



# RISK ASSESSMENT



Title	<b>Electrical Testing &amp; Commissioning</b>
Reference	<b>132-KAP-2B-MEP-CMS-E-004 REV.00</b>

<b>Risk Assessment No:</b>	<b>Site:</b> P-132-1 (TABUK)	<b>Activity:</b> Testing & commissioning	<b>Location:</b> ALL SITE	<b>Date:</b> 12 /12 /2021		
<b>Persons Exposed</b>	<b>Employees</b> 20	<b>No. Other workers</b> 0	<b>Public/visitors</b> 0	<b>Young persons</b> Yes	<b>Total persons at risk</b> 20	<b>Person conducting assessment:</b> ENG. Abdul Rehman / ENG. Mahmoud Al Sharqawi <b>Person supervising work:</b> Sup. Shoukat Ali

Severity	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
	1	2	3	4	5	

Likelihood

**Likelihood**

Rating 1 = Negligible  
Rating 2 = Unlikely  
Rating 3 = Likely  
Rating 4 = Very likely  
Rating 5 = Almost certain

**Severity**

Rating 1 = 1<sup>st</sup> Aid injury / No injury  
Rating 2 = Minor injury or illness  
Rating 3 = 3 day LTI injury or moderate injury  
Rating 4 = Major or Serious injury  
Rating 5 = Fatality, disabling injury, etc

**Risk = Likelihood x Severity**

AcceptableFurther Control Measures RequiredUnacceptable Risk – Work Stops

HAZARD	1	2	3	4	5	6	7	8
	Factors of Harm		Risk Multiple of columns 1 x 2	CONTROL MEASURES	Likelihood See note 1	Severity See note 1	Residual risk Multiple of columns 5 x 6	Control measures implemented by (name)
	Likelihood	Severity						
1. Working on Mobile Scaffolding <ul style="list-style-type: none"> <li>Fall From Height</li> <li>Falling Objects</li> <li>Over Loading</li> <li>Access &amp; Egress</li> </ul>	3	4	12	1. Pre Job briefing must before start the activity 2. Ensure the PTW in place and comply the procedure. 3. Ensure proper working platform with complete fall protection 4. Ensure Full body harness and 100% Tie off 5. Ensure the scaffold platform is properly erected with "Safe to use" tag. 6. Ensure castor wheels are locked 7. Hand tools must be secured/tethered 8. Work materials strictly not allowed to be stored on platform except for working tools 9. Ensure avoid over reaching and climb on handrail. 10. Ensure unauthorized person not allowed to modify the scaffolding and if needed to any changes then must be modified by trained and certified	1	4	4	Sire Engineer Site Supervisor Site Foreman



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				scaffolder. 11. Ensure safe access to the working platform 12. Scaffold access must be free from obstruction 13. Ensure sufficient illumination in work area				
2. Testing and Commissioning of SMDB & DB - Insulation tester and RCD tester <ul style="list-style-type: none"> <li>• Electric Shock/ Electrocutation</li> <li>• Exposed Energized Terminals</li> <li>• Fire</li> <li>• Burn</li> <li>• Failure of testing kits</li> <li>• Explosion</li> <li>• Fatality</li> </ul>	4	3	12	1. Before starting the activity ensured that briefing done and Permit procedure in place with necessary precaution. 2. Ensure that proper PPE is used. These include safety shoes, safety helmet, safety gloves (Rubber-High Voltage), Rubber mat, Insulated ladders. 3. Fire extinguishers, Fire Blankets shall be in place. 4. Tag all breakers and switches. Use padlocks wherever possible. Disconnected terminals shall be covered & provided with adequate separations to avoid any live contacts. 5. Unauthorized personnel must be kept away from the test area. Barricade the area with warning signage. 6. Ensure no metal body is in touch with any test terminals and adequate fall protection for the de-assembled metal bodies. 7. Physical inspection around SMDB area is to be carried out with the general arrangement safety measure. 8. Lock - out / Tag - out Procedure to be followed as per COP 24 for energy isolation activity. 9. Operatives involved for testing activity, must aware the Lock-out/Tag-out system procedures. 10. Ensured dedicated Residual current devices (RCDs) are used to provide supplementary protection for the test equipment. 11. Physical separation should be provided to test leads/connection terminals to avoid any contact with any live circuits. 12. Ensured operatives adequately trained and knowledgeable, or have sufficient experience to carry out the work without risk to themselves and others. 13. Ensure the far end of the testing circuits are properly isolated, separated and barricaded. 14. Deploy stand by personals to unauthorized entries	1	4		Sire Engineer Site Supervisor Site Foreman



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<p>3. Use of temporary Power supply.</p> <ul style="list-style-type: none"> <li>• Damaged Sockets &amp; cable insulation.</li> <li>• Electrocutation</li> <li>• Electric shock</li> <li>• Short circuit &amp; Burns</li> <li>• Trip/Fall</li> </ul>	3	3	9	<p>1. All portable electrical equipment must be tested and colour coded. Make sure the test dates are visible on the equipment.</p> <p>2. Ensure all test equipment are in good condition and periodically calibrated.</p> <p>3. PTW to be obtained for above 110 volt electrical permit prior to commencing the task.</p> <p>4. Damaged industrial sockets and power cables must be removed from service.</p> <p>5. Ensure the electrical cable is not damaged and has not been repaired with insulating tape or unsuitable connectors.</p> <p>6. Ensure cables from test equipment shall be organized so as not to present a tripping hazard</p> <p>7. Only trained competent operatives to operate the test equipment.</p> <p>8. Ensure proper earth leakage protection is provided.</p>	1	4	4	Sire Engineer Site Supervisor Site Foreman
<p>4. Use of Hand tools</p> <ul style="list-style-type: none"> <li>• Improper selection of hand tools.</li> <li>• Damaged and Defective Hand tools.</li> <li>• Hand injuries</li> <li>• Pinch point</li> <li>• Ergonomics</li> <li>• Repetitive strain injury</li> </ul>	3	3	9	<p>1. Hand tools should be visually inspected for defects, prior to use.</p> <p>2. Never use damaged, blunt or broken tools to avoid injury.</p> <p>3. Select right tools for right Job</p> <p>4. Ensure no Homemade or makeshift tools to be used at site</p> <p>5. Remove from service any tool that shows signs of damage or defect</p> <p>6. Ensure Hand tools are Stored in accordance with the manufacturer's instructions.</p> <p>7. Ensure hands are not in direct line of fire while working with hand tools</p> <p>8. Ensure appropriate PPE at all times.</p>	1	3	3	Sire Engineer Site Supervisor Site Foreman
<p>5. Use of Ladder</p> <ul style="list-style-type: none"> <li>• Falling from height</li> <li>• Working on Uneven ground</li> <li>• Falling objects</li> </ul>	3	4	12	<p>1. Ladder is not to use daily basis but in certain cases where there is very narrow place and even podium ladder not possible to place in that cases Ladder can be use if permission granted from McLaren Safety</p> <p>2. Never try to overreach with any ladders</p> <p>3. Check the ladder is adequately maintained and free from damages/good condition</p> <p>4. Maintain a minimum of 3 points of contact with stepladders at all times (feet/thighs/hands)</p> <p>5. If possible avoid the use of stepladders at a working height of 2 meters and more.</p> <p>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.</p> <p>7. Stepladders/ladders has to be used on levelled ground/firm base</p> <p>8. Ensure that during using ladder from the top 2 step is blocked to avoid climb on that.</p> <p>9. The ladder securely fixed to prevent slipping outwards or sideways or securely footed at all times.</p> <p>10. Person must hold the ladder while another operative working on it</p>	1	4	4	Sire Engineer Site Supervisor Site Foreman

NB: See notes at the end of this documents



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In order to determine the risk, multiply the likelihood rating by the severity rating. The higher the score, the higher the risk and the higher the hazard's priority for workplace precautions or other actions

These ratings have to be subjective. They depend on your judgment given your knowledge at the time. Further, they are not absolute. The law says that risks should be reduced **“as long as reasonable practicable” - ALARP**

Since risk = likelihood x severity, there are only three basic ways of reducing risk.

1. Reduce the likelihood
2. Reduce the severity
3. Reduce both the likelihood & the severity

## RISK ASSESSMENT & CONTROL GUIDELINES

### 1. Executing Steps:

#### 1.1. Planning

- a) Construction and HSE team must ensure that hazard identification is complete.
- b) 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).
- c) Construction and HSE team to prepare the risk assessment plan for the priorities identified hazards for these potential high risks.

#### 1.2. 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.

#### 1.3. 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.

#### 1.4. Examination of the Hazards and Risk Associated

- Competent staff must be used in examining the risk associated with the identified hazard.



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- 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.

**HSE Representative**  
HSE LEAD. Zaigham Abbas

**Person conducting assessment:**  
ENG. Abdul Rahman

**Person conducting assessment:**  
ENG. Mahmoud Al Sharqawi

**Person supervising work**  
Sup. Shoukat Ali