



Accredited Provider
The Skills College for Development and Training (Pty)Ltd.

Occupational Certificate: Boilermaker

Qualification ID 93626 – NQF 4: 395 Credits

INTRODUCTION

Purpose:

The purpose of this qualification is to prepare the learner to:

Mark off and fabricate structural steel and other metal stock.

Make or repair metal products and structures which may include pressure vessels and pipes.

> Note: Products include but are not limited to: Manufacture or repaired metal structures, vessels, pipe systems, pressure vessels, heavy duty equipment, sheet metals, road tankers, oilrig stations, mechanical chassis, bins, water tanks, yachts, work boats, high speed vessels, square to rounds, cones, boilers, ducting, water tubes, shell boiler, railway trucks, chutes etc.

A qualified learner will be able to:

Interpreting drawings and develop patterns and templates.

Select, caring for and use/operate trade related hand tools, equipment and machines.

Cut and weld materials and components for fabrication.

Fabricate components and/or structures.

Erect and assemble plate and pipe components and structures.

RATIONALE

Boilermaking, in the context of this qualification, is the designing and fabrication of complex metal components. These components are usually required for initial or replacement purposes within various industry sectors, as well as for maintenance purposes. The main focus is on interpreting complex drawings, the lay out and development of complex metal components, and manipulation of metal (sheet metal, plate and pipe) to produce usable components, as per design requirements.

This qualification is for learners who wish to further their learning and to possibly specialise in fabrication, within the context of boiler making, plating, welding, sheet metal working or auto vehicle body building. This qualification also enables the learner to develop him/herself to be

able to progress to supervisory levels. It is suitable for application in various industries, such as the Mining and Minerals Industry; Chemical; Petro-Chemical; Metal, Engineering and related industries.

The qualification also forms the basis for further learning in the field of engineering fabrication where the learner will be able to specialise in one of the Fabrication or Welding skills areas at NQF Level 5.

Most industries rely on the design and fabrication of complex metal components. Examples of this may be the chemical industry where a wide variety of pipes of various shapes and sizes are utilised. Invariably these pipes are unique to a particular plant and need to be specifically fabricated to be fit-for-purpose. The mining and minerals industry typically has a need for designing and fabricating components that require special welding and fabrication processes to cater for the moving of men and materials. It is evident that each peculiar industry will have specific specialist requirements.

The design of this qualification stems from the collaborative approach to achieve generic type qualifications that allow progression and access, within and between sectors. Certain components of learning within this qualification may have relevance within other engineering learning fields. This will predominantly be in the area of interpreting complex drawings, welding and the lay-out and development of complex metal components.

The qualifying learner will be employable in a broad industry context, and will thus contribute to the economy of the relevant organisation and the country. The learner will benefit from obtaining this qualification due to the fact that industry has a need for persons with the ability to design, develop and fabricate complex industry related equipment.

This qualification focuses on developing the skills and knowledge necessary to perform at the level of competence required.

The learner may also choose to learn towards achievement in other fields, as the learning in the fundamental and core component of this qualification lends itself to lateral as well as vertical articulation. This qualification enables learners who have gained relevant experience in the workplace to gain credits through the Recognition of Prior Learning process.

The qualification will integrate three registered qualifications across NQF Levels 2, 3 and 4 to meet the requirements of a single trade qualification.

TIME PERIOD

The training will be provided over a period of 3 Years

ADMISSION REQUIREMENTS

Entry Requirements:

NQF Level 1 with Mathematics and Science.

QUALIFICATION RULES

UNIT STANDARDS:

Number	Title	NQF LEVEL	CREDITS
651302000-KM-01	Introduction to Boilermaker Trade	Level 4	9
651302000-KM-02	Boilermaker Tools, Equipment, Machines and Materials	Level 4	10
651302000-KM-03	Fabrication and Pipework	Level 4	23
651302000-KM-04	Assembling and Joining	Level 4	14
651302000-KM-05	Cutting and Welding	Level 4	20
651302000-KM-06	Boilermaker's Drawings	Level 4	9
651302000-PM-01	Visualise structures and components and develop templates according to set tolerances and / or standards whilst applying safety measures.	Level 4	18
651302000-PM-02	Maintain and use tools, equipment and machinery.	Level 4	15
651302000-PM-03	Weld and gas cut components required for fabrication of a specific task such as metal pipes, construction and fabricated plate work and conduct visual and mechanical inspections for compliance with legal requirements.	Level 4	28
651302000-PM-04	Accurately manipulate and fabricate profiles and fabricate metal sections using heating and cold bending processes whilst applying safety measures.	Level 4	41
651302000-PM-05	Accurately erect, assemble and repair metal structures whilst applying safety measures.	Level 4	28