

Specification of Competency Standards
for the Manufacturing Technology Industry
Unit of Competency

Functional Area - Product Quality Control and Testing

Title	Identification and analyze of metal materials
Code	106529L4
Range	This unit of competency is applicable to the quality control department of the metal products industry corporation. Practitioners should be capable to identify and analyse of metal materials
Level	4
Credit	3 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Understand the characteristics, specifications and standards of all kinds of metal materials</p> <ul style="list-style-type: none"> • Understand the types, information and content covered of the material instructions • Understand the characteristics of all kinds of metal materials, such as physical performance, chemical performance and mechanical performance • Understand the composition and range of metal materials • Recognise different methods and equipment of chemical analysis of metal materials, such as direct-reading spectroscopy, spectrophotometry, X fluorescence spectrometer, oxygen and nitrogen analyzer and carbon and sulfur analyzer • Understand the mechanical properties of metal materials testing, including tensile test, hardness test, compression test, bending test • Recognise the commonly used standards of metal materials chemical composition analysis, such as ISO 9556 ASTM E415 • Recognise commonly used standards to test the mechanical properties of metal materials, such as GB 228, ASTM A370, ISO 7438, ISO 148-1 <p>2. Carry out all kinds of metal materials inspections</p> <ul style="list-style-type: none"> • Read material instructions / material evidence, and access important information from manual / material evidence, such as the composition and usage • Carry out general inspection of metal material, such as hardness, size and thickness • According to the resource of the corporation, select and operate appropriate equipment and carry out metal materials inspection • Select suitable third-party testing agency, carry out complex metal analysis <p>3. Professional handling of all kinds of metal materials inspections</p> <ul style="list-style-type: none"> • Follow the safety guidelines and related operational codes of metal materials inspection, ensure the safety of inspection procedures, stability of inspection equipment and accuracy of inspection results
Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <ul style="list-style-type: none"> • Capable to carry out all kinds of testing of metal materials in accordance with the drawing and inspection requirements, and ensure accuracy of the testing results • Capable to independently operate relevant inspection equipment and fixtures and carry out simple daily maintenance
Remark	