METHOD OF STATEMENT SUBMITTAL (MOS)

Project Name:	**Harrow School-Abu Dhabi**	**Project No:**	**PJ0233 / AD353**
Client:	**Taaleem Management LLC**	**Location:**	**Abu Dhabi**
Consultant:	**AMAR Golden Design LLC**	**Submittal No:**	**AS-AD353-MOS-045-R0**
Contractor:	**Al Hikma Building Contracting LLC**	**Date :**	**9-Sep-26**

Submittal Description:	**Method Statemen and Risk Assessment for Installation, Testing & Commissioning of Wet Riser Pipe System (M/s. NAFFCO)**
Discipline:	**Civil** ☐ **Architecture** ☐ **Mechanical** ☒ **Electrical** ☒ **Other** ☐

1Attachments:

1. MS for Installation, Testing & Commissioning of WRP SYSTEM
2. ITP for Installation, Testing & Commissioning of WRP SYSTEM
3. Check Sheet for Installation, Testing & Commissioning of WRP SYSTEM
4. PRE COMMISSIONING FOR TC of WRP
5. COMMISSIONING CHECK LIST - WRP

RA_Installation,T&C of (WRP) Wet Riser Pipe System

Contractor (Name & Sign): **Date : 09**

Discipline Engineer:	**QA/QC:**	**Sustainability:**	**Project Manager:**
	Mr. Moustafa		**Mr. Jiries Hani**

Comments By Consultant:

A = Approved ☐ B = Approved with Comments ☒ C= Revise & Resubmit ☐ D = Rejected ☐

Mech comments:
1. Contractor shall comply in accordance with NFPA, local defense/authority regulations and Mechanical Project Specifications for Wet Riser Pipe System.
2. Ensure that all pipes, fittings, accessories, devices, sprinkler & equipment must have an approved Material Approval/Inspection Request (MAR/MIR) prior to site delivery and installation.
4. Installation, Testing, Pre-commissioning & Commissioning check sheets for Wet Riser Pipe System must be updated (Consultants Name)

Roy Eynard Reyes Jr.
25-Sep-2026

Marvin Collado
25-Sep-2026

HSE Comments:

- The Contractor shall ensure that the approved MSRA is communicated and discussed with all Personnel involved in the activity during the task briefing/toolbox talk prior to commencing the work. All workers should be made aware of the identified hazards, required control measures, and safe work procedures.
- Contractor shall ensure that the corresponding Risk Rating is properly highlighted/filled with the applicable color as defined in the approved Risk Matrix.

Senior Engineer (Name & Sign):

Resident Engineer/PM (Name & Sign) **Date:**

METHOD STATEMENT

FOR

INSTALLATION,

TESTING & COMMISSIONING

OF

WET RISER PIPE SYSTEM

Project Name	: HARROW SCHOOL IN SAADIYAT ISLAND
Document No.	:MS-NAF-008
Revision	:00
Dated	:9 September 2026

Table of Contents

Table of Contents 2
1.0 DEFINITION 3
2.0 SCOPE 3
3.0 PURPOSE 3
4.0 REFERENCE DOCUMENTS 3
5.0 QUALITY CONTROL 3
6.0 MATERIALS, TOOLS, EQUIPMENT AND PPE 3
6.1 MATERIALS 3
6.2 TOOLS 4
6.3 EQUIPMENT 4
6.4 HOUSE KEEPING 4
6.5 PPE 4
7.0 ORGANIZATION AND RESPONSIBILITIES 4
7.1 PROJECT MANAGER 4
7.2 QA/QC ENGINEER 5
7.3 SITE ENGINEER 5
7.4 SAFETY ENGINEER (FROM MAIN CONTRACTOR) 5
7.5 SITE FOREMAN 5
8.0 PROCEDURE / EXECUTION OF WORK 6
8.1 GENERAL REQUIREMENTS 6
8.2 PIPES PAINTING 6
8.3 PIPES & FITTINGS INSTALLATION PROCEDURE 6
8.3.1 FABRICATION OF THREADED PIPE 6
8.3.2 FABRICATION OF GROOVED PIPE 7
8.3.3 FABRICATION OF PIPE AT LOCATION OF MECHANICAL TEE 7
8.3.4 COUPLING INSTALLATION 7
8.3.5 FLANGE FITTING INSTALLATION 7
8.3.6 SCREW FITTING INSTALLATION 8
8.3.7 INSTALLATION PIPING SYSTEM ON SITE 8
8.3.8 INSTALLATION OF FEED MAINS / WET STAND PIPES 8
8.4 PRESSURE TESTING 9
8.5 FIRE FIGHTING SYSTEM INSTALLATION PROCEDURE 9
8.5.1 INSTALLATION OF CABINETS, HOSE REEL & LANDING VALVE 9
8.5.2 INSTALLATION OF FIRE EXTINGUISHERS 9
8.5.3 INSTALLATION OF GATE VALVES 10
8.5.4 INSTALLATION OF BREECHING INLET CABINET 10
8.5.5 INSTALLATION OF BREECHING INLET 10
8.6 FIRE FIGHTING SYSTEM TESTING & COMMISSIONING 10
8.6.1 PRE-COMMISSIONING CHECKS 10
8.6.2 COMMISSIONING PROCEDURE 11
9.0 SAFETY CONTROL 11
10.0 ATTACHMENTS 11

1.0 DEFINITION

The Contractor	: Al Hikma Building Contracting L.L.C
The Consultant	: Al Suweidi Engineering Consultants Bureau L.L.C
The Project	: Harrow School In Saadiyat Island-SEC#SDW4 Plot#P13

2.0 SCOPE

The method of Installation, Testing & Commissioning of Wet Riser Pipe System in the above mentioned Project.

3.0 PURPOSE

This Work Method Statement (WMS) is to describe the method of which the Wet Riser Pipe System Installation, Testing & Commissioning is carried out for this project.

The aim and /or benefits of complying with this WMS include: Program Compliance, Health, Safety and Quality and Environmental company policy compliance.

4.0 REFERENCE DOCUMENTS

- Project Specification
- Contract drawings
- Approved Shop Drawings
- Approved material submittal
- Project Safety Plan
- Project Quality Plan
- Abu Dhabi Civil Defense
- NFPA Standards

5.0 QUALITY CONTROL

Quality control on site will be expedited through the project team using qualified and experienced Foreman with Engineers verifying their works and hold point approval by the QC Engineer.

The QC engineer will carry out the inspection in line with the documentation referenced in ITP.

6.0 MATERIALS, TOOLS, EQUIPMENT AND PPE

6.1 MATERIALS

For the purposes of this method statement it is considered that all materials to be used for the tasks mentioned, will have been though the materials submission/ approval process and also will have been inspected on arrival to site for technical and material compliance by the relevant parties in accordance with the approved project Quality Management plan.

6.2 TOOLS

- Pipe Wrenches
- Level
- Hammer
- Chisel
- Spanners
- Screw Drivers
- Saw, Files
- Drilling machines
- Grinder
- Chain block

6.3 EQUIPMENT

- Welding machine
- Threading machine
- Grooving machine
- Step Ladders
- Aluminum mobile Scaffolding
- Manual or electric water test pump

6.4 HOUSE KEEPING

All work places where personnel are working will be cleaned from the scrap materials derived from their works, ensuring clean and healthy work environment as well as to maintain free access and egress in the event of emergency.

6.5 PPE

- Hard Hat
- High Vis Vest
- Safety Boots (mandatory)
- Eye Protection (mandatory)
- Gloves (mandatory)
- Safety harness to be provided while working at height

7.0 ORGANIZATION AND RESPONSIBILITIES

7.1 PROJECT MANAGER

1. To be the focal point for overall interfaces and other communications with the Client, Contractor and NAFFCO as required during project execution.
2. Ensure that adequate quality measures are being undertaken.

3. He shall identify and secure necessary resources, determining the task that must be completed, assigning the tasks and delegating authority.
4. Ensure the overall implementation of this procedure.

7.2 QA/QC ENGINEER

1. Ensure all inspections are raised and conducted as per the contract specifications, PQP (Project Quality Plan) & ITP's.
2. Ensure all inspections, proper tools & tackles and manpower are used at all stages of work.
3. Ensure all current issues of procedures, approved material and shop drawing and standards are available at the point of use.
4. Ensure the works comply with the contract requirements/approved shop drawings to serve the purpose.
5. Ensure the total quality control for installation, testing & commissioning work. He shall liaise with Client for inspection of installation, testing & commissioning works.
6. Inspect for any damage during, handling and storage.
7. Monitor the quality of work & insure that fulfillment of specified requirement and that all quality records related to work are completed.
8. Ensure the work is completed as per quality requirements. NAFFCO shall inspect the same work prior to initiate ITR for Client approval.
9. Maintain Comprehensive inspection and test records for any further references.

7.3 SITE ENGINEER

1. Follow approved drawings, method statements to carry out execution at site.
2. Ensuring foremen are well informed about specific work requirements.
3. Coordinate with other disciplines site engineers, safety engineer and contractors/sub-contractors the activities required for execution.
4. Ensure that all foremen are briefed about the safe system of work.
5. Clear the obstructions from the surrounding area to avoid Near misses and accidents. Inspect the progress of work until final execution.
6. Raise ITR (Inspection and Test Requests) to get the works inspected as per the quality control procedure.

7.4 SAFETY ENGINEER (FROM MAIN CONTRACTOR)

1. Toolbox talk has to be conducted and all the hazards have to be identified before starting the work.
2. To make sure that Personnel Protective Equipment's (PPE) are used by the Task force during execution at site.
3. Risk related to the activity shall be assessed and addressed as required.
4. To provide training for the work force in order to execute the activity safely.
5. Carry out regular and random inspection on site and record observation.

7.5 SITE FOREMAN

1. He will supervise and execute the installation, testing & commissioning according to the approved shop drawing and method statements.
2. He will coordinate with the discipline engineer for site execution and during final inspection.
3. He will coordinate with crew on implementation of Safety & Environmental procedures at the site.

8.0 PROCEDURE / EXECUTION OF WORK

8.1 GENERAL REQUIREMENTS

1. Ensure that all materials are as per approved MAR's.
2. Ensure that all latest approved related documents are available for reference.
3. All installation at site shall be based on approved shop drawings, specifications, procedures, codes and standards.
4. Project Engineer / Supervisor will ensure that safety requirements have been complied with and are in place.
5. Project Engineer / Supervisor will orient and familiarize all the workers and assistants involved in the installation regarding relevant approved drawings, technical submittals, installation procedures and details, acceptance criteria.
6. Install fire protection systems in accordance with NFPA rulings, listings and manufacturers recommendations.

8.2 PIPES PAINTING

1. Clean the GI pipes with cotton rag to remove any dust or grease on the pipes.
2. After cleaning, paint the pipes with 1-layer undercoat of Yellow Primer for GI pipe. Please ensure both sides (top & bottom) are painted evenly.
3. Put the painted pipes in a good ventilation condition for the paint to dry.
4. After the paint is dried, then paint the pipes with 2 layer of finish coat. Please ensure both sides (top & bottom) are painted evenly.
5. After the finish coat dry, install the pipes.

8.3 PIPES & FITTINGS INSTALLATION PROCEDURE

8.3.1 FABRICATION OF THREADED PIPE

- Thoroughly clean the pipe surfaces with damp cloth and let dry the surface. In case, if any foreign materials remain on the surface, which cannot be cleaned by damp cloth, then use a mild wire brush to remove the same.
- If pipe surface is contaminated with oily material, then use a wash solvent.
- Avoid scratching and damaging the galvanized surfaces
- Prepare a fresh mix of primer with adequate quantity of solvent thinner. Mix thoroughly to achieve a paste consistency.
- Keep the painted pipe in safe place for a period as recommended by the manufacturer so as to get the paint dry thoroughly and check the DFT as per approved microns.
- Based on the approved shop drawings, square cut pipes with a pipe cutter – machine mounted or manual, to the exact length, as required.
- For pipe sizes, 2" and below, thread the pipe end using the standard threading machine having BSPT dies.
- The threading machine will be inspected daily before starting the work.
- Scale, slag, dirt, and debris will be removed from the pipe and fittings before machined process.
- The pipes will be cut to the actual required length and threaded from both sides.
- The pipe will be tapered and the threads will be cleaned using steel brush and file.
- All threading residuals will be removed to restore full inside diameter.
- The joint compound will be applied on the male portion of the thread for fitting assembly.
- The branches will be either assembled at the fabrication or on spot.
- The pipes will be hanged to the proper level and will be connected to the cross-main.
- Pipe work will be protected from foreign matters.

8.3.2 FABRICATION OF GROOVED PIPE

- Grooving will be provided to 2 ½" pipe sizes and above.
- Roller of the grooving machine will be checked for wear and tear.
- Pipes will be inspected to ensure plain ends. (NO Beveled ends).
- The OD of the groove will be measured. The OD of the groove should be within the manufacturer recommended range.
- Before assembly, the grooved joints will be cleaned from any dust, debris, etc.
- The branches will be assembled at the fabrication shop or on spot.
- All the ends will be plugged.

8.3.3 FABRICATION OF PIPE AT LOCATION OF MECHANICAL TEE

- The pipe will be marked at the location of the mechanical tee.
- The pipe will be holed drilled to the suitable size of the branch and in accordance to the manufacturer's recommendations.
- The hole will be filed to assure soft surface.

8.3.4 COUPLING INSTALLATION

- Groove the pipe ends according to the project specification and consultant's approval.
- Pipe must be free from indentations, projections or roll marks on exterior from the ends to the groove, to assure a leak tight seat for the gasket.
- Place gasket over pipe ends, being sure gasket lip does not overhang pipe end.
- Align and bring 2 pipe ends together and slide gasket into position centered between the grooves on each pipe. No portion of the gasket should extend into the groove on either pipe.
- Loosely assemble all segments leaving one nut and bolt off to allow for "swing-over" feature.
- With 1 nut and 1 bolt removed, use the "swing-over" feature to position housings over gasket and into the grooves on both pipes.
- Insert the remaining bolt to allow easy tightening of the nut. Be sure track head engages into housing recess.
- Tighten nuts alternately and equally maintaining metal-to-metal contact at the angle bolt pads. Tighten securely to assure a rigid joint.

8.3.5 FLANGE FITTING INSTALLATION

- Check studs, nuts, and flange/nut contact surfaces for cleanliness and burrs. Clean them using a wire brush.
- Check flange nut bearing surfaces. Clean the flange nut contact surfaces around the entire bolt circle using a wire brush. Ensure that these contact faces are free of scratches, dirt, scale, burrs, and other protrusions. Remove defects by grinding.
- Uniformly lubricate the stud and nut threads on all contact surfaces, including the nut bearing surface that contacts the flange.
- Check condition of flange faces. Clean gasket seating surface on flange face using a wire brush. Ensure that the surface is free from scratches, dirt, scale, remnants of old gaskets, and other protrusions.
- Check flange-to-flange alignment to verify that it is within the specified tolerances (±5mm). Excessive flange misalignment increases the likelihood of in-service leakage.
- Check flange faces for proper gasket insertion gap. The gap between flanges should be just sufficient to allow for gasket insertion. Excessive gap will result in needing to force the flanges together, which will increase the likelihood of in-service leakage.
- Install studs in the lower half of the flange to support the gasket when it is inserted.
- Insert the gasket between the flanges and ensure its proper placement (i.e., centering in the joint), taking care not to damage the gasket

- Install remaining studs and nuts and ensure that there is complete thread engagement in both nuts.

8.3.6 SCREW FITTING INSTALLATION

- Check the pipe length required based on the approved shop drawing.
- Mark the desired length on the pipe and cut it. Make sure the pipe ends are square.
- Place the pipe in the threading machine and thread it accordingly. Make sure the thread of the pipe is in good condition.
- Remove the oil from the pipe end after the threading procedure and wrap it with Jute, Boss white or Teflon tape.
- Install the pipe to the screw fitting.

8.3.7 INSTALLATION PIPING SYSTEM ON SITE

- Marking the routes of the pipe work will follow the approved shop drawings, combined services drawings and site coordination with other services based on given and final benchmarks. In case of onsite co-ordination, changes will be reflected on the as built drawings. The Engineers will be notified whenever is necessary.
- After marking the pipe routes, the anchoring points will be drilled according to the required support spacing as shown on the approved shop drawings and project specification.
- Anchor, Bolts, nuts and washers will be installed of each applicable size as per the Standard/ manufacturer recommendation.
- The pipe support / Hanger will be attached to the threaded rods, nuts and washers will be installed as well and the lock nuts are provided for the vertical supports.
- Drain pipes will be installed, so that system can be drained while testing / maintenance periods. Pipes will slope to main drain valve. Where piping cannot be fully drained, nipple and cap will be installed for drainage. Piping will drain to grade or to air gap sewer receptor.
- The branch lines will be hanged to the proper level and will be connected to the cross main.
- Where piping is embedded in masonry or concrete, sleeves will be provided as per specification. Clean internally the pipes internally during construction and installation. Provide clearance for access to valves. Anchors, expansion joints, swing joints and/or expansion loops shall be provided so that piping may expand and contract without damage to itself, equipment or the building.
- Damaged painting system, if any on the pipe work to be repaired.
- Expansion / Contraction joints will be provided wherever is applicable as per the approved shop drawings
- ITR will be issued for Company’s Inspection and approval.

8.3.8 INSTALLATION OF FEED MAINS / WET STAND PIPES

- Install a complete combined fire stand pipe and sprinkler system with all piping, valves, hangers, signs, valves, tests, etc., as per approved shop drawings
- Furnish and install all drain piping, flushing, and connections, drain plugs, drain valves, etc., at drain points and all low points
- Seal all valves, not provided with tamper switches, in open position by approved means. Flushing connection shall be as per NFPA 14.
- Piping shall generally be run parallel to walls and beams.
- Coordinate with other trades before finalizing the location of any piping to avoid interfering with their work.
- Care shall be exercise in the installation of the piping so that the system will drain by gravity, back through branches.
-

8.4 PRESSURE TESTING

1. Ensure that testing equipment's / tools and water source are ready.
2. Ensure that system should be measured with calibrated pressure gauge installed at the lowest point.
3. Ensure the pressure gauges are calibrated and valid calibration certificates available, issue calibration certificates to the consultants.
4. Pressure shall be applied to the system by means of a hand pump drawing from a water container. The pump discharge shall be connected to the system through a globe valve and recently calibrated pressure gauge of suitable range.
5. After the test pressure is reached, the pump shall be blocked off by closing the globe valve and the variations of pressure in the system monitored on the pressure gauge.
6. Check the pipes, pipe joints and accessories for the leakage of water while pumping and if any, attend the fault and rectify.
7. Ensure and confirm that the air vent installed at higher point to release the air while the water pressure build up gradually during water pumping under pressure test.
8. Ensure and confirm that the automatic air vents and any other sensitive instruments are either removed or blanked off.
9. For riser, testing shall be done in such a way that the pressure builds up from water head does not count in testing pressure.
10. The system shall be drained in such a way that not to create any thrust at drain point.
11. Ensure all the leakages are arrested after the correction is made, the pressure test shall be repeated until a completely tight system is ensured and the testing procedure shall follow as:

    Pressure line at 200 psi (13.8bar) or 3.5Bar in addition with the working pressure whichever is higher shall be maintained for 2 hours as per NPFA. Pressure testing documentation shall be submitted along with inspection request for consultant's approval.

8.5 FIRE FIGHTING SYSTEM INSTALLATION PROCEDURE

8.5.1 INSTALLATION OF CABINETS, HOSE REEL & LANDING VALVE

- Prior to the installation the Project Engineer / Foreman will read, understand and strictly follow the approved shop drawings and manufacturer's instructions.
- The Project Engineer / Foreman will examine the location of the cabinets and ensure that opening is sufficient for fixing all equipment and the mounting height of the hose valve, hose reel and hose racks is as per the approved shop drawings and to the requirements of Civil Defense.
- Hose reel; hose valves and fire extinguishers are of approved type and have the correct rating.
- The cabinet (without the equipment) will be installed in location as applicable as per approved shop drawing. Branches to the hose reel and hose valve will be fabricated and installed on site to ensure actual entry point to the cabinet.
- Hose reel and hose valve will be installed as per the manufacturer's instructions and approved shop drawing at the correct mounting height.
- Isolation valve, PRV and pressure gauge to be installed on the hose reel branch line as per approved shop drawing.
- ITR will be issued for Company's Inspection and approval.

8.5.2 INSTALLATION OF FIRE EXTINGUISHERS

- Select the extinguisher as per the type and capacity as mentioned on the approved shop drawings. Inspect for signs of damage.
- Check the location of the fire extinguisher as per the approved shop drawings.
- Place a Dry Chemical Power Extinguisher and a Carbon Dioxide Extinguisher inside the Fire Hose Cabinet.
- Install the approved Fire Extinguisher Cabinet at location as on the approved shop drawings

- Place the right type of fire extinguisher inside the Fire Extinguisher Cabinet as indicated on the approved shop drawings.
- Marking the location of the Cylinder mounting bracket as per the location on the approved shop drawings.
- Drill holes on the wall for installing the brackets.
- Fix the bracket using fisher and screw.
- Mount the cylinder on the bracket.

8.5.3 INSTALLATION OF GATE VALVES

- Remove all plastic protectors from the openings.
- Proper approved gasket should be used to connect the fabricated pipe, flanges and Isolation gate valve.
- All equipment's are connected with stud and bolts.

8.5.4 INSTALLATION OF BREECHING INLET CABINET

- Prior to start of work, firefighting engineer for execution of this activity shall ensure that the latest approved construction drawings are available at site.
- Before any installation work proceeds, ensure that the drawings of approved cabinet locations on all floor levels, approved mounting details (surface or recessed), approved openings & cut out details for cabinets are available at site.
- Ensure that the cabinet is inspected and approved by the consultant at site, prior to start of installation.
- Ensure that the wall surface finish is suitable to mount the cabinet.
- Mark the levels on the wall surface with spirit gauges as per the approved cabinet drawing.
- Supports to be provided from the wall to the cabinet rear surface.
- Ensure that the necessary openings are provided in the cabinets to install breeching inlet.
- Install the cabinet as per the marking done, matching with the supports.
- Ensure that the facial alignment of cabinet is parallel to the plane of the wall surface, and horizontal to FFL.
- Ensure that no gaps are left between the cabinet and the wall in co-ordination with the civil & architectural contractors.
- Ensure the cabinet is firmly fixed and all the fire equipment contained in it is properly installed. Inspect visually for any misalignments.

8.5.5 INSTALLATION OF BREECHING INLET

- Ensure that the Breeching Inlet are inspected and approved by the consultant at site, prior to start of installation.
- Install the required pipes & fittings and breeching inlet.
- Final touch up of painting is to be done if required.

8.6 FIRE FIGHTING SYSTEM TESTING & COMMISSIONING

8.6.1 PRE-COMMISSIONING CHECKS

- Check all accessories are installed inside cabinet (1'' Fire Hose Reel, Fire extinguisher, 1''PRV and lock Shield valve and 21/2'' Fire Hose and 21/2'' Nozzle).

8.6.2 COMMISSIONING PROCEDURE

8.6.2.1 FIRE HOSE REEL

1. **Open the most remote 1'' Fire Hose Reel and Check the sequence:**

- Water should discharge from the 1'' nozzle at minimum pressure of 4.5 bar
- As pressure reduce jockey pump should Run. Supplying the water & pressurizing the line.

8.6.2.2 LANDING VALVE

1. **Open the Most remote 21/2'' Fire Hose Landing valve and follow the sequence:**

- Water should discharge from the 21/2'' Nozzle at minimum pressure 6.9 bars.

9.0 SAFETY CONTROL

1. All operatives must have undertaken the Client/Contractor & NAFFCO safety induction prior to commencing any works on site.
2. Pressure testing area will be cordoned off.
3. Adequate signage will be provided and unauthorized entry will be restricted to the premises.
4. Pre-start check will be done on all equipment's. (Fittings, gauges, etc.).
5. Pressure testing will be notified to concerned people.
6. Material Safety Data Sheet (MSDS) will be provided for all hazardous materials.
7. Proper lighting arrangements to be provided during installation services.
8. Full and correct safety induction to be carried out by the safety officer to all the people before going to the site.
9. Tool box talks (TBT) will be carried out on applicable subjects prior to commencing works. TBT records will be maintained, included in the monthly statistics and a record will be provided to the Contractor within 24 hours of the TBT being conducted.
10. Any trenches must be made safe by the Contractor prior to NAFFCO employees entering the trench using a safe method i.e. shoring. Prior to any works commencing in trenches a PTW must be obtained from the Contractor. A thorough inspection must be made of any trench by both the Contractor's supervisor and the NAFFCO supervisor prior to entering the trench. If there is any doubt by the operatives or supervision carrying out the work with regard to safety, then the work shall not proceed. All trenches must be thoroughly inspected following any adverse weather conditions and if required the senior management / safety department may be consulted to ensure that trenches are safe to work in.
11. All power tools must be 110V, if higher voltage power tools are required to be used then special permission must be applied for from the Contractor via a permit to work system.

10.0 ATTACHMENTS

1. Inspection and Test Plan
2. Check sheets
3. Risk Assessment

INSPECTION & TEST PLAN

Work Scope	**INSTALLATION, TESTING & COMMISSIONING OF WET RISER PIPE**	
MEP Contractor	**AL HIKMA BUILDING CONTRACTING L.L.C**	
Project	**HARROW SCHOOL IN SAADIYAT ISLAND**	
Method Statement Ref. No.	**MS-NAF- -008**	**Rev.00**
ITP Ref. No.	**ITP-NAF- -008**	**Rev.00**

ITP Clause No	Inspection Description	Verifying Documents	Frequency of Inspection, Test and/or Approval	Records Generated (Weight of evidence docs.)	Testing Requirement/ Acceptance Criteria	Inspection Points		
						NAF	MEP	CLIENT
A.	***GENERAL***							
1	Shop Drawing Approval	AFC Drawings & Shop Drawings.	Prior to commencement of work	100%	All the Drawings should have minimum status of – No Objection with Comments (**B**) in order to proceed with any activity.	A	R	R
2	Material Submittal document	Contract Specification, Manufacturer's Recommendation.	Prior to commencement of work	100%	As approved by Consultant	A	R	R
3	Method Statement	Contract Specification, Manufacturer's Recommendation. & NFPA.	Prior to commencement of work	100%	As approved by Consultant	A	R	R
B.	***MATERIALS***							
1	Materials On-Site Inspections.	Contract Specification, Manufacturer's Recommendation & Material Report.	After Material Delivered to Site	100%	As per approved Material Submittals	A	H	W
C.	***INSTALLATION***							

1	Inspection for installation of Wet Riser Pipe System including all items in the check sheet.	Contract Specification, Manufacturer's Recommendation & Approved Method of Statement	At the time of Fabrication	100%	As per approved Method of Statement.	A	H	W

ITP Clause No	Inspection Description	Verifying Documents	Frequency of Inspection, Test and/or Approval	Type of Inspection	Testing Requirement/ Acceptance Criteria	Inspection Points		
						NAF	MEP	CLIENT
6	As Built Drawings.	Site Red Marked Drawings.	While the time of As-Built Submission for Approval	100%	As installed	A	R	R
D	***PRESSURE TESTING***							
1	– Pressure Test	Approved Method of Statement.	While the time of Pressure Testing.	100%	As per Approved Method of Statement.	A	H	W
E	***TESTING & COMMISSIONING***							
1	– Testing & Commissioning	Approved Method of Statement.	While the time of Testing.	100%	As per Approved Method of Statement.	A	H	W

LEGENDS: **A** – Action, **H** – Hold Point, **R** – Review Document Only, **W** – Witness Point

Prepared: _____ Company: _____

Reviewed: _____ Approved: _____

QA/QC Manager Project Manager

CHECK SHEET
INSTALLATION, TESTING & COMMISSIONING OF WET RISER PIPE SYSTEM

Project: Harrow School In Saadiyat Island-SEC#SDW4 Plot#P13

Consultant: Al Suweidi Engineering Consultants Bureau L.L.C **Building No.:**

Contractor : Al Hikma Building Contracting L.L.C **Date.:** **WIR No.:**

NO.	DESCRIPTION	CHECKED BY			
		CONTRACTOR	CONSULTANT	CLIENT	REMARKS
1	Check pipe routes as per approved shop drawing and co-ordination drawing.				
2	Check the pipe supports & hangers as per approved shop drawings				
3	Check the branch lines to proper level and connected properly to main lines.				
4	Clearance for access to the valves are provided				
5	Complete required accessories to the line have been installed and provided.				
6	Approved Shop Drawings, ITP and MS copy attached.				
7	Check location of the cabinets installed which is corresponding to the shop drawing.				
8	Check the 1" dia. Hose Reel, 1" dia. PRV, 1" dia. Lock Shield Valve, 2 1/2" dia. Landing Valve, installed as per the approved shop drawing.				
9	Check the 2 1/2" dia. X 30 meter Hose, CO2 Fire Extinguisher, DCP Fire Extinguisher available inside the cabinet as per the approved shop drawing.				
10	Check location of the fire extinguishers installed which is corresponding to the shop drawing.				
11	Approved MAR copy attached.				

Remarks/Comments (if any):

COMPANY	CONTRACTOR	CONSULTANT	CLIENT
Name			
Designation			
Signature			
Date			

CHECK SHEET FOR
PRE COMMISSIONING OF WET RISER PIPE SYSTEM

Project: Harrow School In Saadiyat Island-SEC#SDW4 Plot#P13

Consultant: Al Suweidi Engineering Consultants Bureau L.L.C **Building No.:**

Contractor : Al Hikma Building Contracting L.L.C **Date.:** **WIR No.:**

NO.	DESCRIPTION	CHECKED BY			
		CONTRACTOR	CONSULTANT	CLIENT	REMARKS
1	All material is installed as per approved MAR & MVR.				
2	Installation is as per approved shop drawing				
3	Pressure Testing is completed				
4	All accessories are installed without damage				
5	Fire extinguisher is available inside the Fire Hose Cabinet				

Remarks/Comments (if any):

	CHECKED BY	VERIFIED BY	WITNESSED BY
NAME			
SIGNATURE			
DATE			

System Name	**WET RISER PIPE SYSTEM**
Type of Inspection	**Commissioning of Hose Reel & Landing Valve**

Item	Test Description	Performance Requirement	Yes/No	Remarks
Hose Reel	Open the most remote 1'' fire hose reel	Water should discharge from the 1'' nozzle at minimum pressure 4.5 bar.		
Landing Valve	Open the most remote 21/2'' Fire Hose Landing Valve	Water Should discharge from the 21/2'' Nozzle at minimum pressure 6.9 bars		

	Checked by	*Verified By*	*Witnessed by*
Name			
Signature			
Date			

Installation, T&C of (WRP) Wet Riser Pipe System

TASK DISCRIPTION: Installation, T&C of (WRP) Wet Riser Pipe System	*Project Name: HARROW SCHOOL IN SAADIYAT ISLAND*	Division:	Abu Dhabi Project
		RA No.	RA-003-NF-AUH-PROJ
		Rev No.	00

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
1	**Mobilization of New Personnel**	• Lack of experience Unaware of site condition	• Personnel Injury • Property damage	• Site workers • Site staff • Site visitors	3	3	**9**	• Adequate HSE Induction training must be given prior to mobilization on respective task. • Specific HSE Training in site rules, worksite procedures and emergency protocols. • Pre-planning of tasks assigned based on experience required. • Provide necessary PPE and training in the proper use and handling including safe storage of PPE. • Constantly monitor and frequent consultation on assign duty including the provision of competent supervision. • Avoid lone working of newly mobilized personnel. • STARRT Briefing / Tool Box Talks to be done and ensure he should adopt necessary safe work practices and worksite procedures. • Never assign immediately in risky activities such as working at height. • Must frequently monitor where it needs to use work equipment to ensure appropriately use of the equipment. • Never allow personnel on a piece of equipment which they are not familiar with and appropriately trained in its use. • During summer-worker(s) should be acclimatized prior to mobilized in extremely hot work environment.	1 x 3 = 3	Site Engineer; Supervisor; Operatives	**ADOSH SF CoP 14.1 Manual Task Involving the Handling of People**
2	**Transportation of Workers to & from Labour Accommodation**	• Vehicle collision with other road users & pedestrians • Overloading • Vehicle failure • Human failure • Adverse weather condition • Fall from vehicle while on transit • Fire	• Fatality • Serious personal injury	• Site Workers	3	5	15	• Only adequately trained and authorized driver to operate the bus where he must aware of site & road traffic requirements. Holder of valid driver's license with the corresponding category to drive the vehicle. • Driver to undergo regular awareness training on defensive driving techniques. New drivers must undergo familiarization training with trained driver to ensure adherence to traffic requirements including direction of travel to & from accommodation. • Observed speed limit, designated vehicle lane, safe distance with other vehicle, passing/overtaking rules, and vehicle	1 x 5 = 5	Driver; Supervisor; Operatives	**ADOSH SF CoP 44.0 Traffic Management & Logistics**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								route to and from labour accommodation. • Bus boarding only in a designated area inside the site. Under any circumstances never allow to board or drop passenger along the road. • During bus boarding, vehicle must be securely parked and ensure parking brake engaged. • Bus boarding must be adequately controlled with the presence of security or watchman and traffic Marshall. • Onsite driving must be observed pedestrian movements. • Door must be securely close during transit. • Driver must be physically fit and as necessary must undergo regular health screening at site clinic. • Driver should not intake any medication or alcohol when driving that may resulted to drowsy reaction. • Boarding of buses only as per sitting capacity. Never use buses to load extra materials. • Driver shall not use mobile phones nor head set while driving. • Vehicle must be well-maintained and regularly check by the driver ensuring for safe operation i.e. tires, brakes, mirrors, steering, indicators, etc. Found defects on the vehicle should immediately reported and repaired before return back to service. • Ensure the availability of emergency equipment inside the vehicle e.g. first aid kit, fire extinguisher and hammer. • Never drive in extreme adverse weather condition e.g. sand storm, dense fog and heavy rain fall. • Driving at night should ensure driver must be physically and medically fit with a clear vision and have adequate rest break.			
3	**Vehicle Movement - Delivery & Shifting of Materials / WR Pipes**	• Collision with other vehicles and other earth moving equipment • Hit by / struck by moving pedestrians	• Fatality • Serious Personal Injuries	• Site workers • Site staff • Site visitors	3	5	15	• Vehicles should travel within traffic routes designated after obtaining necessary permission from the security gate. • Planning to be done prior to intended deliveries. This includes ensuring safe access and routes of the vehicle onsite. Travel paths must be free of any obstructions. • Driver must undergo safety induction when entering the site and ensure complete compliance with site safety and traffic requirements. • All vehicles should be fixed with revolving flashing light,	1 x 5 = 5	Driver; Site Engineer; Supervisor; Operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								audible reverse alarm & mirrors. • No using mobile phone when driving onsite. • Seat belts to be worn always while driving. • Vehicles to be parked in the designated parking /unloading areas. • Start the unloading works after switching off the engine and engaging hand brakes. • No person should lay/rest beneath a parked vehicle. • Banks man to be engaged during reversing of vehicles. Coordinate with logistic team upon arrival onsite. • Ensure the vehicle speed limit must be followed as per Main Contractor requirements inside the site. • Driver to comply with site traffic requirements. • Never left the vehicle unattended while engine is running. • Driver should have valid driving license. • Driver/operator must carry out daily pre-operational inspection prior to mobilize using daily inspection checklist. Any found defects must be immediately notified to the supervisor.			
4	**Use of Forklift for Shifting of Materials / Pipes**	• Collision with other moving vehicles and pedestrians • Personnel may have struck by / crush by when reversing	• Fatality • Serious personnel injuries	• Site workers • Site staff • Site visitors	3	5	15	• Never use ramp areas for unloading materials – only designated areas as per logistic instructions. • Ensure no pedestrians or unnecessary movement in close proximity. • Traffic management plan to be adhered to and designated traffic routes used. • Strictly 'NO MOBILE PHONES DURING OPERATION'. • Never left the machine unattended with engine working. De-energized the machine and parked in a designated area and remove the key from ignition switch to avoid unauthorized use. • Persons not to stand between machine or the load and any fixed object to prevent being crushed. Carry loads close to the ground with articulated forklifts, back and front wheels must be in same straight line. • Check for people in the vicinity. Keep personnel clear of operations (Plant / Personnel segregation). • Designated walk ways to be provided for pedestrians' access. Must be clearly marked and sign posted. • Operator to observe speed limit and site traffic	1 x 5 = 5	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks** ADOSH SF CoP **17.0 Safety Signage and Signals** ADOSH SF CoP **22.0 Barricading of Hazards**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								requirements. • Operator to look always in the direction of and clear view of the path of travel. • When front view has been obstructed by the load, reverse movement to be done. • Ensure the provision of trained banks man – restrict unnecessary movement around the machine. • Machine must have fitted with audible reversing alarm and amber light including mirrors (rear view & wing) use by the driver to oversee rear side of operation. • Exclusion zone with physical barriers must be provided during the operation. • Never allow installing curtains at operator's cab that could cause obscuring view on the vicinity during operation. • Banks man must always in safe position avoiding perpendicularly with the FLT. • During loading & unloading, truck must be fully secured with brake engaged and wheel blocks to prevent sudden movement.			
		• Fall of load / materials	• Fatality • Serious personnel injuries	• Site workers • Site staff • Site visitors	3	5	15	• Load to be correctly located on the forks, secures against slipping and wide loads and balanced not to tilt sideways. • Masts to be vertical or tilted slightly back and load must be evenly cantered. • Load to be carefully deposited on to loading bay / drop-off point avoiding shock loading. • Trained Slinger/Signaler to guide loads being placed or positioned. • Avoid overloading – only as per safe working load. Load charts to be in all cab. • Never travel with highly raised load. When travelling with load such as pipes, it must be secured by lashing into the fork. • Restrict any personnel near the activity area. • When using hook attachment, operating procedures as per mobile cranes apply. • Before using any attachment check with the manufacturer regarding the machine stability. • Automatic Safe Load Indicators must be fitted. • When raising, or shifting load into elevated surface, area to	1 x 5 = 5	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								be fully barricaded and sign posted. • Machine must have overhead guard to protect operator against falling objects. • During loading & unloading, truck must be fully secured with brake engaged and wheel blocks to prevent sudden movement. • Flagman to station at all times to control vehicle and pedestrian movements.			
		• Contact with overhead obstruction & power lines	• Fatality / Electrocution • Electric shock/burns	• Site workers • Site staff • Site visitors	3	5	15	• Clear view and attention/extra precaution by the operator when loading/unloading materials when working near electrical cables are being routed and any overhead obstructions. • Signaler/banks man to be positioned to adequately guide the operator.	1 x 5 = 5	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**
		• Fire hazards from generation of flammable vapour	• Fatality • Burns	• Site workers • Site staff • Site visitors	2	5	10	• During refueling, fuel tanks must not be fill with the engine is running. Must be done only in designated and well-ventilated area. • Ensure no leak on fuel system. Must be thoroughly checked. • No open flames when checking level of fuel or battery electrolyte. • Battery must be charge in a designated & well-ventilated area including changing of battery to be done only by competent person.	1 x 5 = 5	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**
		• Fork improper positioning - tripping hazard	• Personal injury	• Site workers • Site staff • Site visitors	3	4	12	• Fork must be fully and horizontally lowered on ground surface. • Park only on designated areas away from pedestrian movements. • Never left the machine unattended with engine working. De-energized the machine and remove the key from ignition switch to avoid unauthorized use. •	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**
		• Fall of person	• Serious Personal Injury	• Site workers	2	5	10	• Under no circumstances: - No passengers to be carried or back riding. - No lifting of a person on the forks unless an authorized and appropriate attachment to be use e.g. man basket •	1 x 5 = 5	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
		• Smoke / carbon emission	• Suffocation • Respiratory disorders	• Site workers • Site staff • Site visitors	3	4	12	• Use only in well-ventilated areas. Access to basement area, ensure suitable force ventilation must be in place to disperse emits carbon contaminant. • FLT must be regularly checked and maintained its operational condition. • FLT must be de-energized when not in use especially at basement areas. •	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	**ADOSH SF CoP 51.0 Powered Lift Trucks**
5.	**Use of Threading / Grooving Machine**	• Entanglement of body parts / dresses in the rotating part of machine.	• Fractures/amputations/cut injures	• Site Workers • Site Staff • Site Visitor	3	3	9	• Ensure covers in place. Do not operate the machine with covers removed. • Do not wear loose gloves or loose clothing or jewelry. Keep sleeves and jackets buttoned. Do not reach across the machine or pipe. • Make sure switch is in the OFF position before plugging power cord or when using nipple chuck wrench. • Keep hands away from rotating pipe and fittings. • Stop machine when screwing fittings on pipe or wiping thread. • Machine is made to thread and cut pipe or bolt. Follow instructions in Operator's Manual on machine uses. • Restrict unnecessary movement around the machine. • Ensure sufficient working space to allow free movement of the operator including positioning of pipe work piece and provision of standard lighting. • Ensure the machine in complete stop before making any adjustment.	1 x 3 = 3	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 47.0 Machine Guarding ADOSH SF CoP 35.0 Portable Power Tools
		• Fall/tipping over of the machine	• Serious Personnel Injuries	• Site Workers • Site Staff • Site Visitor	2	4	8	• Secure machine to bench or rigid stand to keep the machine from tipping over. • Support long heavy pipe with adequate pipe supports to prevent tipping of the machine. • Kept area with sufficient space to allow proper movement and placing of tools and materials. •	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 8.0 General Workplace Amenities
		• Fall of pipe while being loosen	• Serious Personnel Injuries	• Site Workers • Site Staff • Site Visitor	2	4	8	• Pipe must be securely mounted and clamped using appropriate tool prior to start grooving or threading. • Tighten properly – over or under tightening may result in the tool walking off the pipe. • Do not over reach. Keep proper footing and balance at all times. Proper footing and balance enable better control of	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 35.0 Portable Power Tools

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								the tools in unexpected situations. • Support long heavy pipe with pipe supports to prevent tipping of the machine. •			
		• Faulty electrical connection	• Electrocution / Electric shock • Serious Personnel Injuries	• Site Workers • Site Staff • Site Visitor	2	4	8	• Machine must be only use by foot switch and ensure it is not broken. • Lock foot switch when not in use to avoid inadvertent starting. • Operate machine from switch side only. Do not block or disconnect foot switch. • Make sure switch is in the OFF position before plugging power cord or when using nipple chuck wrench. • Machine is subject to PAT testing by competent electrician and ensure routine pre-use check by the user. • Ensure machine must be connected or routed to RCD protective system. • Ensure area must be kept away from wet/moisture conditions/surface including conductive materials. • Kept cables from damage to any heat materials (e.g. newly threaded pipes, swarf/metal chips), sharp edges or moving parts on the machine. •	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 15.0 Electrical Safety
		• Slip & tripping hazards	• Personnel injuries	• Site Workers • Site Staff • Site Visitor	3	3	9	• Position the machine keeping adequate space for the operator freely move around the machine. • Designated storage for the pipe and ensures it must be choking to avoid from rolling over. • Clean up spilled threading oil immediately to avoid spreading. • Kept tools and materials away from threading area. • Provide bucket to catch swarf materials underneath threading area. • Kept area with standard lighting arrangement. • Restrict unnecessary access / entry.	1 x 3 = 3	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 8.0 General Workplace Amenities
6.	**Use of Press Drill Machine for channel supports**	• Clothing Entanglement with moving parts	• Personal injuries • Stabbing injury / Puncture	• Site workers	3	4	12	• Operator should not wear loose clothing or gloves, or use rags or other materials, which may lead to entangled in rotating parts. Keep sleeves and jackets buttoned. • Drill bit should be securely fitted with the machine prior to operate the drill machine.	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 35.0 Portable Power Tools

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Ensure the depth of cut just projects through the underside of the material being cut. • Disconnect before adjusting and fixing drill bits on the machine. • Never exert excessive force to the machine during drilling hard materials. • Only trained person should operate the machine.			
		• Contact with faulty electrical components	• Electrocution / electric shock	• Site Workers • Site Staff • Site Visitor	3	4	12	• Maintain handheld power tools with approved spare parts and fittings including electrical cable and socket and free from any damages. • All electrical tools to be PAT tested and colour coded prior to use on site. • Machine must be routed through electrical distribution board fitted with 30m/A RCD. • Cables must be positioned to avoid accidental damage e.g. rotating bits, sharp edges and kept away from wet surfaces.	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 15.0 Electrical Safety
		• Use of damaged / substandard tool and accessories	• Personal injuries	• Site workers	3	4	12	• Ensure that the drill bit is the right type for the material to be drilled and should be free of damage. • Thoroughly check the use of machine / accessories to confirm not counterfeit or reconditioned items have been sold as new. • Ensures the use of tested and tagged power tools. • A pre-use check must be done by the operator ensuring it is good operational condition. • Ensure Drill Machine shall be routinely maintained and serviced. Records shall be retained on site Power Tools Register. • Damaged tools must be immediately removed from site and subject for repair where necessary.	1 x 4 = 4	Site Engineer; Supervisor; operator; operatives	ADOSH SF CoP 35.0 Portable Power Tools
7.	**Hot Work Activity (Arc Welding, Grinding)**	• Striking Molten particles • Fumes • Radiation • Tripping hazard	• Burn injury • Fire	• Site Workers • Site Staff • Site Visitors	3	5	15	• Obtain PTW from the authorized person prior to commence the activity and ensure all precautions must be observed. • Area must be free from any combustible materials – at least 10 meters. • Welding works must be in well-ventilated areas. Where necessary, dilution ventilation to be arranged to disperse contaminants or use of exhaust ventilation system. • Use of welding screen must be provided to prevent arc and striking molten particles coming in contact to nearby activities.	1 x 5 = 5	Safety Officer; Site Engineer; Supervisor;	**ADOSH SF CoP 28.0 Hot Work Operation**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Isolate the area to restrict unnecessary access, relevant signage to be posted. • Ensure the provision of trained fire watcher until activity will be completed. • Only 3rd party certified welder to perform the welding works. • Welders and helpers to use leather hand gloves. • Welders to use PPE including welding shield of shade 11 DIN, welders hand gloves, apron and safety helmet/coverall. • Suitable fire extinguisher must be made available in the welding area. In addition, bucket of water and sand to be provided. • Use of appropriate respirator against fumes (use N95 type of respiratory filter / masks). Welder must position away from welding fumes. • Work area must return in safe condition once hot work is completed and ensure PTW must signed off by the authorize person. • Fire Watcher must wait at least 30 minutes before leaving the Hot Work Area. • Only adequately trained welder and fire watcher ensuring that they are aware on the following: - Exposure of fumes and radiation. - PPE use and limitations. - Permit requirements. - Fire prevention • Adequate instruction must be given to involve operatives including pre-start briefing prior to start the activity. • Ensure competent supervision and frequent monitoring. • Cables will be routed in such a way not to pose any trip hazard.			

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
8	**Use of Hand Tools (Pipe wrench, hammer etc.)**	• Damaged tools • Improvised tools • Sharp edges • Fall of tools from height	• Personnel injuries	• Site Workers • Site Staff • Site Visitors	4	3	**12**	• Ensure the conditions of the hand tools are good, when obtaining from the stores. • Hand tools shall not be kept on walkways and working platform • Hand tools shall be kept in tool boxes whenever not in use. • When accessing at height, hand tools must be place in a tool belt/tool bag. Never carry hand tools by hand when accessing/descending ladder. • Tie off tools with a rope to prevent its fall while working at height or near edges. • Under any circumstances never put hand tool at the back pocket that might cause injury. • All tools shall be inspected for any damages on daily basis and at regular intervals. damaged must be return back to the store and tag “NOT TO USE”. • Don’t keep any tools unattended at the height after the work. • Store keeper will inspect all the new tools before issuing to site. • The operative must check the hand tools prior to use (such as pipe wrench teeth etc.) if the hand tools found defective, it must be return back to store and remove from service. • Ensure that no homemade/make shift tools are used at site. • Always wear suitable hand gloves when using hand tools. • Workers must be adequately trained and instructed on safe working procedures through toolbox and/or STARRT briefing. • Found defects must be removed immediately from service.	1 x 5 = 5	Site Engineer; Supervisor; Storekeeper; operatives	**Manufacturer’s Manual**
9	Use of Portable Electrical Equipment	• Faulty / damaged equipment. • Site Environment. • Trailing leads.	• Electrocution. • Fire. • Injury. • Fatality.	• Site Workers • Site Staff • Site Visitor	4	5	20	• All equipment to be inspected by competent persons prior to use on site. • Temporary cables, if drawn through the floor should be placed at the edge of the floor. • Ensure all machines are inspected and colour coded. • Ensure plug, drill bit, drilling machine and electric cables are free from defects. • Ensure the power tools are provided with yellow coloured Industrial Socket 110V. • Cables to be routed as not to cause trip hazards.	1 x 5 = 5	Site Engineer; Supervisor; operatives	**ADOSH SF CoP 35.0 Portable Power Tools**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Cables to not to be routed through wet surfaces. • Ensure the operatives are not continuously using the machines to prevent from vibration hazard. Job Rotation. • Ensure the operatives are using the appropriate PPE when operating tools. Ear protection, gloves, eye protection, dust masks etc. • Any damaged equipment to be immediately withdrawn from service.			
10	**Use of Step/Podium Ladder**	• Fall of person due to: - Overreaching/overloading - Improper positioning - Unsecured ladder - Damage ladder • Collapse of ladder • Fall of Materials	• Personnel Injuries	• Site Workers • Site Staff • Site Visitors	4	3	**12**	• The podium steps MUST be erected in accordance with the manufacturer's instructions. Once erected, check the podium steps to ensure all components, hooks and locking mechanisms fit and operate correctly. • Check ALL components are free from damage for correct function and use. • Always ensure podium ladders must situated in a firm level surface. • Check SWL prior to use and ensure it must not overload. Only one person of the platform and never stack any materials on the platform. Ensure that the combined weight of person plus tools not exceed SWL which designed for such a load as recorded in the ladder manufacturer's instructions. • Ladders must not be leant against podium steps or stood on the platform to gain extra height. Never stand on the frame to gain extra height. • Avoid placing tools on platform. Ensure built-in tool holder affixed on the platform or use of tool belt/tool bag for only lightweight tools. • Never carry tools and materials by hand when climbing ladders. • Avoid overreaching while on platform. • Ensure guardrail gate must be place and ensure it must be fully closed while working on platform. • Where necessary, outriggers must be provided as per manufacturer's instruction to ensure stability of the ladder. • Ensure no person on a ladder when it is being moved to a new work location. • Ladder must be fully open and locked.	1 x 3 = 3	Site Engineer; Supervisor; operatives	ADOSH SF CoP **37.0 Ladders**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Use of both hands to when ascending and descending the ladder. • Erected only by a competent person and MUST be inspected before use, where found defective or damaged remove ladders from service. • Avoid near the leading edges, floor openings and penetrating surfaces • Never set up in a passageway, doorway, driveway or other place where a person or vehicle might strike it, causing instability or its collapse. • When left, unattended signs are provided warning against unauthorized use of the ladder. • Never work from ladders is not carried out directly over people; • Ladders should not be modified or used or any other purposes as designed. • Ensure the use of slip resistant appropriate footwear when using ladders. • Rungs MUST be clean before the ladder is used. Ensure rungs MUST be free of any contaminants e.g. grease or oil. • Ensure no person on a ladder when it is being moved to a new work location. • Never reach or stretch to either side or away from the ladder, except to hold a stable supporting structure. • Workers using ladders MUST be adequately trained and competent. • Ensure competent supervision to workers using podium ladder. •			

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
		• Contact with overhead electrical cables / other obstructions	• Electrocution	• Site Workers • Site Staff • Site Visitors	3	4	**12**	• Never use metal ladders or wire-reinforce ladder near electrical equipment. • Work area must be free of any overhead obstruction e.g. electrical cables. Where not avoidable ensure appropriate distance for at least 6 m horizontally distance unless it has been made dead or it is protected with insulation. • Workers MUST be properly instructed in safe system of work. • When works cannot be prevented near electrical equipment obtain electrical work permit and comply with precautions.	1 x 4 = 4	Supervisor; operator; operatives	ADOSH SF CoP **37.0 Ladders**
11	**Installation of (WRP) Wet Riser Pipe inside shaft using Chain Block**	Fall of pipe due to: • Failure of lifting equipment / anchorage points • Overloading • Trapping hazard	• Fatality • Serious Personal Injuries • Property damage	• Site Workers • Site Staff Site Visitor	3	5	15	• Ensure approved MSRA must be followed and communicated to all involve operatives. • Ensure suspension points and anchorages are adequate for the full imposed load. • Where suspension points anchored to the structure, ensure it must be securely bolted on the structure and pull out test to be done to ensure the integrity of installation. • Lifting must be directly over the center of gravity so that the line of rigging is vertical. - Prior to use check: • All moving parts for evidence of wear, damage or distortion. • Chain for deformity, nicks, chipped, cracked or damaged links and chain should not be twisted or stretch chain spring. When found defects, must be removed from service. • Chain seats correctly into the chain wheel, with no “riding”. • Operation of brake system or pawls to ensure correct operation. • Hooks for wear or distortion, and check operation of safety latches. • Operation of controls to ensure that unit shuts off when pendant control button is released. • Check the travel path to ensure free movement of the pipe. Kept body parts away when rigging the pipe. • Chain block to be tested with 3rd party prior to use. • SWL to be marked on chain block and ensure it will not be exceeded.	1 x 5 = 5	Site Engineer; Supervisor; Operatives	ADOSH SF CoP **34.0 Safe Use of Lifting Equipment & Lifting Accessories**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Use the equipment only for the purpose for which it is designed. • Ensure load must be securely sited into installation area prior to unhook with the chain block. • Keep area of unnecessary movement. • Ensure supporting bracket must be rigidly bolted on the fixed structure. • Never attempt lifting operations unless you have been trained in the use of the equipment and slinging procedures. • Do not allow people to stand / cross under the suspended load. • Never left the load unattended while suspended unless in an emergency then ensure the area is cordoned off and kept clear. • Ensure safety latches must be securely engaged prior to start hoisting the transformer • Never attempt to push the load that could cause the load to swing. Where necessary, install tagline to control the load while hoisting. • Adopt safe slinging practices and follow the instructions of the safe use of the equipment. Never attempt to impose sudden or shock load. • Prior to lift load, try the block to ensure that it operates correctly and that the brake is effective. • Chain block must be adequately maintained to ensure safe operation including greasing with the brake system. • Chain block must be place in adequate storage area when not in use. Avoid exposing to chemicals e.g. acids that could cause deterioration including chain should be clear off the ground surface.			

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
12	**Installation of (WRP) Wet Riser Pipe on concrete ceiling slab using Genie Lift**	• Fall of load • Fall of the equipment / topple down • Run over to the feet of the operator • Tripping hazard	• Fatality • Serious Personal Injuries • Property damage	• Site Workers • Site Staff • Site Visitor	3	5	15	• Positioning of the pipe lifter must ensure the following: - Pipe must be evenly centre and secured. - Pipe must close to the fork mast with V-shape pipe support and secured it properly with lashing built. - Stable and level surface, avoid ramp and slope areas. - Away from holes • Prior to use equipment must be thoroughly inspected and certified by 3rd party ensuring safe for lifting operation. • Equipment must be use only within its safe working load. Must be posted in the equipment. • Ensure forks are properly aligned. • Exclusion zone around hoisting operation and warning sign to be posted to restrict unauthorized access. • Pre-use check by the user including wire rope and other lifting mechanism to sure they aren't loose, frayed or otherwise damaged. • Ensure safety operating accessories must be in place to secure the load while it has been raised. • Ensure the wheels must be adequate secured while load being suspended to prevent from sudden movement. • Keep safe distance to the equipment when lifting the load. • Only adequately trained personnel must use the machine. • Ensure adequate supervision for the task. • Proper coordination and communication amongst operatives. • Never left unattended while the load suspended, area must be barricaded. • Under no circumstances, never use the equipment to carry or lift personnel. • When pipe lifter is not in use, the forks should be lowered to the lowest position resting parallel to the floor. • Provide barricade and signage during lifting and installation of pipe.	1 x 5 = 5	Site Engineer; Supervisor; Operatives	ADOSH SF CoP **34.0 Safe Use of Lifting Equipment & Lifting Accessories** ADOSH SF CoP **17.0 Safety Signage and Signals** ADOSH SF CoP **22.0 Barricading of Hazards**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
13	**Installation of Breeching inlet, Fire Extinguisher & Fire Hose Cabinet System.**	• Over pressurization causing failure of fittings, bends, end caps and weld joints • Flooding during pressure testing due to leaks	• Serious personnel injuries	• Site Workers • Site Staff • Site Visitor	3	3	9	• Ensure Project Engr. / Site Engr. had briefed the Method Statement and Risk Assessment to all involved employees prior to commence the activity. • Conduct regular Tool Box Talk / STARRT Briefing to all employees related to the specific task. • Before starting any type of work, ensure a complete visual inspection is being done in the workplace and access/egress for any protruding objects and sharp edges. • Prior to start the job, discuss the workplace hazards and risks associated to the task (e.g. sharp edges, protruding objects, awkward postures/movements, narrow/congested areas, access/egress.) • Ensure the employees has been attended Work at Height Training. • Ensure the employees has been attended Manual Handling Training. • Ensure provision of Safe Working Platform for the task. • Provision of adequate Supervision at all times. • Ensure always maintained three points of contact and Not attempt to carry other objects in hands while ascending or descending the ladder. • Safe use of A-type ladder training awareness to be conducted to all employees. • Ensure the employee has wearing suitable PPE for the task.	1 x 3 =3	Site Engineer; Supervisor; operatives	**ADOSH SF CoP 21.0 PTW System**
14	**Pressure Testing** **(Hydrostatic Test)**	• Over pressurization causing failure of fittings, bends, end caps and weld joints • Flooding during pressure testing due to leaks	• Serious personnel injuries	• Site Workers • Site Staff • Site Visitor	3	5	15	• Obtained PTW should be followed strictly prior to start of work. • Ensure the task performed as per approved Method Statement and communicated to the operatives • Third Party Calibration certificate of Pressure gauge & pressure pump and will be having a pressure range from 0-20 bar. • Prior to start the work make sure all openings are sealed by plug/end cap. • Ensure the construction and materials must rate as per relevant standard requirements to ensure maximum protection.	1 x 5 = 5	Site Engineer; Supervisor; operatives	**ADOSH SF CoP 21.0 PTW System**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Pressure test will be performed under the direct supervision of a competent engineer. • The responsible Competent Engineer must identify the maximum test pressure to be used as determined by the specific network or systems pressure testing procedure, method statement and design drawings. • All members of the pressure testing team must be trained in the pressure testing procedure and trained employees will receive an identity card for identification to indicate that they are authorized to conduct pressure testing. • All the workmen engaged in pressure testing must be briefed on the hazards, precautions and emergency procedures prior to the testing starting and risk assessment must be adequately communicated and recorded. • Inspect all connected fittings and devices on the system or network to be pressure tested to ensure that they have been correctly installed and that they are rated for the maximum test pressure. Refer to approved design drawings and signed off inspection request form (IR). • Isolate any exposed equipment that could be damaged by the pressure testing. • Secure a blind flange or end cap suitable for the system or network's rated pressure on all openings that are not closed off by valves. Ensure additional safety support brackets are installed behind end caps. • Ensure that other sections of the system or network that is not being tested and isolated from other sections by in-line valves are vented. • Ensure pressure relief valves are installed at the highest point of the system or network to be pressurized. • Ensure that isolation valves and calibrated pressure gauges are installed in the correct positions as determined by the specific network or systems pressure testing procedure. • Warning signs are installed on the system or network that is being pressure tested and barricading of exposed areas where pressure testing will take place. (Where possible evacuate all workers from the area during pressure testing) • Flagmen must be placed at strategic high-risk areas which cannot be effectively barricaded to prevent unauthorized			

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								entry into areas where networks or systems are being pressure tested. • Technician to constantly monitor pressure gauge during initial pressurization. • A system of radio communication to enable the rapid and accurate transfer of information must be employed to ensure that any concerns such as leaks are dealt with in the minimum amount of time • NO attempt must be made to repair a leaking system or vessel while it is under pressure. If any leakage is observed, the entire system must be depressurized, and the permit must be cancelled. A new permit to work must be obtained after repair work has been completed. • Appropriate PPE will be used by the operatives (gloves, goggle, helmet safety shoes, cover all)			
15.	**Testing & Commissioning of wet riser pipe system**	• Incompetent Personnel • Defective pressure pump and gauges • Failure of joint connections • Poor illumination	• Serious personnel injuries	• Site Workers • Site Staff • Site Visitor	3	5	15	• Obtained valid Permit to Work prior to start T&C activity. • Follow an approved Method Statement and communicated to the involved operatives. • Ensure the availability of competent supervisor or engineer during testing and commissioning. • Only authorized and competent personnel for the task. • The T&C area shall be suitably cordoned off and warning signs to be displayed and watchman standby. • Ensure Pre-commissioning checklist are completed. • Ensure the installation and pressure testing of the pipes are completed and accepted. • Ensure pressure pump and pressure gauges are calibrated with valid 3rd party certificate • No one shall be allowed to work on or near pressurized system till complete depressurization. • Only authorized employees shall be in the work location. • Pressurization and depressurization shall be gradual and in increments. • Employees shall not attend to any leaks or attempt to tighten any joints while pressurizing. • Lay hoses properly and clear from walkways.	1 x 5 = 5	Site Engineer; Supervisor; operatives	**ADOSH SF CoP 21.0** **PTW System**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Suitable communication among performing personnel shall be maintained to facilitate easy shut off the system. • Adequate illumination shall be provided at T&C area. • Always wear appropriate PPE's.			
16	**Depressurize / draining system or network**	• Flooding during draining due to inadequate facilities / tanks	• Serious personnel injuries	• Site Workers • Site Staff • Site Visitor	3	5	15	• Open air release valve before draining system or network. • Supervisor to verify air release valve is opened before opening draining valve to system or network. • Where lines have to be drained sufficient provision is made to contain drained water from system. • Dispose of water where directed to main sewer or adequate containers/tanks/water bucket provides, ensuring all pipe/hose connection were adequately secured. • Remove warning tags and barricades after the completion of the hydrostatic pressure testing and close-out the Permit to Work. • Ensure maintained good housekeeping before leaving the workplace.	1 x 5 = 5	Site Engineer; Supervisor; operatives	**ADOSH SF CoP 21.0 PTW System**
17	**Working in Summer Season**	• Direct exposure to sunlight • Extreme hot weather condition	• Heat related Illnesses / disorders - Sun Burn All persons (indoors and out) - Dehydration - Heatstroke / Heat stress • Skin Cancer	• Site Workers • Site Staff • Site Visitor	4	5	**20**	• Provision of appropriate rest area during break time with sufficient cooling system to acclimatize and reduce body heat such exposure after working under hot environment. • Newly mobilized workers shall be acclimatized and never assigned heavy task or direct exposure to hot environment. • Re-schedule hard work activities in a coolest part of the day where possible. Ensure no worker work alone in a heat stress area. • Site supervisors shall perform job rotation to the workers. Must aware on TWL (thermal work limit) and its necessary precautions. • Shaded rest area shall be arranged adjacent to any activities. • Ensure adequate ventilation system by supplying fresh air such as working inside basement/close areas. Where an inadequate airflow force ventilation must be provided.	1 x 5 = 5	Safety Officer; Project Manager; Site Engineer; Supervisor; operatives	**ADOSH SF CoP 11.0 Safety in the Heat**

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		
								• Provide adequate rest recovery period for the workers carrying out heavy manual handling activities. • Arranged a team of workers to fetch water from the designated water source point and to feed team workers at work area with the help of thermos. • Drink plenty of fluids while working in hot conditions. Must ensure an adequate supply of drinking water close to the working area as per the number of workers and ORS/lemon to add in their drinks to replenish loss of body fluids due to sweat. • To avoid heat stroke light clothing should be worn, drink a lot of water (even if you don't feel thirsty.) • Aware on summer work timing as per site requirements. • Health awareness program regarding the consequences of exposure to excessive hot working environment and the importance of maintaining adequate hydration. • Regular TBT meeting shall be conducted to the workers for the necessary precautions in avoiding heat related illnesses. • Ensure the availability of trained first aider to summons in case of emergency. • Ensure workers are supplied with meals that has a healthy balance diet with appropriate nutrition and calories that could sustain working under hot environment. • Adequate PPE (i.e. helmets, t-shirts (Long sleeves are preferable), high visibility vest, long pants, safety boots) and proper clothing during when working under high temperature e. g. lightweight, cotton and light coloured) • Adhere all the provisions of UAE Ministerial Decree No. 401 of 2015 Concerning the Determination of Midday Working Hours.			

Installation, T&C of (WRP) Wet Riser Pipe System

SI No.	TASK STEP	HAZARDS, HAZARDOUS EVENT	EXPECTED CONSEQUENCE	OCCUPATION OF PEOPLE AFFECTED	INITIAL RISK			NECESSARY CONTROL MEASURES	RESIDUAL RISK	PERSON RESPONSIBLE	REFERENCE (Standards, Procedure, CoP, etc.)
					L	S	R		L x S = R		

LEGAL COMPLIANCES:

- **UAE Federal Law No. 8 Chapter 5** – Worker's Health and Safety Protection and Social Care
- **UAE Ministerial Order No. 32 in the year of 1982** - The Determination of Preventive Methods and Measures for the Protection of Workers from the Risk of Work
- **Abu Dhabi Occupational Safety and Health System Framework-**Elements and Code of Practices
- **UAE Fire and Life Safety Code of Practice 2018**
- **UAE Occupational Health and Safety Management System (OHSMS) National Standard 2016**
- **UAE Ministerial-Decree-No. 401 of 2015 -** Midday Working Hours

DATE	REVIEW PERIOD	DATE OF NEXT REVIEW	SIGNATURE	
25 Aug 2026	6 MONTHS	25 Feb 2027	**Prepared by:** Name : Sujith.P Designation: Safety Officer	**Reviewed by:** Name : Noor Afzal Shah Designation: **AUH Safety In charge**

HSE Risk Matrix			Consequences				
			1	**2**	**3**	**4**	**5**
			Insignificant Negligible Injury (1st aid) Slight environmental damage Slight damage to assets Negligible damage to reputation	**Minor** Minor Injury (outpatient) or health effect Minor localised environmental damage Minor damage to assets Minor damage to reputation	**Moderate** Major injury (hospitalization) or illness Moderate localized environmental damage Damage to assets Local damage to reputation	**Major** Single fatality / permanent disabling injury or illness Widespread environmental damage Widespread loss of assets National damage to reputation	**Catastrophic** Multiple fatalities / permanent disabling injury or illness Widespread permanent environmental damage Widespread permanent loss of assets International damage to reputation
Likelihood	5	Almost certain to occur in most circumstances	Medium (M) 5	High (H) 10	Extreme (X) 15	Extreme (X) 20	Extreme (X) 25
	4	Likely to occur frequently	Medium (M) 4	High (H) 8	High (H) 12	Extreme (X)16	Extreme (X) 20
	3	Possible and likely to occur at some time	Low (L) 3	Medium (M) 6	High (H) 9	High (H) 12	Extreme (X) 15
	2	Unlikely – but may occur in exceptional circumstances	Low (L) 2	Medium (M) 4	Medium (M) 6	High (H) 8	High (H) 10
	1	No recorded occurrence	Low (L) 1	Low (L) 2	Low (M) 3	Medium (M) 4	Medium (H) 5

Risk Level	Steps to Control the risk
Extreme (15-25)	Don't start work, or continue working until the risk has been reduced, regardless of the cost of the control measures. If it's not possible to reduce the risk, don't start work
High (8-12)	Delay work or restrict activities until the risk has been reduced to a more acceptable level. Considerable resources may be needed to reduce the risk. If work is in progress, take urgent and immediate action to reduce the risk. Review the risk frequently. Breach of legal requirements is always considered high risk.
Medium (4-6)	Introduce control measures to reduce the risk – including a timescale for implementing the controls Consider the cost-effectiveness of the control measures. Review the risk on a regular basis
Low (1-3)	Control measures are not necessarily needed but consider better solutions that don't involve extra costs. Monitor the situation to keep risk under control.

Hierarchy of Controls	
1.	Eliminate / avoid at source
2.	Substitute /replace – with a less hazardous activity / equipment
3.	Isolate - enclose / barricade
4.	Administrative Controls - training, standard operating procedures, policies etc
5.	Personal Protective Equipment (PPE) – must always be the last time of defence
6	Monitor – the level of risk will determine the frequency of monitoring