

1. Title	Non-destructive test (NDT) – Liquid Penetrant Testing									
2. Code	EMCUMA102A									
3. Range	Use liquid penetrant, at servicing centres or locations with operating equipment, to inspect equipment or materials for surface cracks and make a simple analysis.									
4. Level	1									
5. Credit	2									
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <table border="0"> <tr> <td style="vertical-align: top;">6.1</td> <td style="vertical-align: top;">Techniques and principles of inspecting mechanical equipment or materials for surface cracks</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>◆ Perform visual inspection to locate suspected surface cracks</li> <li>◆ Understand the techniques and principles of inspecting equipment or materials for surface cracks</li> <li>◆ Understand the chemical hazards caused by penetrant and developers, and relevant concerns for use</li> <li>◆ Understand that liquid penetration inspection is not applicable to high temperature materials</li> </ul> </td> </tr> <tr> <td style="vertical-align: top;">6.2</td> <td style="vertical-align: top;">Methods and procedures of analyzing and identifying external cracks on metal equipment or materials</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>◆ Capable to use liquid penetrant and developers effectively to inspect the surface cracks of equipment or materials</li> <li>◆ Capable to mark the position with cracks effectively</li> </ul> </td> </tr> <tr> <td style="vertical-align: top;">6.3</td> <td style="vertical-align: top;">Code of practice for using penetrant and developers</td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>◆ Use penetrant and developers safely to complete the non-destructive test</li> </ul> </td> </tr> </table>	6.1	Techniques and principles of inspecting mechanical equipment or materials for surface cracks	<ul style="list-style-type: none"> <li>◆ Perform visual inspection to locate suspected surface cracks</li> <li>◆ Understand the techniques and principles of inspecting equipment or materials for surface cracks</li> <li>◆ Understand the chemical hazards caused by penetrant and developers, and relevant concerns for use</li> <li>◆ Understand that liquid penetration inspection is not applicable to high temperature materials</li> </ul>	6.2	Methods and procedures of analyzing and identifying external cracks on metal equipment or materials	<ul style="list-style-type: none"> <li>◆ Capable to use liquid penetrant and developers effectively to inspect the surface cracks of equipment or materials</li> <li>◆ Capable to mark the position with cracks effectively</li> </ul>	6.3	Code of practice for using penetrant and developers	<ul style="list-style-type: none"> <li>◆ Use penetrant and developers safely to complete the non-destructive test</li> </ul>
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7. Assessment Criteria	<p>The integrated outcome requirement of this unit of competency is:</p> <p>(i) Capable to use liquid penetrant and developer inspection method safely and correctly to identify equipment or materials for surface cracks which are not easily seen; and to mark the cracks correctly.</p>									
8. Remarks	The credit value of this unit of competency is set on the presumption that the person already possesses the competency of reading mechanical drawings and manuals for materials.									