<table>
<thead>
<tr>
<th>TSC Category</th>
<th>Maintenance Management</th>
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<tbody>
<tr>
<td>TSC</td>
<td>Pipeline Damage Prevention Management</td>
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<tr>
<td>TSC Description</td>
<td>Manage pipeline damage prevention</td>
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<thead>
<tr>
<th>TSC Proficiency Description</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
<th>Level 6</th>
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<tbody>
<tr>
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<td>EPW-MAI-2041-1.1</td>
<td>EPW-MAI-3041-1.1</td>
<td>EPW-MAI-4041-1.1</td>
<td>EPW-MAI-5041-1.1</td>
<td><strong>Formulate measures for pipeline damage prevention</strong></td>
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<td>Conduct site supervision for pipeline damage prevention</td>
<td>Monitor third-party activities in the vicinity of pipelines to prevent damage</td>
<td>Formulate risk reduction strategies for working in the vicinity of pipelines, and plan for education programmes on evacuation activities in the event of pipeline damage</td>
<td><strong>Formulate measures for pipeline damage prevention</strong></td>
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### Knowledge

- Sunken and exposed pipeline identification methods
- Damaged siphon identification techniques
- Pipeline damage identification methods
- Pipeline drawings and Geographic Information Systems (GIS) information
- Pipeline protection procedures
- Topographical and geographical map interpretation methods
- Types of third-party activities in the vicinity of pipelines
- Types of permits and work orders
- Pipeline damage mechanisms
- Risks associated with pipeline damage
- Safe practices for working in vicinity of pipelines
- Methods of pre-emptive damage prevention
- Methods to educate stakeholders on evacuation plans
- Programme planning approaches
- Types of extensive third-party works that could affect pipeline integrity
- Types of tunnelling activities occurring in the vicinity of pipelines
- Best industry practices for pipeline damage prevention
- Methods of pre-emptive damage prevention
- Types of extensive third-party works that could affect pipeline integrity
- Types of tunnelling activities occurring in the vicinity of pipelines

### Abilities

- Conduct site supervision to prevent damage to pipelines
- Recommend safe work practices in the vicinity of pipelines
- Identify type of damage on pipelines
- Control and monitor third-party activities in the vicinity of pipelines
- Ensure safe control of operations in the vicinity of pipelines
- Conduct education programmes on evacuation activities for contractors and regulatory agencies
- Determine impact of nearby third-party works on pipeline equipment
- Plan and implement damage prevention and education programmes for contractors and regulatory agencies involved in excavation activities
- Formulate risk reduction strategies for working in the vicinity of pipelines
- Formulate new and/or additional measures to prevent damage to pipelines
- Evaluate and classify damage mechanisms for pipelines
- Formulate pressure reduction requirements following pipeline damage
Range of Application | Range of application includes, but is not limited to:
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| • Galvanised iron and steel pipes  
• Flow Control Systems  
• Gas Filters  
• Water Bath Heaters  
• Pressure Regulators  
• Gas Meters  
• Odorant Injection Systems  
• Gas Analysers  
• Valves and Actuators  
• Pressure and Temperature Transmitters  
• Gas Leak Detectors  
• Cathodic Protection Systems  
• Programmable Logic Controllers  
• Supervisory Control and Data Acquisition (SCADA)  
• Remote Terminal Unit (RTU)  
• Modbuses  
• Fittings  
• Anode beds, galvanic anodes, and sacrificial anodes