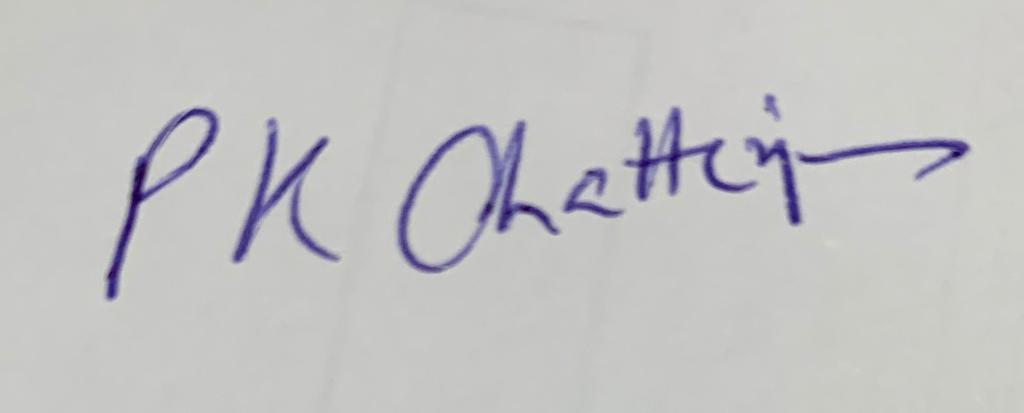
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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Delivering, unloading and storing of Materials using Pickup Van, Forklift, Pallet Trolley and Manual Handling. | **Plant and Traffic movement**   * Run over by vehicles/plants * Hit by reversing equipment * Overhead obstructions * Vehicle/Forklift break down * Property damage * Collision with other vehicles * Falling materials from Forklift * Over loading * Falling materials from pallet trolley * Personal injury | Operatives  Staff/visitors | 4 | 4 | 16 | High | 1) Delivery/ collection drivers shall be subject to McLaren induction/Training with regards to traffic management.  2)Ensure exclusion zone is set up around the preparation work area and all plant movement and checked by supervisor  3) Always use the pedestrian access with high visible vest.  4) Forklift must be tested and certified by 3rd party.  5) Daily checklist of forklift must maintained by forklift operator  6) Forklift Operator /banksman must be trained and certified by 3rd party.  7) Traffic light batons shall be provided for banks man at night  8) All plant to have a fully trained banks man present all times.  9) No plant to reverse without banks man.  10) Ensure access route are sufficient and safe to use.  11) Do not take rest in or under vehicles  12) Proper barricade and safety signboard provided on open excavation  13) All vehicles must be fitted with reverse alarm / Flashing light.  14) The work place and all access to be well illuminated.  15) Ensure close supervision, Effective Communication & Coordination with McLaren  16) Enforce Speed limit  17) Ensure all vehicles entering the site is properly maintained and reported if found any defect  18) Ensure materials are secured/tied in pallet trolley to avoid fall from trolley.  19) Do not ride or horse play with pallet trolley?  20) All operatives must follow and use their PPE on site. | 2 | 4 | 8 | Low | **Site Eng.**  **Supervisor**  **Foreman** |
| 2 | Manual Handling | musculoskeletal disorders, Hand injuries, cut , bruises  Sharp edges | Operatives involved in work | 4 | 3 | 12 | Medium | 1) Eliminate the need for manual handling by using mechanical aid.  2)Reduce the weight of a load to limit force exertion  3) If unsure of the load weight, check with supervisor.  5)Ensure proper manual handling procedure  6) Identify and eliminate sharp edges before any manual lift  7) Ensure adherence with sufficient and appropriate PPE.  8) Limit load carrying to 20kg per person  9) Supervisor must make sure while manual handling load individual task and environment to be considered to reduce the risk of manual handling. | 1 | 3 | 3 | Low | Supervisor, Foreman, Site Eng. |
| 3 | Material storing | Slips, Trips and fall  Poor house keeping | Operatives  Staff/storekeeper | 3 | 4 | 12 | Medium | 1. Ensure accesses are kept clear at all times.   2)Housekeeping to be carried out regularly throughout the day when required  3)Supervisor to ensure operatives are stacking material neatly and stacks are stable and in a safe condition  4)Provide adequate lighting especially during night hours  5) Appropriate space is allowed around storage areas for employees to move around safely without the risk being trapped between stacked materials.  6) Maintain good housekeeping.  7) Fire Extinguisher in place and do not obstruct with materials  8) No smoking and no loose connection in storage area  9) First Aid arrangement in place | 1 | 4 | 4 | Low | Supervisor, Foreman, Site Eng. |
| 4 | Erection and dismantling of Mobile scaffolding for Installation of GI/PVC Conduits and Tray and Trunking including cable lying. | Incorrect sequence/ Improper erection and dismantling of scaffold  Fall of person  Falling Objects | All operatives involved in work | 4 | 4 | 16 | High | 1) Ensure PTW to be in place.  2) Only trained persons(certified) are authorized to build towers in line with manufacturer’s instructions which must then be inspected and tagged by a competent person (scaffold inspector)  3) Ensure that all personnel involved in the task understand the hazard and risk involved related to the task.  4) Area inspected prior to where structure is to be erected.  5) Guard rails and toe boards to be used for all working platforms  6) Provide safe access to scaffold platforms  7) Do not climb cross-bracing as a means of access  8) All operatives working on height must wear full body harness and hooked in secured place. | 1 | 4 | 4 | Low | Supervisor, Foreman, Site Eng. |
| 5 | Installation of GI/PVC Conduits and Tray /Trunking/Cable pulling and Laying using Mobile Scaffolding.  . | Overturning of Mobile scaffold  Fall of person  Falling objects  Angle Grinder for GI Tray cutting  Hot work  Entanglement  Using solvent for PVC conduit joints  Dust  Use of threading Die for GI conduit  Sharp edge of existing Tray  Major injury | Operatives/Staff/  Visitors  Others | 4 | 4 | 16 | High | 1) Only trained and authorised personnel to carry out the task.  2) Ensure the PTW in place and task briefing by supervisor to work force.  3) Ensure proper working platform with complete fall protection  4) Secure the tools and objects kept on the platform  5) Ensure safe access to the working platform.  6) Ensure Full body harness and 100% tie off  7) Ensure the scaffold platform is properly erected with "Safe to use" tag.  8) Ensure castor wheels are locked and out rigger in place.  10) Hand tools must be secured/tethered  11) Hot work permit to be obtained and ensure that there is no combustible materials near cutting work.  12) Ensure Fire extinguisher in place with fire blanket to protect the Fire flux  13) Ensure cutting wheel must be from standard company and inspect before use.  14) Angle grinder must inspected by competent electrician and maintain record.  15) Ensure operatives must alert while using cutting tools for their clothing to avoid entanglement with moving parts.  16) Angle grinder must have safety guard and operatives must use face shield.  17) Dust mask and noise protection must use.  18) Safety data sheet and COSHH assessment must briefed to the operatives before using any chemicals and solvent.  19) Maintain good housekeeping.  20) PPE must be in use for every task.  21 While cable pulling activity need close supervision and with good communication  22) Roller to be use safety to pull the cable and secured to avoid fall from height. | 1 | 5 | 5 | Low | Supervisors Foreman, Site Eng. |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 6 | Cable glanding and termination  (Not energized) using drill machine and hole show cutter. | Physical Injuries like laceration, foreign parts in eyes, finger injury  Entanglement with  sharp edge tools  Noise and dust  Spark and Fire | All operatives involved | 4 | 4 | 16 | High | 1. PAT test to be conduct and maintain register.  2) All the power tools must be 110 volt and safe to use  3.All power supplies should be installed & connected  by a competent electrician.  4). RAMS to be briefed to the operatives before start the activity and maintain the record.  5.Hot work permit to be obtained and work area must free from combustible item  6. Fire extinguisher in place with fire blanket.  7. Noise protection to be use  8) Eye protection must be used.  9) Operatives should alert while using sharp edge tools to avoid entanglement with clothing.  10) Close supervision and necessary PPE. | 2 | 4 | 8 | Low | Supervisor, Foreman, Safety officer |
| 7 | Working in poor visibility/dust condition | Physical injuries,  Slips, trips & falls, Health effects – eye damage/respiratory diseases. | All personnel in the work area | 3 | 4 | 12 | Medium | 1. Prepare the working area for a good working condition.  2.All workers should wear high visibility vest and PPE  3. Ensure that the working area is well-ventilated.  4.Wear goggles & face mask when working in a dusty place  5. TBT conducted by supervisor.  6.First aider and first aid kit available on the site  7) Ensure that work area must have proper illumination  8) Maintain good house keeping | 1 | 4 | 4 | Low | Site engg  Supervisors, Foreman |
| 8 | Use of Ladder | Falling from height | Operatives | 3 | 4 | 12 | Medium | 1) Only light work, off short duration and work in which the operative can maintain secure hand and foot hold can be undertaken form a ladder  2) Never try to overreach with any ladders  3) Check the ladder is of suitable quality for industrial use and is in good condition  4) Check the inclination of the ladder conforms to the one-in-four rule.  5) Maintain a minimum of 3 points of contact with stepladders always (feet/thighs/hands)  If possible avoid the use of stepladders at a working height of 2 meters and more.  6) Check the ladder legs (and stays) are fully deployed or locked (depending on type) to maintain maximum base dimensions and the step ladder is orientated to provide maximum stability. | 2 | 4 | 8 | Low | Supervisor Foreman, Site Eng. |
| 9 | Use of power tools such as angel grinder, Drill machine, Jack Hammer | Damaged cable insulation,  Sockets.  Electrocution  Electric shock  Short circuit  Electric burn  Trip/Fall  **Noise**  Hearing loss  **Vibration**  **Dust** | Operatives and staff | 4 | 5 | 20 | High | 1) All portable electrical equipment must be PAT tested and color coded. Make sure the test dates are visible on the equipment.  2)Ensure all power tools are in good condition and appropriately maintained  3) PTW to be obtained, prior to commencing the task  4) Damaged industrial sockets and power cables must be removed.  5) Ensure the electrical cable is not damaged and has not been repaired with insulating tape or unsuitable connectors.  6) Ensure cables from power tools shall be organized so as not to present a tripping hazard  7) Only trained competent operatives to operate the power tools.  8) Ensure proper and regular maintenance of equipment that takes account of noise  9) Ensure proper hearing protection always.  10) Make sure people use the right tool for the job and are trained to use it correctly  11) Ensure defective tools that requires maintenance is reported for repair or replacement.  12) Instruct workers to keep their hands warm and dry, and to not grip a vibrating tool too tightly. Workers should allow the tool or machine to do the work.  13) Ensuring proper job rotation and limiting time operatives working with power tools and hand tools.  14) use dust mask | 1 | 5 | 5 | Low | Supervisor  Foreman  Site eng. |
| 10 | Use of Hand tools | Improper selection of hand tools.  Damaged and Defective Hand tools  Hand injuries  Pinch point  Ergonomics  Repetitive strain injury | Operatives/Staff | 3 | 3 | 9 | Medium | 1) Hand tools should be visually inspected for defects, prior to use.  2) Never use damaged, blunt or broken tools to avoid injury.  3) Select right tools for right Job  4) Ensure no Homemade or makeshift tools to be used at site  5) Remove from service any tool that shows signs of damage or defect  6) Ensure Hand tools are Stored in accordance with the manufacturer’s instructions.  7) Ensure hands are not in direct line of fire while working with hand tools  6) Ensure appropriate PPE always. | 2 | 2 | 4 | Low | Site engg  Supervisor  Foreman |

Approved By: Name PRABIR KUMAR Position \_HSE\_\_\_\_\_\_\_\_\_ Signature \_\_\_\_\_\_\_\_\_

**RISK ASSESSMENT & CONTROL GUIDELINES**

1. **Executing Steps:**
   1. **Planning**
2. Construction and HSE team must ensure that hazard identification is complete.
3. Construction and HSE team must prioritize the hazard issues, which are of significant in nature. (It means that risks have well established legal requirements, potentially high risks).
4. Construction and HSE team to prepare the risk assessment plan for the priorities identified hazards for these potential high risks.
   1. **Risk Assessment**

Risk is the probability of an event occurring in a given set of circumstances. The ‘event’ is an exposure to hazard. The hazard is the potential to cause harm. The risk assessment is the technique of evaluating not just the likelihood of an event occurring, but also the outcome will be in terms of injury, loss, damage or harm.

* 1. **Risk Assessment Process**

The process of carrying out a risk assessment should be as follows.

1. Identify the hazards.
2. Identify who might be harmed and how.
3. Evaluate the risk and implement the control measures.
4. Record the significant findings.
5. Review the assessment and update if necessary.
   1. **Examination of the Hazards and Risk Associated**

* Competent staff must be used in examining the risk associated with the identified hazard.
* Competent staff should examine following aspect to determine the risk involved:
* Examine the existing control measures in place.
* Identify employees at risk.
* Likelihood of risk.
* Severity
* Risk level and their tolerability.
  1. **Evaluating the risk:**

Once the necessary information has been obtained on the hazards encountered by work activities, next stage is to access the risks.

* + 1. **Risk Rating Score**

Risk rating score is a combination of two factors.

* The severity of the risk that could injure persons or cause damage to plant.
* The likelihood of the risk that it could happen (Probability).

**RISK RATING = LIKELIHOOD X SEVERITY**

**NOTE: Each activity has to be assessed for the risk value for determining the level of Severity and likelihood are mentioned in the table below.**

**SEVERITY**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No Injury (1)** | **Minor Injury (2)** | **Moderate Injury (3)** | **Major Injury (4)** | **Catastrophic (5)** |
| **Rarely (1)** | **1** | **2** | **3** | **4** | **5** |
| **Unlikely (2)** | **2** | **4** | **6** | **8** | **10** |
| **Possible (3)** | **3** | **6** | **9** | **12** | **15** |
| **Likely (4)** | **4** | **8** | **12** | **16** | **20** |
| **Almost Certain (5)** | **5** | **10** | **15** | **20** | **25** |

**LIKELIHOOD**

**RISK LEVEL:**

|  |  |  |
| --- | --- | --- |
| **Low** | **Medium** | **High** |