

NATIONAL METAL AND ENGINEERING CURRICULUM

<u>MODULE:</u>	INSTALLATION AND COMMISSIONING OF COOLING TOWERS (NR035)
<u>PURPOSE:</u>	This module aims to provide instruction for persons employed in the installation of cooling water systems.
<u>NOMINAL DURATION:</u>	Half module

*A full module is designed on the assumption that most of the students will achieve the competencies specified in 35 to 40 hours.
The length of time taken to complete a module will vary, depending on factors such as teaching method used, knowledge and skills at entry and the individual student's ability.*

<u>PREREQUISITES:</u>	Occupational Health and Safety (NBB02)
<u>LEARNING OUTCOMES:</u>	On completion of this module the student will be able to: <ol style="list-style-type: none">1. Lay out the construction site.2. Install the cooling towers in accordance with manufacturer's instructions.3. Demonstrate a knowledge of relevant codes, regulations and standards.4. Demonstrate the ability to commission and pre-clean cooling towers in accordance with manufacturer's instructions.

STUDENTS SHOULD BE MADE AWARE OF OCCUPATIONAL HEALTH AND SAFETY ISSUES IN ALL SITUATIONS AND BE EXPECTED TO DEMONSTRATE SAFE WORKING PRACTICES AT ALL TIMES.

<u>OUTLINE OF CONTENT:</u>	This module contains: <ol style="list-style-type: none">1. Philosophy<ul style="list-style-type: none">- purpose- reasons for regulations- benefits (motivation)Safety Water supply and drainage requirements Electrical requirements Special site requirements Location and securing of equipment Provision for water treatment Foundation requirements2. Tower identification Reading manufacturer's drawings and specifications Drafting Methods of assembly (sealing) Fixing
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3. AS3666-1989, AS1668 Parts 1 and 2
Local authority requirements and codes
Relevant legislation, legal obligations
Development/building approvals
4. Water leak testing
Running test
Manufacturer's commissioning, operation and
maintenance instruction
Water treatment requirements

ON-THE-JOB TRAINING:

For consolidation the material in this module should be linked with and complemented by relevant on-the-job skill practice or other equivalent experience.

PERFORMANCE CRITERIA:

The criteria for each learning outcome should be:

Learning Outcome 1

Assessment: Practical exercise

- Performance:**
- a. Observe safety precautions.
 - b. Lay out reference points for the installation of a tower.
 - c. Make up water and electrical connections.

Learning Outcome 2

Assessment: Practical exercise

- Performance:**
- a. Observe safety precautions
 - b. Safe handling
 - c. Identify assembly methods according to manufacturer's instructions.

Learning Outcome 3

Assessment: Short answer test

- Performance:**
- a. List code requirements.
 - b. List regulation requirements.

Learning Outcome 4

Assessment: Practical test

- Performance:**
- a. Observe safety precautions.
 - b. Inspect cooling tower and make adjustments to meet manufacturer's and code requirements.