head & Control Valve Assembly.
  - Check installation of Remote Release Pull Station.
  - Check the fusible links if properly fitted with the required clearance.
  - Check the pipes are supported & nozzles are positioned properly.
  - Check the actuation hose is connected between control head and valve.
  - Ensure that the control valve is removed from the cylinder.
  - Install the test cartridge inside the control head.
  - Cut the “S” hook from the last fusible link.
  - Ensure that the control valve is operated.
  - Remove the empty test cartridge and reset the control valve.
  - Replace the “S” hook and reset the control head.
  - Remove the safety pin & operate the remote release pull station.
  - Ensure Control mechanism is operated.

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- Reset the control head.
- Install one cartridge inside the control head & fix the control valve on the cylinder.

#### **8.0 ATTACHMENTS**

- Inspection & Test Plan
- Installation Check Sheet
- Testing & Commissioning Check Sheet
- Risk Assessment