	Unit ID: 264
Domain	**METAL FABRICATION-BOILERMAKING**
Title:	**Perform fabrication of advanced cones by means of the radial line method as part of metal fabrication operations**
Level: 4	**Credits: 6**

Purpose

This unit standard specifies the competencies required to perform fabrication of advanced cones using the radial line method as part of metal fabrication operations. It includes laying out cones, calculating positions of holes in flanges, fabricating of cones as well as completion of work and cleaning up. This unit standard is intended for those who work as boilermakers.

Special Notes

1. Entry information

   Prerequisite:
   - *Unit 228* - Apply safety rules and regulations in a metal fabrication work environment or demonstrated equivalent knowledge and skills.

2. To demonstrate competence, at a minimum, evidence is required of laying out and fabricating two cones and two oblique cones for two projects using the radial line development method. These tasks should be performed ensuring correct identification of requirements and finishing of the tasks, correct selection and use of appropriate processes, tools and equipment and completing all work to specification.

3. Material is to include metal pipes and all tubing with wall thickness of 3 millimeters and above.

4. Assessment evidence may be collected from a real workplace or a simulated real workplace or an appropriate simulated realistic environment in which boilermaker operations are carried out.

5. Performance of all elements in this unit standard must comply with manufacturers' specifications and workplace specific requirements.

6. *'Specifications'* refers to any, or all of the following: manufacturers' specifications and recommendations, site and workplace specific requirements.

7. Regulations and legislation relevant to this unit standard include the following:
   - Labour Act 6 of 1992
   - Occupational Health and Safety Regulations No.18, 1997

   and all subsequent amendments.

Quality Assurance Requirements

This unit standard and others within this Subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Lay out cones

Performance Criteria

1.1 Top and front views of cone are laid out.

1.2 Circumference is calculated and radial lines are laid out to develop the cone.

1.3 Radial lines are laid out and stepped off to develop the cone.

Element 2: Calculate the positions of holes in flanges

Performance Criteria

2.1 Pitch Circle Diameter (PCD) and position of holes are calculated to specifications.

2.2 Position of holes in flanges are calculated and marked off.

2.3 The outside diameter is calculated to specifications.

Element 3: Fabricate cones

Performance Criteria

3.1 Appropriate safety clothing and personal protective equipment is used in line with workplace procedures.

3.2 Materials prepared prior to fabrication in line with job plan.

3.3 Jigs and templates are made as required in line with job plan.

3.4 Materials are marked off and dimensions checked in line with job plan.

3.5 Materials are cut and formed using appropriate machinery and tools in line with job plan.

3.6 Tools and equipment are operated during fabrication tasks in line with manufacturers' specifications and workplace procedures.

3.7 Cones are assembled using appropriate methods in line with job plan and specifications.

3.8 Distortion is prevented and controlled applying appropriate techniques in line with job requirements.

3.9 Final job inspection is performed as required in line with job plans.

Element 4: Complete work and clean up

Performance Criteria

4.1 Work is completed and appropriate personnel notified in line with workplace procedures.

4.2 Work area is cleared of waste, cleaned, restored and secured in line with workplace procedures.

4.3 Tools and equipment are cleaned, checked, maintained and stored in line with workplace procedures.

4.4 Work completion details are finalised in line with workplace procedures.

Registration Data

Subfield:	Mechanical Engineering
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Anticipated review:	2012
Body responsible for review:	Namibia Training Authority