

TRAINER MANUAL  
Practical Exercise Module D\_PE\_1\_ Electrical safe isolation of circuits

Level 1

<b>Objectives:</b>	<p>Participants gain skills in</p> <ol style="list-style-type: none"> <li>1. Safe isolation of electrical circuits.</li> <li>2. Observation and application of measures for occupational health and safety and accident prevention regulations.</li> <li>3. Planning and controlling structured work processes, controlling and evaluating work results             <ol style="list-style-type: none"> <li>3.1 Preparing workstation with consideration of the work task</li> <li>3.2 Planning and defining work steps and procedures                 <ul style="list-style-type: none"> <li>- Assuring prescribed and structured procedures during the live-circuit testing process</li> </ul> </li> <li>3.3 Read and interpret written technical information related to the work task</li> <li>3.4 Apply verbal and written practices of communication</li> <li>3.5 Select and use appropriate test instrument for electrical circuit testing                 <ul style="list-style-type: none"> <li>- Check the testing instrument for functionality</li> </ul> </li> <li>3.6 Demonstrate knowledge and skills for the safe isolation of electrical circuits.</li> <li>3.7 Demonstrate knowledge and skills for electrical circuit values measurement</li> </ol> </li> <li>4. Maintenance and servicing of tools &amp; equipment             <ol style="list-style-type: none"> <li>4.1 Cleaning, maintaining and preserving tools &amp; equipment</li> </ol> </li> </ol>
<b>Duration:</b>	45 minutes
<b>Material:</b>	<p>Whiteboard/Blackboard or handout of exercise description</p> <p>Handouts:</p> <p>D_HO_PE1_Work description – Electrical safe isolation  D_HO_Last minute risk assessment  D_HO_Safe electric isolation procedure  D_HO_PID &amp; wiring Example Split-AC  D_HO_Two-pole voltage tester manual</p>
<b>Tools &amp; equipment:</b>	<p>Two-pole voltage tester  General electrical tools  Fuse lock</p>
<b>Workshop arrangements</b>	<p>Workshop is arranged for up to sixteen (16) participants. Provision of eight (8) items for voltage testing and circuit isolation (e.g. D_PE_2or work bench power supply).</p> <p>Sufficient workshop space</p>



Figure 1: Example of fuse lock



Figure 2: Prohibition sign



Figure 3: Two-pole voltage tester

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Summary – Session Overview				
TIME	CONTENT	OBJECTIVES	TRAINING MATERIAL	DESCRIPTION OF TRAINING SESSION AND TRAINER NOTES
15'	1. Participants briefing 2. General safety briefing	Participants: <ul style="list-style-type: none"> <li>• Understand the given work-task</li> <li>• Are familiar with the required safety arrangements</li> <li>• Are familiar with the local conditions</li> <li>• Are familiar with electrical voltage indicating device and proving unit (if used)</li> </ul>	Whiteboard/Blackboard or handout of exercise description D_HO_PE1_Work description – Electrical safe isolation D_HO_Last minute risk assessment D_HO_Safe electric isolation procedure D_HO_PID & wiring Example Split-AC D_HO_Two-pole voltage tester manual	<u>Plenary</u> <ul style="list-style-type: none"> <li>• Trainer explains work task.</li> <li>• Trainees obtain permit of work.</li> <li>• Team work not permitted.</li> </ul>
30'	<b>Electrical safe isolation of an electrical circuit according to documentation provided</b> Filling of check-list while executing work-steps: <ul style="list-style-type: none"> <li>• Obtain permit of work, execute risk assessment</li> <li>• Undertake worksite preparation, test equipment and PPE check (having risk assessment in mind)</li> <li>• Safeguard the workshop area and inform involved parties</li> <li>• Use of electrical circuit drawing</li> </ul>	Participants: <ul style="list-style-type: none"> <li>• Learn how to carry out a safe isolation of an electrical circuit</li> <li>• Obtain knowledge on how to execute a risk assessment at installation site</li> <li>• Learn how to get familiar with using PPE</li> <li>• Learn to understand and apply the electrical testing principles.</li> <li>• Learn to understand and apply the documentation</li> </ul>		Trainer observes work routine and gives instructions to participants if they have questions. Trainer grants permit of work. Trainer evaluates work according to outlined criteria with the help of an assessment sheet (will be provided at a later date).  <u>Group work of 2 participants at one workstation:</u> <ul style="list-style-type: none"> <li>• All authorisation was obtained</li> <li>• Work area is safeguarded</li> <li>• Appropriate PPE is selected in line with the job requirements</li> <li>• Workplace arrangements are structured and in clean conditions.</li> <li>• All necessary test equipment is in safe conditions and used correctly</li> </ul>

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TIME	CONTENT	OBJECTIVES	TRAINING MATERIAL	DESCRIPTION OF TRAINING SESSION AND TRAINER NOTES
	<ul style="list-style-type: none"> <li>• Select appropriate two-pole voltage tester, read user manual</li> <li>• Carry out safe isolation of electrical circuit intended to work on</li> <li>• Verification and confirmation that all electrical lines are dead</li> </ul>	<ul style="list-style-type: none"> <li>• of used tools and equipment</li> <li>• Obtain knowledge and skills to practically execute electrical safe isolation</li> <li>• Obtain knowledge and skills how to use and do a functionality test of a two-pole voltage tester</li> </ul>		<ul style="list-style-type: none"> <li>• Work instructions technical plans/drawings are interpreted as per job requirements</li> <li>• Electrical safe isolation is carried out correctly</li> </ul> <p><u>Competency must be assessed through:</u></p> <ul style="list-style-type: none"> <li>• Direct observation</li> <li>• Demonstration</li> <li>• Questions related to required knowledge</li> <li>• Competency may be assessed in the work place or in a simulated work place setting</li> </ul> <p><u>Assessment requires evidence in form of:</u></p> <ul style="list-style-type: none"> <li>• Conducted survey of site for safety of isolating the circuit.</li> <li>• Conducted the relevant risk assessment</li> <li>• Ensured continuous OHS measures</li> <li>• Electrical safe isolation of circuit carried out according the provided documentation.</li> <li>• Tested the electrical circuit correctly</li> <li>• Ensured continuously organised and clean workplace condition</li> </ul>
<b>45 min</b>	Total time			