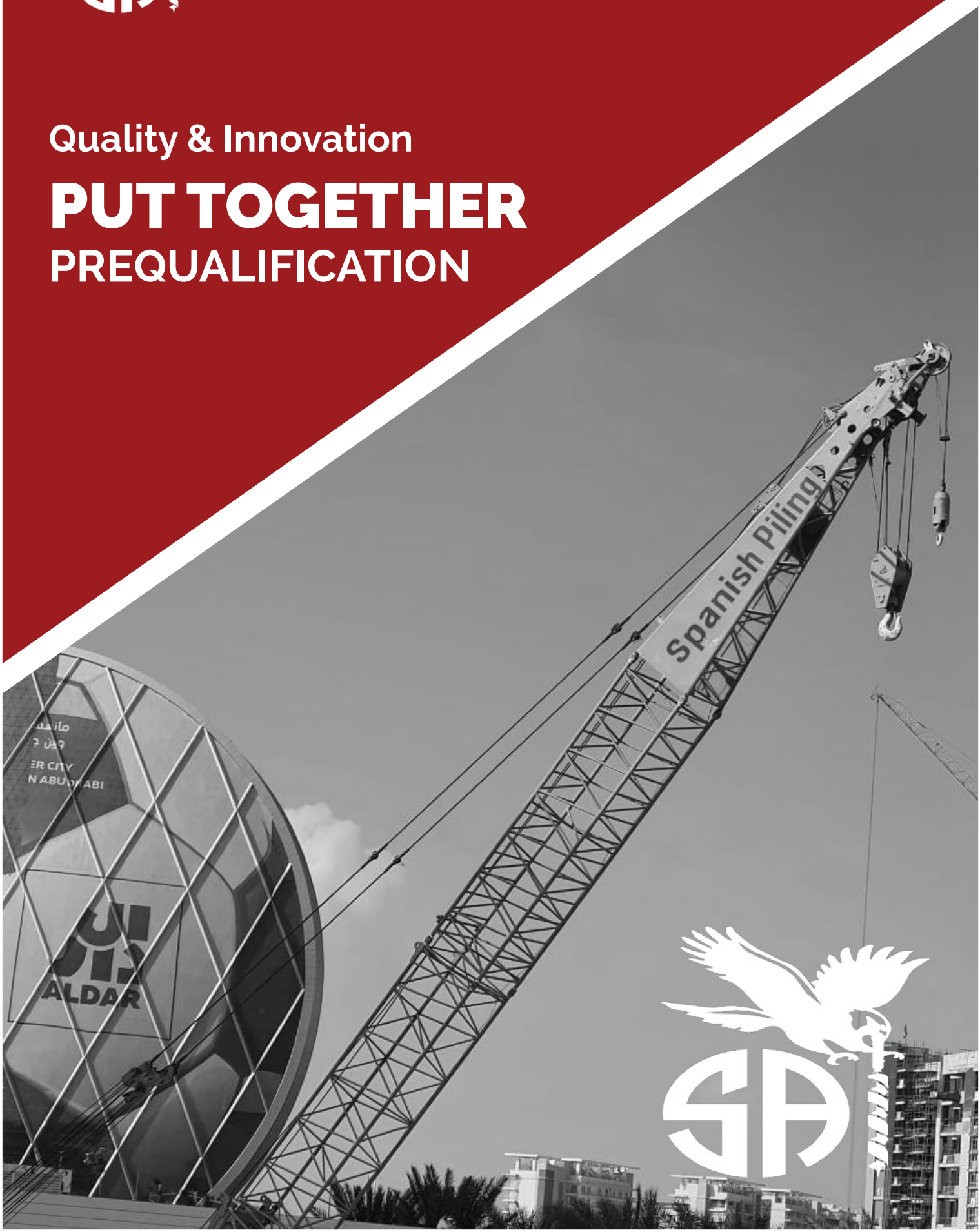
اللأسبانية المتقدمة لحفر الأساسات ذ.م.م.

Spanish Advanced For Foundation Drilling L.L.C.

Quality & Innovation

PUT TOGETHER
PREQUALIFICATION



Specialist Piling Contractor

Introduction

Spanish Advanced is one of the leading and fast-growing Specialist Sub-Contractor in the field of Piling/ Foundation technology.

The Company started and established its operations last march 2009 in Abu Dhabi United Arab of Emirates
SFD is ISO certified company for:
ISO 9001:2015, ISO 14001:2015,ISO 45001:2018

Our Strength

- Professionally qualified & experienced management team
- Strong team of skilled work force.
- One aim , One target
- Result Oriented Approach
- Friendly, but Professional Relationship

Our Objectives

To provide the client an economical and high-quality foundation design that meets the requirements and principles on various codes of practice.

Our Mission

- Consistently provide high quality, costeffective, and safe Piling works that exceeds the demands of our customers.
- To provide Foundation & Surveys works blended with Professionalism and extreme care for details.
- To strive & sustain Total Quality.
- To Sustain & enlarge the list of fully satisfied clients with Zero complaints.

Our Activities

To provide a solutions to piling foundation problems. Combining competitive pricing with our design experience and comprehensive range of piling foundation techniques, we offer design and construction of all types of pile foundations, shoring system/retaining wall(H-Beams, Secant Piles, Contiguous Piles)and Marine Piling service to our valued customers.
We pride ourselves on the efficient delivery of every stage of the project from design to completion, on time and within budget.

Our Core Values

These core values are part of every decision we make which drives our business. Our devotion to each of these core values will definitely build our customer's trust, confidence, loyalty, and continuous patronage.

Safe and environment friendly operations.

Mutually beneficial relationships with our customers and business partners.

Mutual respect and harmonious relationship among our employees.

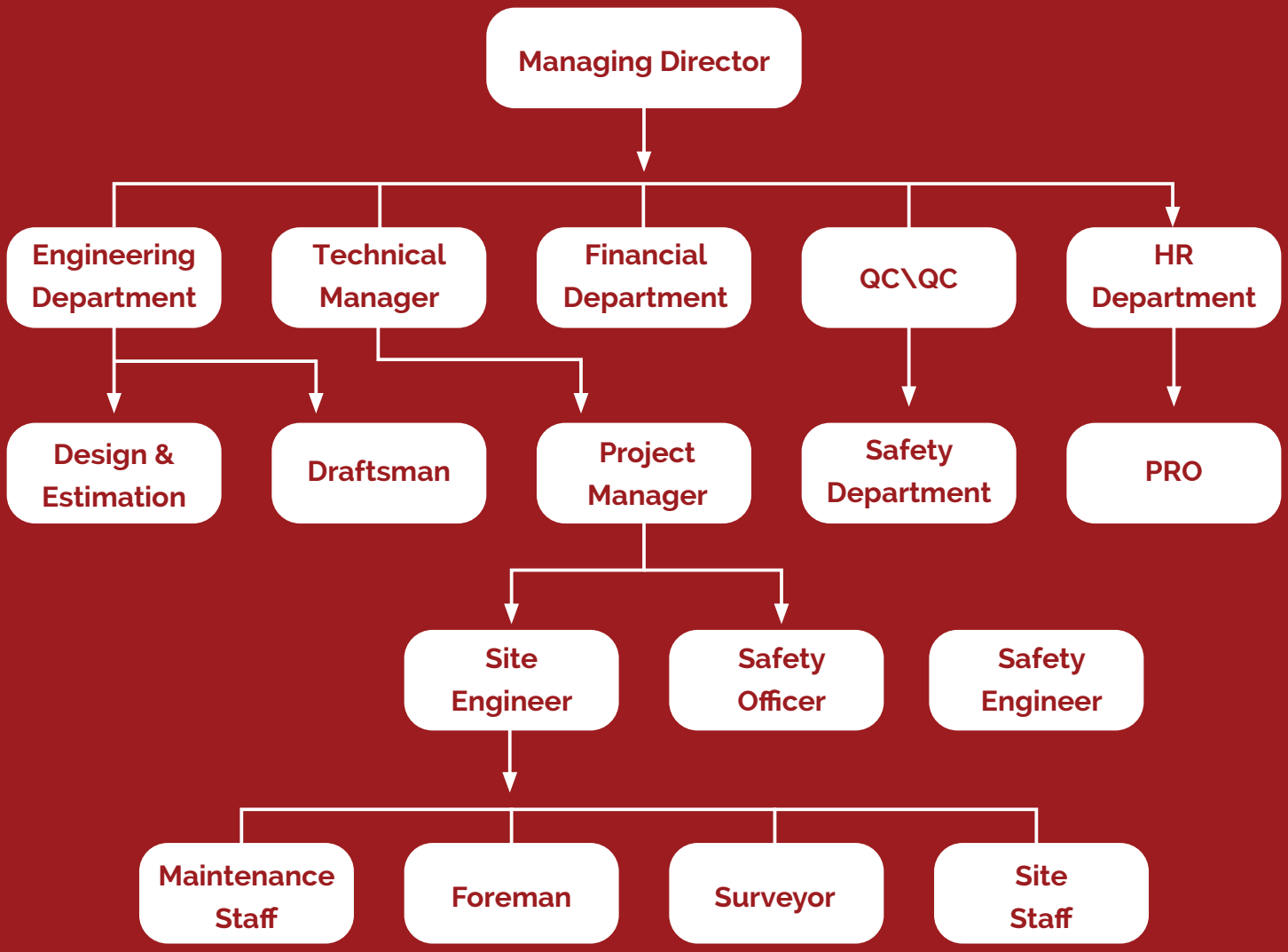
Ethical business conduct that complies with all statutory and legal requirements.

Open communication lines with our customers, employees and other Business Plan.

Perpetual improvement for all leaders and employee.

Good Corporate and Social Responsibility

Organization Chart



WE OFFER design and construction of all types of pile foundation, shoring system / retaining wall (H-Beam, secant piles, contiguous piles) and marine piling service to our valued customers.

Piling Works

- Continuous Flight Auger (CFA Method).
- Temporary Casing Method.
- Bentonite Slurry Method.

Shoring Works

- Shoring H-Beam.
- Secant Piles.
- Sheet Piles.
- Contiguous Piles.

Micropiles

- Anchor Works
- De-watering
- Excavation
- Pile Head Breakdown
- Surveying

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Our Services

Continuous Flight Auger (Cfa) Method For Piling

- Equipment And Working Platform
- Setting Out Of Piles
- Lateral Support Of Drilled Hole Side
- Pile Excavation
- Concreting
- Disposal Of Excavated Materials
- Placing Of Steel Reinforcement Cages.

Temporary Casing Method Of Piling

- Setting Out Of Pile Lay-Out
- Positioning Equipments
- Driving Temporary Casing
- Boring
- Reinforcement Cage Preparation & Installation
- Concreting
- Extracting Temporary Casing

Secant Wall Method Of Piling

- Construction of Guide Wall
- Installation of Casing
- Auger Drilling of Primary Borehole
- Concreting of Primary Borehole
- Auger Drilling of Secondary Borehole
- Installation of Steel Cage
- Concreting of Secondary Borehole
- Repetition of the Process

Rotary Method (With Bentonite) For Piling

- Surveying and Setting Out
- Installation of Temporary Casing
- Drilling with Bentonite
- Fabrication and Installation of Steel Cage
- Concreting
- Extraction of Temporary Casing

Sheet Pile Installation Method

- Sheet Pile Driving
- Placing And Driving
- Cutting Off And Splicing
- Inspection Of Driven Piling

Diaphragm Walls

- A narrow trench excavated areas
- Deep basements
- Used in congested areas
- Close to existing structures

Load Testing Procedure

- Testing Equipments
- Pile Selection
- Time Of Testing
- Application Of Test Load
- Zero To Working Load
- Working Load To Zero
- Zero To Test Load
- Test Load To Zero
- Graphs
- Failure Of Load Test

Equipment List

Description	Type	NO	Capacity	Remarks
CFA PILING RIG	SOILMEC R-415	1		
CFA PILING RIG	DALMAGE	1		
CFA & BORED PILING RIG	SOILMEC -R-825	1		
CFA & BORED PILING RIG	SOILMEC -R-825	1		
CFA & BORED PILING RIG	SANNY 300	1		
CFA & BORED PILING RIG	SANNY 410	1		

Description	Type	NO	Capacity	Remarks
CRANE	KOBELCO	1	60 TON	CRAWLER
CRANE	KOBELCO	1	55 TON	CRAWLER
CRANE	QUY-150	1	50 TON	CRAWLER
CRANE	TADANO	1	25 TON	Truck Crane
VIBROHAMMER	PTC-35	1		
VIBROHAMMER	ICE-815	1		
VIBROHAMMER	ICE-815	1		
CONCRETE PUMB	MECBO	1		
CONCRETE PUMB	CHINA	2		
CONCRETE PUMB	PUTZMEITER	1		
CONCRETE PUMB	SCHWING	2		
WELDING MACHINE	MILLER	3		

Testing Equipments

Services Offered

Continuous Flight Auger (CFA) Method for Piling:

EQUIPMENT AND WORKING PLATFORM

The piles will be constructed in each area from a working platform level, as mentioned in the Consultants Drawings. A suitable, firm and leveled area is required for the piling plant and equipments. Setting of pile positions on the ground after that is performed according

SETTING OUT OF PILES

Shop drawings for pile layout and pile details are submitted for approval. Pile centers are set at site as per grid lines and deviations. Short steel bars 12 mm diameter and 500 mm length are driven at every pile center. Pile centers are inspected and approved before commencing any drilling works.

LATERAL SUPPORT OF DRILLED HOLE SIDE

For Continuous Flight Auger System (CFA), the sides of the drilled hole are laterally supported by the auger itself with the excavated soil accumulated on its blades. As a result, neither temporary casing nor bentonite slurry is needed to retain the sides of the drilled hole until the poured concrete replaces the excavated soil.

PILE EXCAVATION

The boring operation will be carried out by means of self-erecting hydraulic drilling rig. In case of any hard materials encountered during drilling, the use of auger will be adopted to break the hard strata. The verticality of the holes will be monitored by the use of the spirit level while drilling the pile by checking the verticality of the Kelly bar from time to time. After the completion of drilling, the final depth shall be verified using a measuring scale mounted on the mast of the piling rig.

CONCRETING

The central shaft of the auger represents a full length tremie pipe assembled together down to the bottom of the pile. Ready-mix concrete of slump 175 to 200 mm. for tremie condition shall be used to ensure a smooth flow down the tremie pipes. The top of the tremie pipe is connected to a concrete pump that receives delivered ready mixed concrete. The toe of the tremie pipes should be immersed in the concrete during casting, to prevent pile necking. Concrete placing shall proceed continuously until the designed head of pile level is achieved and sufficiently above thereafter to allow for subsequent cutting back to sound concrete cut-off level. Concrete cubes must be taken daily and that is by the rate of 6 cubes per 50 cubic meter to determine the strength of the pile concrete after 7 and 28 days to make sure that the pile reached its required strength, and a record for each pile is presented having all pile information (dates and times – weather conditions – soil conditions – concrete conditions- etc.). A piling daily record form is attached.

DISPOSAL OF EXCAVATED MATERIALS

The excavated material will be temporarily stocked close to the drilling machine. It will be subsequently loaded to truck by shovel loader and transported to the disposal area by the main contractor.

PLACING OF STEEL REINFORCEMENT CAGES

The excavated material will be temporarily stocked close to the drilling machine. It will be subsequently loaded to truck by shovel loader and transported to the disposal area by the main contractor.

Temporary Casing Method of Piling:

POSITIONING EQUIPMENTS

One set of piling equipment to be used for piling shall be positioned near the pile location to be constructed. Drill rig shall be set on the firm and flat platform formed on the ground. Necessary safety precaution shall be taken in order to prevent any accident caused by Cranes or Drilling rig. Safety shall always dominate the piling activities.

DRIVING TEMPORARY CASING

A steel tubular case shall help the pile shaft be in plumb and stable at all times. The temporary casing pipe shall be driven up to consolidated soil and extracted back from the soil by a vibratory hammer. A temporary casing in the same inner diameter as that of pile shall be used; the length of casing is 16 meter.

PLACING OF STEEL REINFORCEMENT CAGES

Exact location of each pile, conforming to the drawings, shall be set out by surveyor's instrument prior to commence the boring work. Each pile shall be located from confirmed and protected reference points established by the Client or the Consultant. Necessary records shall be kept by the surveyor. The tolerance for the deviation of pile location shall be 50 mm in plan. The plumb of the piles shall not vary more than 1 in 100 as stated in the Contract Specification. The plumb (verticality) shall be assured by the operator's gauge incorporated to his machinery.

BORING

Boring will be performed by a suitable drilling rig as stated above. During the boring activity, different attachments can be used according to the requirements of the soil. Following the completion of the boring and before lowering the steel cage, the bottom of the pile shaft shall be cleaned using a cleaning bucket. The depth shall be measured after the cleaning.


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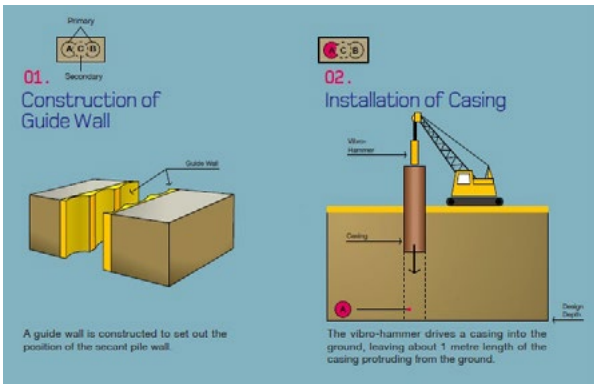
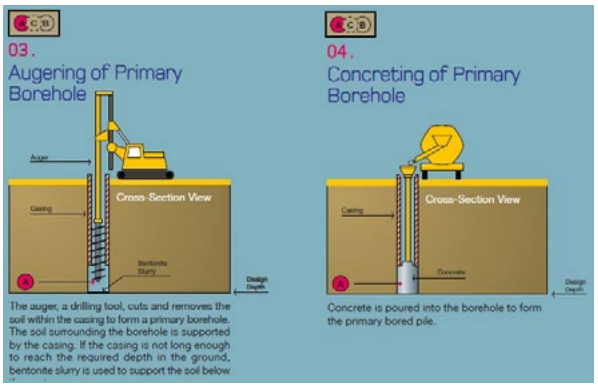
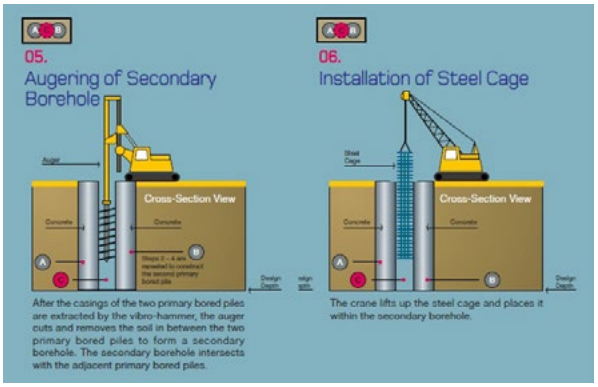
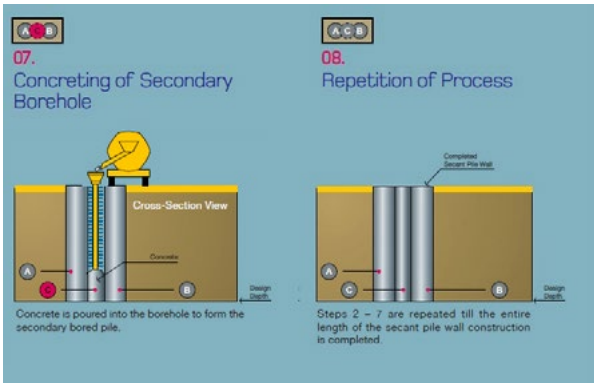
Secant Wall Method of Piling

• **Construction of Guide Wall**
- A Guide Wall is constructed to set out the position of the secant pile wall.
• **Installation of Casing**
- The Vibro-hammer drives a casing into the ground leaving about 1 meter length of the casing protruding from the ground
• **Auger drilling of Primary Borehole**
- The auger, a drilling tool, cut sand removes the soil within the casing to form a primary borehole. The soil surrounding the borehole is supported by the casing. If the casing is not long enough to reach the required depth in the ground, Bentonite Slurry is used to support the soil below the casing.
• **Concreting of Primary Borehole**
- Concrete is poured into the borehole to form the primary bored pile
• **Auger drilling of Secondary Borehole**
- After the casing, the two primary bored piles are extracted by the Vibro-hammer. The auger cuts and removes the soil in between the two preliminary bored piles to form a secondary borehole. The secondary borehole intersects with the adjacent primary bored piles.
• **Installation of Steel Cage**
- The Crane lifts the steel cage and places it within the secondary borehole.
• **Concreting of Secondary Borehole**
- Concrete is poured into the borehole to form the secondary bored pile
• **Repetition of the Process**
- Steps 02-07 are repeated till the entire length of the secant pile wall construction is completed.









Sheet Pile Installation Method:

Sheet pile is used as a Temporary & Permanent supportive wall which is used to support the soft soil collapse from higher ground to lower ground. Sheet pile is commonly used in the construction and has variety types of material for sheet pile, the driving method can be in variety. Contractors might need to determine the condition of soil the only can decide which type of sheet pile can be used

Materials:

Sheet pile in good condition with required section as per approved design should be available at site with required quantity to ensure continuity of work. Only the approved sheet pile pieces will used to be driven.

Sheet Pile Driving Equipment

Before starting to drive sheet piles a few equipments have to be prepared such as driving hammer sand service crane the driving energy for hammers shall have enough power to drive sheet pile to the required depth.

Placing and Driving:

After preparing all the sheet pile driving equipments, sheet piles can be started to place on the location. Temporary Wales, templates, or guide structures have to be carried onto ensure the sheet pilings a replaced and drive into the correct alignment. After the sheet piles are set on place, service crane with Vibro hammer will be starting to drive the sheet piles. Sheet piles have to be driven with the proper size of hammer and by approved methods to ensure no damage to the sheet piles and proper interlocking throughout their lengths.

Cutting Off and Splicing:

After driving the sheet piles into the ground, if contractor find that they need additional penetration, splicing or jointing works will be carried on. Driving works will be done again for the sheet piles until it reaches its' limit on the ground. After this, excessive of sheet pile will becuttingoff and removed from the site. All cuttingoff work must be done in a neat and work man like manner for safety purpose.

Inspection of Driven Piling:

The contractor shall inspect the interlocked joints of driven sheet piles extending above ground. If contractor find out that the sheet piles are out of interlock, then the sheet piles have to be removed and replaced with a new sheet pile.

Fabrication and Installation of Steel Cage

On the other hand, while the driving of the casing and drilling operation is being executed, steel fixers are fabricating the approved deformed bars from the required sizes (diameter) and from the authorized sources to the required length mentioned in the approved Pile Design. In case the steel reinforcement is required to be more than 12M, there shall be an overlapping equivalent to 50 times the diameter of the steel. Overlapping shall be done by means of tying with binding wires. The spacers shall be fixed at a regular interval (as mentioned previously) on the steel cage length during fabrication, with the first set of spacers being attached one (1) meter from the bottom of the cage and the last set one (1) from the top of the cage. After the steel reinforcement is complete, it shall be lowered into the pile borehole and centralized by spacers. The minimum cover of 20 cm at the toe level can also be achieved by the aid of clamp, chain and hook support placed along the cage periphery and clamped from the top of the casing.

Concreting

After the installation of the steel reinforcement as detailed above, 6"/8" tremie pipe of proper length with one elbow fitted with quick clamp system shall be placed inside the pile bore passing through the steel cages until it touches the bottom. The tremie pipe shall be raised approximately 20 cm. The elephant trunk of the concrete pump (concrete pumps are normally provided by the ready-mix supplier) will be brought to the elbow of the tremie pipe and fixed by quick clamp. Concrete shall be pumped through this tremie pipe. While concreting, the tremie pipe shall be raised by the service crane with wire ropes according to the filling of the pile taking care that the end of the tremie pipe is always inside the pile concrete and it shall be at least one (1) meter below the concrete top level. An overflow of concrete shall be allowed for to remove any laitance which may be present, or if the cut-off level is lower than the working plat form level, pour to minimum one (1)meter above cut-off level toe n sure sound concrete at cut-off level. After completion of casting the pile, the tremie pipe will be withdrawn totally and placed in another pile borehole and continue the same sequence.

Extraction of Temporary Casing

Before the setting time of the concrete, the focus shall be back to the first concreted pile and remove the clamps, chain sand hooks supporting the steel reinforcement and extract the temporary casing by twisting and moving upwards while the concrete within remains sufficiently workable to ensure that the concrete is not deformed and that the whole section of the pile is continuous. The temporary casing shall be dragged out. During this operation, we shall ensure that the top level of concrete inside the casing is always one (1) meter above pile cut off level. After removing the casing the top level of the concrete shall be that of the existing ground level. The pile is now complete and the piling machine moves to the next pile and the procedure is repeated until all of the piles had been completed.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Introduction

The purpose of this manual is to communicate the HSE policies and practices implemented in Spanish Advanced for Foundation Drilling These policies apply to all the Companies activities.
The Management and Owners of Spanish Advanced for Foundation Drilling are responsible for the Health and Safety of not only Spanish Advanced for Foundation Drilling's Employees, but also of the Employees of its business partners, whether clients, subcontractors or others, who may be affected by its activities. The Management will ensure that the company complies with the local legal and regulatory laws and international standards.
Spanish Advanced for Foundation Drilling believes in giving highest priority to Health & Safety. It firmly believes that incident / accidents can and shall be prevented, by the proactive implementation of this manual.
The management is committed to the protection of the environment at its work places and will ensure that environmental aspect and occupational hazards are identified and controlled.
To achieve these objectives, the Management has assigned HSE responsibilities to its Employees at different levels. These responsibilities are further elaborated in this manual, which is issued as a guide to the safe practices of all Company personnel and business partners to ensure that they work in a safe & healthy working environment.

Control of Amendments

This section details about the revisions done on this document. It is the Management Representative's responsibility to update these details
For minor revisions only part will be revised, the revision number will be incremented. The revision area/s will be identified by bold and italic letter and issue number will remain the same. For major revisions / number of minors once are high (Max 9 changes), the issue number will be incremented (this is at the discretion of Management Representative).
Internally this document will be issued by taking the printouts and the revisions will be communicated through formal means as described in the "control of documents & Records" procedure. Externally this will be issued by taking the print outs, revisions will be provided if agreed contractually – otherwise it will be the responsibility of the holder to collect the revisions.

References and Definitions

• **Accident** undesired event giving rise to death, ill health, injury, damage or other loss usually resulting from contact with a source of energy above the ability of the body or structure to withstand it.
• **Auditee** Person or worksite being audited
• **Competent Person** a person who by reasons of qualifications and experience, as deemed necessary by management, has the knowledge and skill necessary to perform the duties with respect to which the expression is used.
• **Competent Person** a person who by reasons of qualifications and experience, as deemed necessary by management, has the knowledge and skill necessary to perform the duties with respect to which the expression is used.
• **External Audit** any audit of the Companies activities conducted by any external Organization.
• **Emergency Response Procedure** a procedure to outline the activities required of Employees in the case of an emergency occurring in the work place.
• **As Low as Reasonably Practicable (ALARP)** reducing hazards to where they are tolerable i.e. Where they become impracticable or the cost is grossly disproportionate to the improvement gained
• **EA** environmental Assessment.
• **Confined Space** any work place, which has restricted or limited access, movement and ventilation whether underground or aboveground.
• **First Aid Treatment** initial one-time treatment and subsequent observation for minor injuries usually considered first aid treatment; Examples include single application of antiseptics, first degree burns, bandage(s), foreign bodies that have not penetrated into the eye, non prescription medication and single doses of prescription medication, diagnosis and observation of an injury by medical personnel, precautionary measures taken until competent medical diagnosis is completed.
• **Tool Box Talk** activity related presentation or discussion used to facilitate the identification and communication to work site employees HSE issues.

Hazard
The inherent property or ability of something to cause harm; the potential to interrupt or interfere with a process or person, which is or may be casually related to an incident by itself or with other variables.

Hazard Register
A document or process detailing the hazard associated with all aspects of operating a facility.

HSE
Health, Safety & Environment

HSE Plan
A document specifically prepared for a particular project to manage all aspects of HSE for that project.

Internal Audit
Any audit conducted by Spanish Advanced for Foundation Drilling personnel on any aspect of the Companies operations.

Hazard Identification
Process of recognizing that a hazard exits and defining its characteristics.

SWL
Safe Working Load

Hazard Substance
A substance, which has the potential to cause adverse effect to health or the environment.

LTI
Lost Time Incident

HSE Induction Training
A training cause prepared and presented to induct new as well as existing Employees, before commencement a project.

Job Safety Analysis (JSA)
A hazard identification tool comprising a document containing a list of basic job steps, hazards identified with the job steps and the mitigating means to safeguard the hazard or reduce them to ALARP.

Medical Treatment

All medical treatment that is not deemed as first aid treatment. This may be associated with an employee being assigned restrictive duties or losing time from work as a result of the injury or illness. Examples include second applications of antiseptics for infections, second- or third-degree burns, sutures and butterfly bandages or sterile strips used in lieu of sutures, a physician's removal of a foreign body that has penetrated the eye, more than one dose of prescription medications, fractures or broken bones, loss of consciousness (regardless of follow-up treatment).

Incident

An undesired event that gave rise to an accident or had the potential to lead to an accident or downgrade the efficiency of business operations.

Near-miss

An incident which had the potential to cause injury or loss of property

OR

An incident which did not result in injury or loss of property, but had the potential to do so.

Non-conformance Report (NCR)

A report detailing a non-conformance observed during an audit and the appropriate action to be put in place to correct the non-conformance.

PPE

Personal Protective Equipment

Risk

The combination of the likelihood and consequence (s) of a specified hazardous event occurring.

Safety

Freedom from unacceptable risk or harm (or a judgment as to the acceptability and tolerability of risk).

MSDS

Material Safety Data Sheet is a document, which contains details of a material such as properties, hazards, handling, disposal methods etc.

Non-conformance

Any deviation from work standards, practices procedures, regulations, HSE management systems performance that could lead directly or indirectly to injury, illness, property damage to the workplace environment, or combination of these.

Non-Routine Job

A job that is performed one or less times per month or a job whereby the job hazards significantly change with its location.

RWC

Restricted Work Case.

Risk Assessment

An assessment or analysis of hazard that will result in loss, with definable consequences, and actions to eliminate or mitigate the consequences.

Safety Award Scheme

An incentive to encourage and motivate the Employees in implementation of HSE policies.

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QHSE Policy

It is the Spanish Advanced for Foundation Drilling
is to establish, implement and maintain an Integrated Management System (IMS) covering Quality, Health, & Safety and Environment Management Systems as per ISO 9001:2008, OHSAS 18001:2007 & ISO 14001:2004 for the Design, Manufacture /Assembly & Testing of MV Substation, LV Switchgear & Control gears to the satisfaction of customers every time the first time and at the right time.

Spanish Advanced for Foundation Drilling will strive to:

• Provide products and services to the highest possible standard of Quality, Reliability & Conformance;
• Achieve Customer satisfaction through understanding the Customer requirements and exceeding their expectations by employee involvement and team work;
• Comply to all applicable legal, regulatory and other requirements;
• Reduce wastage and prevent pollution of all types, generated by activities within the organization;
• Measure and monitor process by settings QHSE objectives and targets to continuously improve its performance;
• Enhance employee health and well being
• Instilling and promoting safety consciousness amongst all employees and sub-contractors to prevent ill health, injury and incidents,
• Control all significant risk/Impact identified by adapting appropriate measure and by communicating to relevant personnel
• Communicate the policy to all employees, customers, suppliers, interested parties, and sub contracted staff;
• Provide appropriate resources for QHSE and train employees to deliver quality service and adhere to HSE requirements
• Review the policy periodically to ensure that it remains appropriate to the organization and its objectives.

Spanish Advanced for Foundation Drilling
The above commitment shall be achieved by the effective implementation of the Integrated Management System and setup of appropriate Objectives and targets. General Manager

HSE Responsibilities

The following positions have primary roles within Spanish Advanced for Foundation Drilling to facilitate effective EHS management and their key responsibilities are listed below in addition to the Job Description

General Manager (GM)

Shall instruct the EHSMS in charge to monitor the effectiveness of the communication of Spanish Advanced for Foundation Drilling at all levels throughout the company.

Shall agree on realistic targets for the review of the systems that are in place for meeting the EHS training needs of employees to maintain the established competency levels.

Shall provide leadership and set a personal example to promote a climate for the growth of a positive EHS conscious culture.

Departmental Managers,

• Provide leadership and set a personal example to promote a climate of growth of a positive EHS conscious culture within Spanish Advanced for Foundation Drilling by organizing awareness sessions for employees.

• Provide or highlight the requirement for adequate resources and funds to support effective policy and procedure implementation.

• Ensure compliance with Spanish Advanced for Foundation Drilling EHSMS procedures and systems within their area of responsibility.

• Communicate and promote the use of Spanish Advanced for Foundation Drilling policy and procedures to all employees and supply chain partners under his/her management.

• Recommend and monitor EHSMS objectives and improvement targets for their department and provide periodic feedback on progress during the management review.

• Assign responsibilities within their teams for the day-to-day management and monitoring of EHS issues including the use of work-related risk assessments.

• Ensure that the EHS training needs of employees are identified and reviewed annually and that these training needs are communicated to the EHSMS In charge for review and action.

EHSMS In charge

Spanish Advanced for Foundation Drilling Piling has appointed an EHSMS In charge. As the senior management representative, this manager has the following responsibility and authority:

- Promote awareness of our customer requirements throughout the company.
- Act as a liaison with external parties such as Adm Municipality, customers or auditors on matters relating to the EHSMS.
- Shall assign responsibilities throughout Spanish Advanced for Foundation Drilling to affect the proactive operation of the EHS control measures and systems
- Ensure that the EHSMS remains valid and complete, and where necessary updated to reflect changes in legislation or best practice concerning his/her department.
- Ensure that processes needed for the EHSMS are established and implemented.
- Report to the Spanish Advanced for Foundation Drilling Piling GM on the performance of the EHSMS, and note any improvements required.
- Shall agree realistic objectives for the EHS related to improvement within Spanish Advanced for Foundation Drilling Piling.
- Shall review the results of consultation with employees and give proper consideration to the resulting proposal from employees.
- Promote EHS initiatives and objectives to internal and external management and their subordinates so that all aspects of our EHSMS efforts are coordinated and effectively integrated throughout Spanish Advanced for Foundation Drilling activities

The EHSMS Technical Committee/Core Functional Team

- Agree on and lead the communication of policy Spanish Advanced for Foundation Drilling, initiatives for the internal EHSMS communications at all levels and across all areas of activities.
- Provide or highlight the requirement for adequate resources and funds to support effective policy and procedure implementation.
- Consider all recommendations from the EHSMS In Charge and employees, regarding changes to policy and procedures that result from legislation change or best practice and that will have an operational impact on Spanish Advanced for Foundation Drilling.
- Provide leadership and set an example to promote a climate for the growth of a positive EHS ethos so that it becomes part of 'the way we do things.
- Be responsible for the high-level development, maintenance and integration of EHS, HR, procurement marketing (and other relevant activities) policies into EHSMS values and objectives into all areas of Spanish Advanced for Foundation Drilling activities.

• Consist of senior nominated individuals from Spanish Advanced for Foundation Drilling Departments, chaired by the EHS In-charge

• Keep updated on EHS initiatives and best practice, ensuring our approach to the internal EHSMS remains leading edge.

• Meet at least quarterly to review Spanish Advanced for Foundation Drilling performance and activities and agree changes for the GM's consideration as required.

All Employees and Supply Chain Partners

The success of Spanish Advanced for Foundation Drilling depends upon the participation of the employees. As such the following responsibilities apply to them:

• To take reasonable care for the health and safety of themselves and of persons who may be affected by their acts or omissions while at work.

• To cooperate with the management to enable them to carry out their duties or any related requirements that may be imposed.

• To take reasonable care for the environment whilst at work.

• To not intentionally or recklessly interfere with or misuse any item provided in the interest of health, safety or environmental protection.

In addition, the employees shall:

• Report all incidents, whether injury is sustained or not, and report all unsafe practices or potential hazards. Report anything that might have an impact on the environment.

• Attend any training designed to further satisfy the needs of EHS.

• Only carry out work for which they are specifically accredited, and work within the constraints of agreed job risk assessments.

• Adhere to any procedures or manufacturers recommendations that are provided regarding hazardous substances or machinery used at work to avoid risk to safety or the environment.

• Familiarize themselves with the local 'EHS' rules and procedures pertaining to working on any other premises or constructions sites. Employees should operate to Spanish Advanced for Foundation Drilling standards as a minimum or to premises standards if higher or specified.

HSE Training

The company has set out a training program for its personnel to provide them with the skills and knowledge required to perform their job efficiently and safely. All new employees shall attend an HSE induction training course prior to starting work.
Training will be conducted either by using internal resources or by local external training organizations, which are approved.
The following courses are carried out within the company, depending on the requirements of individuals and job functions.

- HSE Induction Program (given to all new employees)
- Personal Protective Equipment
- Scaffolding
- Basic Fire Fighting Skills
- Excavation
- Working in H2S Areas
- Hazard Awareness
- Emergency Response Procedures
- Dangers of Hot Weather Exposure (For Site)
- Working at Height
- Manual handling
- Working in Hydrocarbon Areas
- Desert Driving

Training Programs

In order to ensure that HSE training is carried out correctly, each project shall develop a Training Matrix for employees, including subcontractors. This is to be developed taking into consideration the hazards and risks involved within the project works and any client requirements.

Toolbox talks

Toolbox talks shall be carried out on a regular basis within all work locations. The schedule to be decided will be based on the hazards involved with activities. The maximum time duration between talks shall be no longer than seven (7) working days.

Training Records

All training courses attended by individuals, internal or external, shall be recorded on their own training record sheet. This shall be maintained by the HSE department of the company at all times

HSE Promotion

The promotion of HSE awareness within the Companies day to day operations is seen as a critical part of the management system. Therefore, it shall be regarded as a prime element of all project HSE plans and encouraged by senior management. The types of promotion that may be carried out include:

- Hazard Awareness Campaigns
- Poster Campaigns
- Safety Award Schemes
- Tool Box Talks
- HSE Competitions
- Reporting incident / Near Misses and Incentive schemes.

Details of any promotional activities shall be displayed on company notice boards to ensure that all personnel are kept informed.

HSE Functions

The HSE function in the Company is the responsibility of the GM/MR & Safety in charge. They allocate safety supervisors to individual projects or responsible for identified projects depending on the size and degrees of risk involved within each project.

Accident / Incident Reporting and Investigation

The goal of an accident investigation is to not find fault, but to identify the causes of an accident or incident and to take suitable corrective action to improve the Companies working practices and procedures to prevent a recurrence of the unsafe action or condition that caused the accident.

Incident /Accident Reporting

Company policy requires employees to report all incident, injuries / accidents, and near misses. By studying mishaps, one may identify unsafe conditions and practices and correct them before catastrophe strikes.

If an on-the-job accident causes an injury, it should be reported it to a Supervisor as soon as possible after caring for the injured party. Prompt reporting will help ensure appropriate medical assistance and control measures.

HSE Training

Following an incident, accident/ injury, or near miss accident, management should conduct an investigation. A written report is essential for the following reasons:

• HSE Induction Program (given to all new employees)
• Documentation aids in identifying and reversing trends.
• Helps in the defense of frivolous lawsuits.
• Assists in the development of a more effective safety program.
• Provides important information in claims and

The reporting and investigation of accidents / incidents is a part of the HSE management system to identify hazardous processes and to help reduce the risk of any occurrence. All accident / incident investigations shall be followed up as per the company procedure.

Statistics

Statistics shall be developed on a monthly basis at project level and company level. Statistics shall include at least the following:

- Accident Frequency Rates
- No of Accidents / Incidents/ Near Misses
- Day / Time of incidents
- Accident Severity Rates
- Types of Accidents/injuries Classifications
- Waste Generation

The statistical results are to be discussed in HSE meetings and displayed on company notice boards with recommendations and management memo.

First Aid

First aid is the immediate help provided at site to an injured or seriously ill person until professional medical help can be obtained.

It is the responsibility of the company to ensure that first aid is available to their employees on all job sites

Provisions shall be made prior to start-up of the project for prompt attention in case of medical emergencies, including the appointment of site First Aiders, if needed.

Provision of First Aid Facilities

First aid facilities will be provided on all sites for the employees including subcontractors. An adequate number of First-aiders shall be ensured by the management of each project, as required.

Environmental Protection

Spanish Advanced for Foundation Drilling is committed to environmental protection. It is therefore essential to carry out work taking into consideration the protection of the environment; the following activities are incorporated within environmental aspects of work:

Housekeeping

Housekeeping remains an essential aspect of environmental control in the day-to-day operations. All work sites shall be daily cleared for all kinds of waste, after a job is completed and all waste generated shall be collected, kept at a designated place and disposed through the waste facilities as per procedures in place. All personnel shall be educated on the importance of housekeeping and advised on the precautions to follow.

Waste Management

To prevent pollution, waste must be segregated and each type disposed of in the correct manner at designated waste facilities as per Spanish Advanced for Foundation Drilling's Procedure of operation. The waste generate are of non hazards type and normal waste are disposed off in compliance to the EAD requirements,

Hazardous Substances

Chemicals shall be stored, handled, used and disposed of as per the procedures on Control of hazardous substances and waste disposal.
All supervisors shall brief their staff on those environmental issues which need to be taken into account whilst carrying out their duties. They also should carry out periodic inspections during and at the completion of the work to cheek that the job has been carried out in an environmentally friendly manner

House Keeping

General

Good housekeeping is an important aspect in any incident /accident prevention program. It should be of primary concern to all supervisors. Good housekeeping shall be planned at the beginning of a job and shall be carefully supervised and followed to the end of contract. All concerned supervisors shall establish a procedure as per the guidelines given below:

- **Plan ahead:**

A material storage, which has been planned, is more orderly than one which has simply been allowed to develop.

- **Assign responsibilities:**

Depending on the size of the job, a crew shall be specifically detailed to clean up. In any case, housekeeping shall not be haphazard; duties shall be assigned to one or more responsible person.

- **Implement the program:**

Housekeeping shall be part of the daily routine, with clean up being a continuous process.

- **Storage areas:**

All materials shall be maintained in neat stockpiles for ease of access. Keep aisles and walk-ways clear of loose materials and tools.

- **Work areas:**

Clean up loose materials, waste etc., Immediately. This is especially important in aisles and in the near vicinity of ladders, ramps, stairs and machinery.

- **Areas used by personnel:**

Empty bottles, containers and papers shall not be allowed to accumulate on the job site. Trash disposal cans shall be provided.

- **Oil and grease:**

Spills of oil, grease or other liquid shall be cleaned immediately.

- **Disposal of waste:**

An effective means of preventing litter is the provision of suitable receptacles for waste, scrap, etc if any. Combustible waste such as oily rags, paper, etc., shall be stored in a safe place such as a covered metal container and disposed of regularly.

Periodically clean up the work site and remove all unwanted equipment / materials. Refer to company Procedure for housekeeping.

Fire

Introduction

Preventing and controlling the spread of fire are important features in the prevention of accidents, property damage and loss.
The main constituents of fire are fuel, oxygen and heat. These are commonly known as the triangle of fire.

Classification of Fire

There are four main classifications of fire and means of extinction. These are:
- Class 'A' Fires, which involve solid materials (predominately of an organic kind) forming glowing embers. Examples are wood, paper and coal. The extinguishing mode is by cooling and is achieved by the use of water.
- Class 'B' Fires, which involve flammable liquids, gases and greases. These fires can be extinguished by dry chemical powder, C02, foam and vaporizing liquids.
- Class 'C' Fires, which involve electricity supply or live electrical equipment where non conducting extinguishing medium such as C02, dry chemical powder or vaporizing liquids are used to extinguish the fire. **(WATER SHALL NOT BE USED)**
- Class 'D' Fires, which involves metals such as sodium, Magnesium, Titanium, Lithium, Potassium and zirconium. Special dry powder extinguishers are required to fight these.
(NO OTHER EXTINGUISHER TYPE SHOULD BE USED)

Fire Protections

There are three strategies for protecting against and dealing with fire:
Design:
Providing protection through insulation, integrity and stability, permitting people to escape by compartmentation, smoke control and unobstructed means of escape. – Emergency Exits
Detectors and Alarms /Sprinklers:
Activated by sensing heat, flame, smoke or flammable gas. For example, heat detectors, flame detectors and smoke detectors

Fire Fighting Installations:
With portable fire extinguishers or fixed firefighting equipment, sprinkler and deluge systems etc. (Manually or automatically operated).
- The following outlines the action to be taken in case of a fire. It should be noted that fighting fires could be dangerous to untrained personnel, so only fight fires if you have been trained to do so.

General Rules

On discovering a fire:
• Raise the alarm, do not attempt to extinguish if it is dangerous to do so.
• Ensure that your escape route remains clear.
• If gas cylinders or flammable liquids are involved, retreat from the scene
• When you withdraw, close windows and doors behind you, if possible.
• If pumped gas or flammable liquids are involved, attempt to isolate the source.
When you hear a fire alarm:
• Leave by the nearest exit and go to emergency assembly point.
• If you have visitors, take them with you.
• Do not re-enter the building before the emergency services give permission.
• For further guidance on Fire refer to project specific emergency procedures.

Portable Fire Extinguishers

The following types of fire extinguisher are available to fight fires and each project shall plan the correct requirements for the activities being undertaking:
Type: Water; color = Signal Red
Effective for paper, wood & textile only. Generally available in 9 liters & 12 liters capacity.

Type: Dray powder; color = Blue
Excellent for flammable liquids. Being a non-conductor of electricity can be used on live electrical apparatus. Risk of re-ignition of hot surfaces since it has mm cooling effect. Generally available in 2kg, 6kg, 9kg & 12kg capacity.

Type: Carbon dioxide; Color = Black
Smothers by partial exclusion of Oxygen and beating out flames by the velocity of discharge thus effecting extinction. As it is non-conductive, it is particularly effective against fires in electrical plant and equipment as well as fires of class 'B' & class 'C' category. It should not be used in confined spaces where there is a danger that fumes may be inhaled. It provides rapid knock - down of industrial fires involving dangerous chemicals and gases. Generally available in the range of 1kg to 6kg capacity.
Type: Foam; Color = Cream
Excellent for paper, wood, textiles and flammable liquids. Foam blanket gives protection against re-ignition and cools liquid fuel. Being a conductor of electricity, it should not be used on live electrical apparatus. Generally available in 9 liters, 12 liters capacity.

Use, Inspection, Maintenance Test & Discharging of Fire Extinguishers

Every employee should be familiar with the location, the operating procedure and the use of the different fire extinguishers installed at his place of work. These should be located within close reach. Portable Fire Extinguishers are to be inspected, test discharged and serviced at least twice year by authorized competent persons as per manufacturer's fire extinguisher maintenance procedure. If an extinguisher is used, it must be refilled immediately.

Personal Protective Equipment

Every employee should be familiar with the location, the operating procedure and the use of the different fire extinguishers installed at his place of work. These should be located within close reach. Portable Fire Extinguishers are to be inspected, test discharged and serviced at least twice year by authorized competent persons as per manufacturer's fire extinguisher maintenance procedure. If an extinguisher is used, it must be refilled immediately.

Eye Protection

All employees shall wear eye protection while carrying out the following operations:
Cutting, chipping, drilling, cleaning, buffing, grinding, polishing, shaping of surfacing masonry, brick hardened concrete, plaster or similar substances with hand tools or mechanical equipment. This covers demolition work where the listed activities & materials are the part of the operation.

Where chemicals, sand or shot blast are used in exterior cleaning operations.
Welding or cutting operations involving the use of gas flames or electric arc. For all welding operations, welders shall be provided with suitable helmets, hoods and shields.
Metal chipping, cleaning, conditioning or machining where there is a danger of flying particles.
Using cutting / grinding wheels.

Head Protection

All employees shall wear a hardhat whenever they carry out operations during which they are exposed to head injury by being struck by / struck against, flying / falling / other objects.

Respiratory Equipment

All employees shall wear respiratory protection during all operation where dust, fumes, toxic gases, mist, vapor are likely to be present.

Ear Protection

All employees likely to be exposed to excessive noise as part of their daily routine or whose occupation is classed as inherently noisy, will be provided with and use approved appropriate hearing protection.

Hand Protection

Gloves of proper material shall be worn while handling sharp metal, metal plates, rods, bricks, blocks, etc., and while handling cement and other chemical substances.

Foot Protection

Appropriate foot protection in the form of safety shoes, gumboots and chemical resistant shoes shall be used depending on the type of activity being carried out.
Protective toe-capped footwear shall be worn at all times during work.

Body Protection

Leather aprons and sleeves shall be worn while carrying out welding / gas cutting operations. Company approved overalls with company logo shall be worn by all site personnel. Rubber / PVC aprons will be worn while handling acid or other corrosive chemicals.

Life Lines & Safety Harness

All employees shall wear and use life lines and safety harness whilst working above a height of 1.5 m.

Maintenance and inspection of Equipment

All Personal Protective Equipment shall be maintained and inspected as per statutory and manufacturers recommendations. Any defects are to be reported to line management for repair or replacement.

Hand Tools

Only tools are in good condition to be used. Broken or damaged tools shall not be used, such as:

- Mushroom headed chisels, punches.
- Hammers with broken / loose handles or chipped heads
- Spanners with splayed jaws
- Screw drivers and files without handles
- Pickaxes and shovels with handles having splinters, splits or cracks

Tools should be kept in boxes or racks when not in use. Workbenches should be kept clear of surplus tools. Tools should be stowed away safely, when working at height. Keep striking tools heads tightly wedged in their handle. Pipe extensions shall not be applied to spanners for increasing leverage. Always use the correct tool for the job.

Pneumatic Tools

Compressed air used incorrectly can be highly dangerous. All hoses and couplings should be inspected before use and any observed defects should be rectified. Hoses and connections must be properly secured.

Ensure that you have the correct operating pressure. All tools should be held firmly to prevent them from spinning and jumping and firm pressure should be maintained when stopping and starting. It is essential that the operator adopts a secure foothold, a well-balanced posture and use both hands when using concrete and rock breakers. All operators shall wear steel toe capped safety boots, as well as appropriate eye and ear protection.

Electrically Operated Tools

All electrically operated tools shall be used on reduced voltage as far as possible, to avoid the risk of shock. A check should be made to ensure that the supply voltage is within the operating range as marked on the tool plate. All electrical hand tools shall be earthed or double insulated. Electrical tools shall be disconnected, when changing attachments or making adjustments or repairing. Safety attachments shall not be removed as they are incorporated to provide maximum safety.

All electric tools shall be carefully inspected before use for signs of faults in wiring, switches, guard's etc. Maintenance shall be carried out on a regular basis by a competent electrician.

Grinding Machines

Grinding wheels must be marked with their maximum permitted speed, which must never be exceeded. All grinders shall be provided with fixed guards, which are capable of containing grinding wheels in case of rupture.

Drilling Machines

All bench mounted drilling machines shall be firmly secured to a strong and stable platform. An adjustable fixed guard must be designed to render the chuck and the length of the drill inaccessible to the operator. All material to be drilled should be firmly secured so that it cannot spin as the drill begins to bite.

All drills should be kept sharp and a punch mark should always be made as a starter. Portable drills, once switched off, should be held until they have ceased rotation, before being set down.

Woodworking Machines and Tools

The following general precautions shall be observed while using wood working machines:

• Knives, saws and cutters should be properly sharpened and correctly set. Circular saws should be checked for cracks, particularly near the gullet. Defective items should be removed from service.

• Before a machine is started a check should be made to see that cutters, saws or knives are of the correct type and are securely fixed and those guards are properly adjusted.

• The area around the machine should be clear of waste material and there should be space to stack work safely before and after machining.

• The floor must be clean and free from oil or grease, which might cause the operator to slip or lose his footing.
• Multi-speed machines must be started at the lowest speed.
• Guards should be set to give the minimum clearance necessary for the material being worked. Guards must always be in position.
• The operator must not wear loose clothing and must wear goggles, masks and ear protection as necessary.
• Push sticks should be available and used where necessary. Off-cuts, chips and
• Sawdust should not be removed from the machine table with hands when the machine is in motion.
• Materials should not be forced through machine.
• If any fault develops, the machine must be switched off immediately and promptly reported to the supervisor.

Manual Lifting and handling

Incorrect manual lifting methods may result in personal injury to individuals. The most common injuries relate to bad posture or incorrect handling and lifting.
The following instructions / guidelines should be observed when lifting and handling material manually:

• Ensure that there are no hazards such as slippery or uneven surfaces, which are likely to cause a fall.
• Examine the size, shape and weight of the object to be lifted. If it appears too awkward, get assistance or use mechanical means.
• Where more than one person is involved in a lifting operation, the lifting rules should still be applied and all persons involved in lifting must work together as a team.

• One foot should be placed alongside the object to be lifted; the other should be behind. The rear foot should be comfortably positioned for the upward thrust of the lifting action.
• Feet should be comfortably apart at approximately shoulder width.
• Hands and fingers should be extended around the object to be lifted, using the full palm. Palm and thumbs should be used for a positive all-round grip as fingers alone may not be enough.
• The back should be kept straight. A "Straight" back does not mean a 'vertical" hack. A straight back keeps the spine; back and body organs correctly aligned thus reducing the compression of' the spine. The chin should he "tucked in" so that the neck and head are in a straight line.
• The load should be drawn chose to the body with arms and elbows tucked into the sides. This ensures that the weight is fully supported on the axis of the spine.
• Personnel should ensure that they follow the above principles at all times and if they are unsure, consult the HSE department for advice.

Lifting Equipment & Testing

This section is applicable to:
• Lifting Equipment and Appliances: Such as Cranes, Grabs, Winches, Pulley Blocks or Gin Wheels for raising or lowering of materials
• Lifting Gear Such as chain slings, rope slings, belt sling rings, hooks, clamps, shackles, swivels or eye bolts.
• All lifting equipment, appliances and gear shall be tested by an authority approved by the government and client, and a test certificate obtained before it is first put into use.
• All lifting equipments shall be reviewed regularly to ensure its current validity status and required to be get it tested before expiry of certificates.
• No lifting equipment shall be used that does not have a valid test certificate.
• All lifting equipments shall be visually inspected for any defects before use.

• The main objective of regular inspection and testing of lifting equipment is to control and minimize the likelihood of an accident due to catastrophic failure as a result of undetected damage or wear.
• Only competent persons shall be permitted to operate lifting equipment. They are expected to possess a valid training certificate along with a valid permit to work, which is to be obtained before operating the lifting equipment.
• All cranes shall be correctly supported and all outriggers and other lifting aids deployed before any lifting commences. Cranes shall be positioned so that they lift vertically and shall not be used to pull loads sideways.
• All cranes shall be fitted with an audible warning device designed to sound when the crane is overloaded.
• Mobile lifting equipment shall not be operated where the top of the equipment can reach within 3m of overhead power lines.

Color Coding

• Lifting appliances shall be marked with the last date of inspection and the next due date for inspection.
• Color code bands shall be painted on every piece of lifting gear. The color shall indicate to the User that an examination has been performed within the prescribed period.
• Any lifting gear that does not have a visible color band painted on, (or where the color is out-of-date) will not be used but he returned to the site store for inspection and color coding by a competent person

Loading and Unloading with Mobile Crane

The following safety precautions are to he followed when handling loads:
• Before attempting to lift a load, ensure that the load is within the capacity of the crane and lifting gear.
• Ensure that the crane is positioned properly and that out-riggers are fully extended and locked in position. The jacks should be raised sufficiently to take the load off the wheels and should rest on adequate packing

• Ensure that the hoist line is plumbed before lifting a load ie. The hook is directly over the load, the hoist rope is directly over the center of gravity of the load and the hoist line is vertical.
• Ensure long objects are slung in such a way that the included angle is close to 90 degrees but not more than 1 20 degrees and that slings are secured on loads in such a way that the weight is equally shared by each sling.
• Avoid causing impact loading by sudden jerking when lifting and lowering. Raise the hoist rope gradually until the slack is eliminated arid any entanglement is removed.
• Careful control shall be exercised to prevent pendulum swinging of the load tags lines shall be used to prevent uncontrolled swinging of long objects.
• Ensure that workers involved in slinging operations move to a safe position before lifting operation commence.
• Banks's man shall be positioned for giving signals to crane operators if necessary Supervisors shall ensure that crane operators and banks man are familiar with the correct signals.
• Ensure that guardrails are provided or that ropes are tied along the sides of the trailers to support workmen in case of a slip or fall, whilst loading or unloading long objects like pipes.
• Refer to the procedure for material handling for further guidance.

Road Safety

Spanish Advanced for Foundation Drilling is committed to managing its road transport operations in a safe, efficient and responsible manner. All vehicles shall be driven in a safe manner at all times. All drivers shall ensure that they observe the rules of the highway, on or off of public roads. The following company rules apply:
• All Vehicles shall meet current department/Road traffic requirements and also any specific client specifications.
• All drivers shall possess a valid UAE driving / operator license for the type of vehicle/ plant / equipment being driven.
• All vehicles shall be of suitable design for the work required.
• All vehicles shall be fitted with seat belts.
• All the vehicles shall be inspected and maintained as per the manufacturer's recommendations.

• The number of persons carried in passenger compartments of vehicles shall not exceed the maximum number stated on the vehicle registration document.
• Passengers shall only be carried in passenger compartments of vehicles.
• Drivers shall remove ignition keys from vehicles when not in use.
• Signposted legal speed limits must not be exceeded.
• Speed limits must be judged according to the road conditions at the time of traveling and adjusted accordingly.
• Picking up persons not directly connected with the Company's work is prohibited.
• Night driving in the desert is prohibited, apart from in exceptional circumstances.
• All vehicles shall be checked by the drivers before starting journeys.
• All drivers shall ensure that passengers wear seat belts.
• All drivers shall follow driving in dust rules where they do not try to overtake a vehicle if they cannot see in front of it due to dust cloud.
• Stop and rest after four hours of continuous driving and don't drive more than 10 hours a day.

Ladders

Incorrect use of ladders in industry has resulted in many serious accidents taking place. It is the company's policy to ensure the safe use of ladders at all times. Therefore, the following safety rules are to be followed:

• Ladders shall be inspected for damage and deterioration prior to use. Close visual inspection is recommended.
• Ladders found to be defective shall be repaired or if not possible to repair, be destroyed.
• Use ladders of proper length and position them at a correct slope of 1in 4 or at a 75-degree angle. The length should extend at least one meter above the landing point.
• Always face the ladder, whilst ascending or descending.
• Do not carry tools or anything in hands whilst ascending or descending ladders.
• All ladders, when not in use shall be stored horizontally with supports at both ends and at intermediate points. Protect ladders from unnecessary weathering.
• Clean ladders frequently of grease, oil, etc. if applicable
• Ladders shall not be painted or varnished.
• Application of sudden loads on ladders is to be avoided, in order to avoid damage.
• Do not use ladders as working platforms or walkways.

• Ladders should be clearly identifiable and recorded on a ladder register.
• Do not use a metal ladder close to live electrical cables.

Winching Equipment

General

The safe operation of heavy equipment involves two important areas, the selection and training of operators and the maintenance of the equipment. Only able-bodied, trained and qualified men shall be permitted to operate this type of equipment.
Training shall include a thorough review of the hazards, safety procedures and a good working knowledge of the machines themselves. The foreman shall ensure that proper supervision is exercised over an operator until confidence is established that he can work unsupervised.
Maintenance Programmed shall be thorough, workable and consistent with the manufacturer's specifications. Many injuries and much equipment damage can be averted through proper attention to items such as motors, drives, wire ropes, sheaves, hydraulic systems, and other vital parts. A systematic preventative maintenance program shall be established and records shall be kept by the Site Supervisor.

Safety Rules to be observed

Operators shall always check to make certain that other workers are clear before starting.
Wire ropes, drums and shackles shall be inspected regularly for wear.
When equipment is being operated no person other than the operator shall be near control panel.
The operator's attention shall never he distracted by conversation with any other person. The operator shall never leave the control panel while winch is in operation.
Engines on all winch equipment shall be stopped before refueling is carried out.
All towing loads shall be closely monitored during winching operation.

Confined Space Entry

Confined spaces defined as a working space having limited openings for entry and exit and oxygen level below the normal level. Areas such as sanitary sewers, underground utility vaults, water gate wells, meter pits, and manholes are common examples of confined spaces. Confined spaces may present unfavorable natural ventilation, dangerous concentrations of air contaminants, combustible or flammable gases or vapors, a deficiency of oxygen, and/ or loose materials that could a engulf worker. Because of the danger they present, confined spaces are not intended for continuous Employee occupancy. Entry into a confined space is a dangerous task and precautions must be followed to ensure the safety and health of entrants. Employees engaged in confined space work will be appropriately trained in the use of CPR, first aid, air sampling equipment, emergency extraction equipment, communication procedures, as well as confined space ventilation requirements.
The job site supervisor will complete a Confined Space Entry Permit before each entry
The entry permit is good for only one shift. Each shift must be issued its own permit.
Only authorized person to approve entry and sign the permit.

Responsibilities of Supervisor

- Select qualified entry team.
- Complete entry permit before entry.
- Provide required entry equipment and check that it is in proper working order.
- Assign personnel entry positions and have supervisor, entrant and safety observer sign entry permit.
- Review emergency procedures with employees.
- Connect entrant to extraction equipment.
- Set up communication process.

Take air sampling of confined space on entry. Monitor space for oxygen deficiency, toxicity, and combustibility while entry is in progress. Since it may exists following hazards:

• Contains, or has the potential to contain, a hazardous atmosphere that is oxygen deficient or enriched, explosive or combustible, and/or toxic in nature.
- Has the potential to entrap an entrant due to inwardly converging walls.
- Has the potential to engulf the entrant in a liquid or particulate substance.
- Presents any other recognized serious safety or health hazards.

Electric Power

Electrical installations and/or repairs should be performed by a qualified Electrician.
Electric tools and equipment must be maintained in good condition to avoid shocks and injuries.
The following procedures will be followed to ensure worker safety:

• Use a ground fault circuit interrupter (GFCI) with electric power equipment outdoors and in wet or damp environments.
• Cover electrical boxes and panels.
• Use proper wiring and cables and join with connectors if need to join.
• Provide appropriate insulation required for connection or joints where needed.
• Do not join bare wire to sockets.
• Read and heed warnings on electrical tools and equipment.
• Disconnect and service any tool that shocks its user.
• If a tool trips a circuit breaker, remove it from service for repairs.
• Disconnect power supply before repairing, servicing, or working on or near electrical fixtures.
• Comply with lockout / tag out procedures.
• Repair or replace worn power and extension cords.
• Don't use power or extension cords that are missing ground prongs.
• Protect all cords from foot and vehicular traffic, sharp corners, and pinching.
• Don't drape cords over nails, hooks, sharp or hot objects.
• Disconnect cords by pulling the plug from the outlet.
• Use guards around temporary lights to prevent accidental contact or breakage.
• Keep flammable materials away from bulbs and heating devices.

Excavations

An excavated area can be a hazardous place. Depending on the depth of the Excavation and the surrounding soil conditions, certain precautions must be taken to prevent cave-ins, falls, and disruption of existing underground services.

The following procedures will reduce exposure to accidents and injuries:

• Maintain a safe distance between overhead and underground utilities while operating excavating tools and equipment.
• Equipment must be fitted with the appropriate safety devices such as rollover protection, safety belts, and back up alarms.
• Place spoils (excavated material) at least two feet from the edge of the excavation.
• Vehicle traffic (including excavation equipment) must not travel so close to the dig as to cause cave-ins.
• Restrict entry into the excavated area. Only authorized workers should be allowed in, and they should not remain within the excavated area any longer than necessary.
• Employees working around machinery and in excavations must wear hard hats, safety boots, and other personal protective equipment, as necessary.
• Provide ladders or ramps within excavations that are four feet deep or more; discourage workers from jumping or climbing over the walls of excavations.
• Excavations deeper than five feet must be sloped, benched, or shored according to soil conditions.
• Barricade excavations from the general public, as necessary.
• If an excavation creates a fall exposure of six feet or more, appropriate measures have to be taken to provide barriers as "Fall Protection."
• Ensure adequate ventilation when operating gas powered equipment within excavations.
• Some excavations may be considered "confined spaces," and require atmospheric testing and confined space entry procedure.

Fall Protection

Year after year, falls rank near the top of causes of -related injuries and deaths. Many serious and disabling falls occur from less than 10 feet. The most effective countermeasure to job site falls is to minimize workers' fall exposure--that is reduce the situations and conditions that could lead to a serious fall. Below is a list of common fall exposures and recommendations on how to prevent injuries in these areas.

Common Fall Exposures on Sites.

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Ladders:
A step ladder should be opened fully and set on a level surface. Don't lean an unopened step ladder against a wall. Never stand on the top two steps of a step ladder. Straight and extension ladders should be placed on a 4:1 pitch with a foot out for every four feet up. The top of an extension ladder should extend at least three feet above the step off point.

The top or bottom of a ladder must be secured to prevent shifting. Ladder rungs should be properly spaced and secured to the ladder frame.

Stairwells and Floor Openings:
Stairwell openings and holes in floors should be covered with plywood or other suitable material and supported underneath. The cover must be nailed down and labeled with "HOLE," "COVER," or a color code. Temporary handrails, constructed with 2x4s, can also be used to guard openings, as well. Covers and handrails must be kept in place until stairs and/or walls have been completely installed and the fall exposure no longer exists. If covers and handrails are moved to accommodate work needs, they have to be reinstalled immediately unless the opening has been eliminated.

Fall Protection Methods

As Safety codes requires fall exposures of six feet or more be controlled by acceptable methods. Common fall protection control options include the use of guardrails, covers, lifelines, safety harnesses, lanyards, deceleration devices, and safety nets. Regulatory standards are very specific about the use of these devices; refer to the appropriate standard to prior to using this equipment.

Safety belts are not acceptable fall protection equipment by themselves. They may only be used as a positioning or restraining device; they are not to be relied on for fall protection.

Fall Protection Plan

Fall exposures of six feet or more must be controlled with conventional fall protections systems such as guardrails, safety nets or personal fall arrest equipment. When the use of conventional fall protection systems is "infeasible or creates a greater hazard" on a residential project, a "Fall Protection Plan" must be used as an alternative.

Hazardous Materials "Right to know"

Management will provide their employees with information concerning possible health effects and physical hazards of work place chemicals and other materials through a hazard communication or "Right to Know" program. A hazard communication program also requires employees to be properly trained in handling these materials.

Much of the information used in a hazard communication program is based on the contents of the material manufacturers' Material Safety Data Sheet (MSDS). The MSDS will describe potential health and environmental hazards of the product and its appropriate storage, handling, and use.

Ensure personnel are properly trained in first aid and emergency response.

Employees must use appropriate respiratory protection devices when using materials that emit hazardous fumes and/or dust. Provide ventilation to reduce exposure.

Keep MSDS current; make them available for employee review.

Store materials in appropriate containers and isolated from incompatible chemicals and ignition sources as applicable; containers must be appropriately labeled.

Notify other contractors on the job site of hazardous materials being used. Likewise, be aware of hazardous materials that are brought to the job site by other contractors.

Health

Introduction

Protection of health of employees at work is based on the control of exposure to hazards. Occupational health hazards are unlike safety hazards in that their effects may not always be obvious in the short term. Necessary controls will be implemented to protect employees from health hazards. In particular relation to hazardous substances, a company procedure - Control of Substance Hazardous to Health (COSHH), has been formulated and it is the principles of this procedure which will be applied to any substance used by Spanish Advanced for Foundation Drilling which has the potential under the correct set of circumstances, to cause harm to our personnel or others.

There are four main categories of health, which are as follows:

- Chemical hazards
- Physical hazards
- Ergonomic hazards
- Biological hazards

Chemical Hazards

Many materials used on projects contain chemical substances. Chemical hazards affect humans by:

- Inhalation
- Contact with skin or mucous membrane
- Ingestion (swallowing)

Dust & Fumes

Dust conditions in are created from the situations below, but not exclusively:

- Blasting
- Demolition
- Cleaning
- Excavation
- Crushing
- Batching

Note: Windy conditions can produce a dusty atmosphere where dust masks and/or eye protection may be needed.

General precautions to eliminate dust are dampening of floors, surfaces and provision of local or general exhaust ventilation. Personnel exposed to dust shall be provided with suitable personal protective equipment like dust mask and respirators, where engineering controls are not practicable or insufficient to control the hazard.

Typical dangerous dusts and fumes encountered in are as detailed below.

Hardwood Dust

This is likely to occur during sawing, molding, routing, carving etc; the likely hazards due to the wood dust are dermatitis, asthma, and severe irritation of the eyes, skin and respiratory system. Carpentry shops will be provided with adequate ventilation. Personal protective clothing such as dust mask, gloves, goggles etc.

Lead Dust or Fumes

Lead dust or fumes arise during cutting, welding, soldering etc; The likely hazards due to lead dust or lead fumes are anemia, fatigue, and muscle weakness. Personnel exposed to lead fumes or dust shall be provided with suitable Personal Protective Equipment if effective engineering controls are not reasonably practicable, they will also be educated to practice good personal hygiene. Eating, drinking, or smoking on the job is strictly forbidden.

Silica & Quartz Dust

Large quantities of granite and similar rock aggregates used to make concrete are the sources of these dusts. Personnel exposed will suffer from conditions like silicosis and lung dis-function. Where engineering controls cannot be implemented to effectively control exposure, suitable and sufficient PPE will be provided.

Welding & Gas Cutting Fumes

Various types of fumes are created during welding and cutting of metals Suitable protective equipment and clothing shall be provided and be worn by the welders and helpers where engineering controls cannot be affected.

Gases & Vapors

The majority of gases and vapors have a toxic effect and inhalation usually results in health problems, sometimes with fatal or long-term effects.

Some of the commonly encountered gases and vapors are as follows:

Hydrocarbon

• Hydrocarbon gases are heavier than air and can accumulate in low-lying areas such as valve pits and excavations. They may also be present in the banded areas of crude oil storage tanks and in pipeline excavations because of gas seeping from pipeline leakages.

• Exposure to hydrocarbons can lead to asphyxiation and respiratory problems for those exposed. Hydrocarbon gas is also highly flammable and it should not be exposed to ignition sources. Necessary controls shall be in place before employing personnel where hydrocarbon gas presence is suspected.

Carbon Monoxide

• Carbon monoxide is a product of combustion, normally from vehicle exhausts and it is particularly hazardous in confined spaces. Major precautions which can be taken against this include keeping combustion engines vehicles and plant well clear of confined spaces and excavations, redirecting of exhausts and ensuring that confined spaces are well ventilated, artificially if necessary.

Hydrogen Sulfide (H2S)

- H2S is a highly toxic colorless gas, heavier than air. H2S is poisonous and can paralyze the respiratory system and kill in minutes. The properties of H2S are as follows:

- Properties of H2S:

• Deadly - extremely toxic gas

• Colorless

• Heavier than air, tends to settle in low-lying areas.

• Readily dispersed by wind movements

• Burns with a blue flame, producing Sulphur dioxide (SO2) which is also toxic.

• It has an odor of rotten eggs only in low concentrations. It rapidly deadens the sense of smell in higher concentration, making it undetectable to exposed individuals — in these higher concentrations, exposure leads to rapid paralysis of the respiratory system.

• It is highly corrosive to certain metals.

- Physical effects of H2S:

5 ppm	:	Easily detectable, unpleasant odor.
10 ppm	:	Maximum allowable exposure for 8 hours (Occupational exposure limit)
100 ppm	:	Coughing, eye irritation, loss of sense of smell after two minutes.
500 – 700 ppm	:	Loss of consciousness, and possibly death in thirty minutes to one hour.
700 – 1000 ppm	:	Rapid unconsciousness, respiratory failure and death.
1000 – 2000 ppm	:	Immediate respiratory failure and death. Rapid medical treatment unlikely to be of any benefit.

- Control Required at Low Risk H2S Facilities:

Only trained personnel in H2S awareness and escape procedures are to be employed. Personnel employed shall carry personal H2S monitors set for I0ppm to detect H2S beyond the occupational exposure limit (10ppm) and escape hood (breathing apparatus).

Solvents

- Solvent vapors can be flammable and explosive. Solvents are commonly used in paints, paint strippers, varnishes, glues and surface coatings etc.. Solvent vapors can cause health problems like irritation of respiratory tract, headaches and skin irritation. Painting or varnishing areas must have adequate ventilation and personnel exposed to such vapors shall be provided with suitable protective equipment, clothing and advice on good handling and hygiene practices.

Ergonomic Hazards

Ergonomics is the science of the relationship between man and his physical environment. Well planned and laid out facilities, offices and workshops can lead to significant reductions in injuries knocks and strains. The following are some general points to take into account when considering ergonomic issues:

- Dimensions of computer workstations.
- Glares form Monitors.
- Lighting provided in the office.
- Emission from the office equipments used.
- Height of workbenches etc..
- Height of storage shelves and cabinets.
- Widths of walkways and accesses.
- Overcrowding of work areas.
- Provision of ergonomically friendly furniture, fixtures and fittings.

Physical Hazards

Physical hazards are classified into three categories: heat, noise and vibration.

Heat

Heat stress produces symptoms such as headache, giddiness, fainting and muscular cramps. Sweating results in loss of fluids and salt from the body and danger arises when this is not adequately compensated for by increased intake of salts and fluids. During hot weather, workers should be advised to consume salts and a large quantity of water. Salt tablets are not recommended. However, adding one level teaspoon of salt in 5ltrs of water is recommended.

Noise

Excessive noise beyond 80dB(A) can cause loss of hearing. Noise reduction measures shall be introduced wherever possible. No employee shall be exposed to noise levels in excess of 80dB(A). Ear protectors shall be made available if the noise level is beyond 80dB(A). Above 80dB(A), use of hearing protection will be mandatory.

Vibration

Several types of injury may be caused by prolonged exposure to high level vibration. Vibration is generally associated with the use of pneumatic hammers, portable grinders and other hand-held tools. The effect of vibration should be controlled by limited exposure of personnel to such type of work and by provision of suitably vibration damped tools and equipment.

Biological Hazards

Hazards of a biological nature can come in the form of chemical treatments used on hydrocarbon production facilities. Another source which presents a hazard of a biological nature is the handling of clinical waste or sanitation related effluents.

Adequate provision will be made for the handling and treatment of such substances. This will be largely on the basis of procedures, which will be developed case by case as each bio-hazard may well have a unique set of associated hazards, which can never be taken lightly.

Permit to Work

A permit to work is a documented, closely controlled process which may be implemented for work which is of a particularly hazardous nature or where the work is being carried out in an environment which requires certain documented safeguards to be in place. As well using client driven permit to work systems, Spanish Advanced for Foundation Drilling also operates an in-house permitting system where there is a need identified and where no client system is in existence or available.

A permit to work system, under certain circumstances could well be applied to any of the processes highlighted in this manual; however, some general situations where permits may normally be used as a matter of course are as follows:

- Hot work in hydrocarbon production zones.
- Entry into confined spaces.
- Activities with potential exposure to radioactive sources.
- Handling of certain chemical substances.
- High pressure testing.
- Heavy mechanical lifting processes.
- Work on isolated electrical equipment.

Environmental Protection

Spanish Advanced for Foundation Drilling is committed to take all possible measures to protect the environment in and around the work activities in line with the statutes of UAE as follows:

• All waste material generated during the work activities will be segregated and disposed off in the designated area and in the appropriate manner.
• The waste water or any other liquid generated during the operation will be disposed off as per the client's directive and as per Government Law.
• As far as possible no gases will be let to the atmosphere which can cause air pollution.
• All employees will be adequately educated on the necessity of protecting the environment

Please note: apart from the above instruction and safe practices indicated above all the local legal & statutory, standard requirements must be adhered.
It should also be noted that manual shall be updated as when the updating or amendment to the legal and statutory requirement notified

اللأسبانية المتقدمة لحفر الأساسات ذ.م.م.
Spanish Advanced For Foundation Drilling L.L.C.

Company quality system

We are committed to delivering the highest quality product and successfully meeting our client's expectations on every project, regardless of its size or complexity.
The prevention of defects and poor installations is dependent on the stringent application of quality management procedures from pre-construction to completion of the works. The ease in which a project can be handed over and fully accepted is dependent upon the attitudes and system applied through-out construction.
We use our own in- house quality control system that include quality checklist to ensure all our works are right first time.
Out Project managers are responsible for managing our process, which begins prior to our bid being submitted and continues through-out the construction stage and beyond.
Quality Control is integral part of every single stage of a project; we conduct specific quality control measures ranging from mock-ups to multiple on site inspections and equipment, material and pile testing.

Our quality objectives are to:

- Use our management system as a tool in achieving best price
- Ensure continues improvement of the quality and consistency of the service that we provide. Ensure all employers re-competent to carry out the duties required.
- Ensure effective communication process are in place.
- Operate effective supplier management process to ensure our suppliers have the ability to provide a safe and reliable service that meets our requirements
- Regularly review the needs and expectations our clients and initiate continuous improvement activities to meet their expectations.
- Have a system to identify quality problems and to take corrective / Preventative action.

Our senior management is committed to ensure these objectives are understood implemented and maintained at all levels within the business. It seeks the Co – operation of all employees in maintaining the high quality standards in the services provided to our clients that contributes to the success of the company.

Contact us

Mobile: +971 50 662 1334
+971 55 966 6422

Telephone: +971 2 6666 415

Email: info@spanishpiling.com

Website: www.spanishpiling.com

Location: P.O.Box: 79887, Abu Dhabi - Al Fahim
Group Building Mussafah - M4-First Floor Office No. 122


Spanish Piling