



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

## Further Education and Training Certificate: Welding Application and Practice

*Qualification ID 57887 – NQF 4; 158 Credits*

### INTRODUCTION

The purpose of this Qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively in the welding industry and to meet the challenges of such an environment.

This Qualification is the last of a progression, which culminates in the use of a range of complex welding methods. The purpose of this Qualification is to develop learners who, after completion, demonstrate the ability to:

Use and apply a variety of plate and pipe welding processes according to performance standards. Participate in self-directed activity, by complying with welding procedures and maintaining business objectives.

Demonstrate leadership through effective interaction and communication with clients, peers and members of supervisory and management levels.

> Range: Leadership (individual and team); problem solving; technical report writing; exploring options for further learning.

Welding knowledge, technique and reflexive skill play a role in this Qualification.

This Qualification requires that learners apply complex welding practice and theoretical knowledge within the following environments:

Manufacture and Assembly.

Chemical Plant Installations.

Food Processing Plant Installations.

Mining.

Building and Construction.

Qualifying learners will also understand:

Implementation and maintenance of business processes.

Supervision of work units.

The writing of technical reports.

Communication and numeracy skills applicable at this level and appropriate to the work environment.

### Rationale:

This is the third Qualification in a learning pathway for learners who want to follow establish a career in welding. The qualification replaces the Further Education and Training Certificate: Welding Application and Practice (NQF Level 4) and the intermily registered qualification: Further Education and Training Certificate: Chemical Welder (NQF Level 4).

The welding industry operates in a competitive and challenging environment. The finished processes have to respond to a wide variety of exacting customer and consumer requirements. In addition, the industry has to respond to international competition and environmental issues.

Welding application and practice require joining and cutting of materials that meet national and international requirements. Welding generally requires the joining of material that is subjected to considerable stress when in operation and the welding process needs to be consistent and accurate.

This Qualification concludes the series of welding qualifications between NQF Level 2 to NQF Level 4.

There are opportunities for further development and a typical career progression may lead to: Quality Assurance, a career path and greater security of employment within the welding industry.

This Qualification enables learners who have gained relevant experience in the workplace to obtain credits through the RPL process. This Qualification also forms the basis for further development in the engineering sector, and in particular, the fabrication and welding industry in general.

### **Recognition of prior learning:**

This qualification can be obtained in part or wholly through the recognition of prior learning.

The learner should be thoroughly briefed on the mechanism to be used and support and guidance should be provided. Care should be taken that the mechanism used provides the learner with an opportunity to demonstrate competence and is not so onerous as to prevent learners from taking up the RPL option towards gaining a Qualification.

Access to the qualification:

Access to this qualification is open. However, it is preferable that learners have completed the National Certificate in Welding Application and Practice: NQF Level 3..

### **EXIT LEVEL OUTCOMES**

1. Use and apply a variety of plate and pipe welding processes according to performance standards.
2. Participate in self-directed activity, by complying with welding procedures and maintaining business objectives.
3. Demonstrate leadership through effective interaction and communication with clients, peers and members of supervisory and management levels.  
> Range: Leadership (individual and team); problem solving; technical report writing; exploring options for further learning.

### **TIME PERIOD**

This Learnership can be presented over a period of 12 months.

**A SELECTION OF THE FOLLOWING UNIT STANDARDS WILL BE COMPLETED THAT IS CONSTITUENT TO 158 CREDITS:**

**UNIT STANDARDS:**

	<b>ID</b>	<b>UNIT STANDARD TITLE</b>	<b>PRE-2009 NQF LEVEL</b>	<b>NQF LEVEL</b>	<b>CREDITS</b>
Core	<a href="#">243049</a>	Weld carbon steel pipe using the cored-wire welding process in all positions	Level 4	NQF Level 04	10
Core	<a href="#">243054</a>	Weld carbon steel pipe, using the gas tungsten arc welding process in all positions	Level 4	NQF Level 04	20
Core	<a href="#">243062</a>	Weld carbon steel pipe, using the shielded metal arc welding process in all positions	Level 4	NQF Level 04	20
Core	<a href="#">243059</a>	Weld workpieces in the stainless steel material group, using the gas metal arc welding process in all positions	Level 4	NQF Level 04	10
Core	<a href="#">243089</a>	Weld workpieces within the aluminium material group, using the gas metal arc welding process in all positions	Level 4	NQF Level 04	10
Core	<a href="#">243079</a>	Weld workpieces within the aluminium material group, using the gas tungsten arc welding process in all positions.	Level 4	NQF Level 04	10
Core	<a href="#">243057</a>	Weld workpieces within the stainless steel material group, using the gas tungsten arc welding process in all positions	Level 4	NQF Level 04	10
Fundamental	<a href="#">119472</a>	Accommodate audience and context needs in oral/signed communication	Level 3	NQF Level 03	5
Fundamental	<a href="#">119458</a>	Analyse and respond to a variety of literary texts	Level 3	NQF Level 03	5
Fundamental	<a href="#">119466</a>	Interpret a variety of literary texts	Level 3	NQF Level 03	5
Fundamental	<a href="#">119457</a>	Interpret and use information from texts	Level 3	NQF Level 03	5
Fundamental	<a href="#">9015</a>	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	NQF Level 04	6
Fundamental	<a href="#">119462</a>	Engage in sustained oral/signed communication and evaluate spoken/signed texts	Level 4	NQF Level 04	5
Fundamental	<a href="#">119469</a>	Read/view, analyse and respond to a variety of texts	Level 4	NQF Level 04	5
Fundamental	<a href="#">9016</a>	Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 4	NQF Level 04	4
Fundamental	<a href="#">119471</a>	Use language and communication in occupational learning programmes	Level 4	NQF Level 04	5
Fundamental	<a href="#">7468</a>	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	NQF Level 04	6
Fundamental	<a href="#">119459</a>	Write/present/sign for a wide range of contexts	Level 4	NQF Level 04	5
Elective	<a href="#">119235</a>	Conduct dye penetrant testing	Level 3	NQF Level 03	4
Elective	<a href="#">119253</a>	Conduct magnetic particle testing	Level 3	NQF Level 03	4
Elective	<a href="#">119245</a>	Conduct eddy current testing	Level 4	NQF Level 04	8
Elective	<a href="#">119232</a>	Conduct magnetic particle inspection	Level 4	NQF Level 04	6

Elective	<a href="#">119239</a>	Conduct radiographic testing	Level 4	NQF Level 04	8
Elective	<a href="#">119243</a>	Conduct ultrasonic testing	Level 4	NQF Level 04	8
Elective	<a href="#">13254</a>	Contribute to the implementation and maintenance of business processes	Level 4	NQF Level 04	10
Elective	<a href="#">14698</a>	Cut materials using plasma cutting	Level 4	NQF Level 04	4
Elective	<a href="#">114194</a>	Demonstrate understanding of regulations codes and drawing office practices for structural steel detailing	Level 4	NQF Level 04	7
Elective	<a href="#">14473</a>	Develop and produce computer aided drawings	Level 4	NQF Level 04	4
Elective	<a href="#">14497</a>	Identify, interpret and produce working structural steel drawings	Level 4	NQF Level 04	8
Elective	<a href="#">119237</a>	Perform and evaluate liquid penetrant testing	Level 4	NQF Level 04	6
Elective	<a href="#">243070</a>	Programme, use and maintain an industrial robot system	Level 4	NQF Level 04	10
Elective	<a href="#">10981</a>	Supervise work unit to achieve work unit objectives (individuals and teams)	Level 4	NQF Level 04	12
Elective	<a href="#">244089</a>	Understand applications of Physical Chemistry in a processing environment	Level 4	NQF Level 04	6
Elective	<a href="#">243065</a>	Weld carbon steel pipe using the gas metal arc welding process in all positions	Level 4	NQF Level 04	20
Elective	<a href="#">243088</a>	Weld carbon steel pipe, with combination welding processes using the gas tungsten arc welding and gas metal arc welding, in all positions	Level 4	NQF Level 04	8
Elective	<a href="#">243085</a>	Weld carbon steel workpieces, using the shielded metal arc and gas tungsten arc combination welding processes, in all positions	Level 4	NQF Level 04	8
Elective	<a href="#">14721</a>	Weld pipe with oxy-acetylene gas process	Level 4	NQF Level 04	20
Elective	<a href="#">243083</a>	Weld pipe within the aluminium material group, using the gas metal arc welding process in all positions	Level 4	NQF Level 04	20
Elective	<a href="#">243087</a>	Weld pipe within the aluminium material group, using the gas tungsten arc welding process in all positions	Level 4	NQF Level 04	20
Elective	<a href="#">243060</a>	Weld pipe within the stainless steel material group, using the gas metal arc welding process in all positions	Level 4	NQF Level 04	20
Elective	<a href="#">243050</a>	Weld pipe within the stainless steel material group, using the gas tungsten arc welding process in all positions	Level 4	NQF Level 04	20
Elective	<a href="#">243051</a>	Weld steel workpieces, using the plasma arc welding process in all positions	Level 4	NQF Level 04	20
Elective	<a href="#">119250</a>	Conduct non-destructive eddy current testing	Level 5	Level TBA: Pre-2009 was L5	12
Elective	<a href="#">119247</a>	Conduct non-destructive radiographic tests	Level 5	Level TBA: Pre-2009 was L5	12
Elective	<a href="#">119252</a>	Conduct non-destructive ultrasonic testing	Level 5	Level TBA: Pre-2009 was L5	12