**PROJECT NAME**

**Method Statement**

Method Statement for flushing of chilled water system.

|  |  |
| --- | --- |
| Project Logo | **Client**  **Consultant**  **Contractor**  **Issued on** |

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**1. Purpose**

This document describes the methodology and procedure for flushing of chilled water system of XYZ Project, and to ensure that all concerned persons are familiar with the sequence of activities, utilization of resources, and execution of the works in compliance with applicable Safety and Quality Procedures, and Project Documents and Specification.

**2. Scope of Works**

This document covers the following scope of works:

This method statement is intended to outline the activities and the methods used in flushing of chilled water system. All activities will be carried out in accordance with the contract details and in full compliance to the Contract Specifications and Documents. All work within the rights-of-way of the standards and specifications will be done in compliance with requirements issued by authorities.

**3. Legislation and Code of Practice**

* All related codes and standards referenced in the Contract Specifications

**4. Reference**

* Contract Specifications Section for Air Conditioning Piping and Cleaning
* Approved Drawings and schematics.

**5. Definitions**

Client :

Consultants :

Contractor :

**6. Resources**

6.1. Equipment / Tools

|  |
| --- |
| **DESCRIPTION** |
| * Tool box * Tool kit * Meters/gauges * Power Tools * Temporary pump |

6.2 Safety of Equipment’s

Necessary measures will be taken for the safety of the equipment and any other works affected by the works subject of this document. Relevant entities which might require protection include any such works in the vicinity of the area of work or on the service access or discharge path. The construction team will ensure that any such requirements are documented.

**7. Health, Safety & the Environment**

7.1 Construction Hazards (tick as appropriate)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Corrosive** | **Oxidizing** | **Highly flammable** | **Extremely flammable** | **Toxic** | **Highly Toxic** | **Irritating** | **Harmful** |
|  |  |  |  |  |  |  |  |
| **🞏** | **🞏** | **🞏** | **🞏** | **🞏** | **🞏** | **🞏** | **🞏** |
| **Explosive** | **Danger for the Environment** | **Constrained Space** | **Slippery Surface** | **Danger of Electrocution** | **Falling from Height** | **Other** | |
|  |  |  |  |  |  | **🞏\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
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The hazards identified above will be controlled under the overall project specific safety plan which is a separate document communicated to all parties on the project.

7.2. Personal Protective Equipment (tick as appropriate)

The works subject of this document requires that the following PPE be used:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Safety Precaution** | **Helmet** | **Hi-Viz** | **Eye Protection** | **Face Protection** | **Mask Required** | **Respirator Required** | **Ear Protection** |
|  |  |  |  |  |  |  |  |
| **🞏** | **🞏** | **🞏** | **🞏** | **🞏** | **🞏** | **🞏** | **🞏** |
| **Gloves Required** | **Safety Shoes Required** | **Protective Clothing** | **Safety Harness** | **Equipment Guards** | **Lifejacket** | **Other** | |
|  |  |  |  |  |  | **🞏\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
| **🞏\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
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7.3. Safety Training and Emergency procedures

Before commencing any works, all employees will attend a site safety induction training to ensure all safety measures are understood and implemented and to cover specific procedures in case of emergency. If necessary, practical training exercises will be conducted on escape routes, signage, evacuation and rescue.

7.4. First Aid

Prior to the commencement of work, arrangements will be made for medical facilities and medical personnel to be available from prompt attention to the injured person. The contractor’s vehicle assigned to the job site will be used for transporting the injured person to the first aid station and to the nearest hospital as applicable and when required.

|  |  |  |
| --- | --- | --- |
| http://www.clubnautique.net/images/FirstAidLogoCalendar.gif | **Name of On-Site First Aider/s:** |  |
|  |  |
| **First Aid Box Location:** |  |
|  |  |
| **Location of Nearest Hospital:** |  |
|  |  |
| **First Aid and Medical Supplies available at site:** | | |
| Potable Water | | Ice Cubes |
| 10x6cm Sterile Gauze Pad | | 4x6cm Gauze Roller Bandage |
| 10x10cm Sterile Gauze Pad | | 8x10cm Gauze Roller Bandage |
| Large Sterile Gauze Pad | | 10x12cm Gauze Roller Bandage |
| Burn Dressings | | 5cm Elastic Bandage |
| 7.5cm Elastic Bandage | | 10cm Elastic Bandage |
| Triangular Bandage | | Barrier Device for CPR |
| Adhesive Skin Tape | | Adhesive Leucoplast Tape |
| Emergency Blanket | | Safety Pins |
| First Aid Scissors | | Tweezers |
| Disposable Gloves | | Instant Cold Pack |
| Non-prescription Medicines (Aspirin, Ibuprofen, Acetaminophen) | | First Aid and Burn Spray, Deep Heat Spray |

**8. Detailed Construction Sequence (Methodology)**

**8.1. Procedure**

1. **Preparation :**

The following preparation checks / works shall be carried out prior to commencement of flushing and cleaning of chilled water system.

i) Check and ensure the system is hydrostatically pressure tested and verify test certificate.

ii) Check the provision of air vents at location as per approved drawings.

iii) Check and ensure sufficient quantities of chemicals are available as per requirement.

iv) Place warning signs and warning tape as required.

**b) Flushing & Cleaning:**

i) Fill the system with clean water and drain the water after 30 minutes.

ii) Refill the system with clean water and run the chilled water pump for 2 hours.

iii) Open the drain valves in the main lines and drain the water completely.

iv) Clean the strainers

v) During the above flushing process the drain valves shall be kept open while the pump is running, until the water appears clean.

vi) Close all the drain valves

vii) Refill the system with clean water and add cleaning chemicals in required quantities as per Specialist supplier’s instructions.

viii) Samples of solution shall be collected from various parts of the system to ensure the chemical solution has reached all parts of the system.

1. Run the pump and circulate the water (with chemicals added) for a minimum period of 24 hours or as per specialist supplier’s recommendations.
2. Samples to be tested in 3rd party laboratory.
3. After the cleaning process is completed as described above the cleaning solution shall be flushed out.
4. The entire system is re-filled with fresh and clean water and treated with corrosion and scale inhibiting treatment chemicals as approved. Specialist contractor shall collect samples and conduct tests until satisfactory results are obtained as required.

**c) Inspection:**

1 The inspection request shall be raised for consultant to witness the flushing and cleaning process.

2 Work Inspection Request (WIR) shall be retained as records.

**d) Important Notes:**

1. All the process of the chilled water flushing will be done by MEP contractor because of having highly professionals and experienced team for chilled water flushing.
2. A schematic is attached which will mention the Drain, Test and filling point.
3. Please note that a temporary pump will be used until clear water is achieved, once clear water is achieved after several draining of the system then the chemical will be added in water then the permanent chilled water pump will be on for the circulation.
4. All the flushing will be done as per applicable standards.

**9. Construction Program**

* As per main program

9.1 Housekeeping

The work area shall be maintained neat and tidy as reasonable practical at all times.

9.2 Responsibilities

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Position** | **Overall Resp.** | **Supervise** | **Perform** | **Short Description** |
| Project Manager |  | **🞏** | **🞏** |  |
| Construction Manager |  | **🞏** | **🞏** |  |
| Project Engineer | **🞏** |  | **🞏** |  |
| Site Manager | **🞏** |  | **🞏** |  |
| Site Engineer | **🞏** | **🞏** |  |  |
| Land Surveyor | **🞏** | **🞏** | 🞏 |  |
| Safety Engineer | **🞏** |  | **🞏** |  |
| QA/QC Engineer | **🞏** |  | **🞏** |  |
| MEP Coordinator | **🞏** | 🞏 | **🞏** |  |
| General Foreman | **🞏** |  | **🞏** |  |
| Foreman | **🞏** | **🞏** |  |  |
| Charge hand | **🞏** |  | **🞏** |  |
| Labourer | **🞏** | **🞏** |  |  |
| Helper | **🞏** | **🞏** |  |  |

9.4 Records

In accordance with the Quality Management System, the following records will be maintained as documentary evidence of the establishment of this method statement:

|  |  |  |  |
| --- | --- | --- | --- |
| **Records to be retained** | **Responsibility** | **Minimum Retention Period** | **Disposition** |
| Work Notification  ( If required) | Site Manager | As per Contract  Requirements |  |
| Request for Inspection  ( WIR ) | QA/QC Engineer | As per Contract  Requirements |  |

**10. Inspection and Testing**

* In Process works shall be monitored for quality of workmanship and fabrication against approved shop drawings and standards by the relevant supervisor.
* All works shall be inspected for conformance to specification.
* The inspection formats shall be used in accordance with the requirements of the main contractor AFC.
* Raise the inspection and witness invitation for flushing of chilled water system.

**11. Related Forms**

* As per required forms

**12. Attachments**

* Risk Assessment
* Schematic for Drain. Test and filling points.