

SKILLS PROGRAMME DOCUMENT

Skills Programme Title	Hot- and Cold-Water Systems Installer			
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NQF Level	4	Credits	93	Duration in days	116 Days
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Skills Programme ID Number	SP-211004
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Skills Programme Status	Approved	Start Date	End Date
		25/10/2021	25/10/2026

Last date for enrolment	25/10/2027	Last date for achievement	25/10/2030
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SKILLS PROGRAMME DETAILS

Title	Hot- and Cold-Water Systems Installer
Sub Title	91782: Occupational Certificate: Plumber
NQF Level	4
Duration	116 Days
Credits	93
Quality Assuring Body	Quality Council for Trades and Occupations (QCTO)
Skills Rationale	<p>As a result of past legacies, many practitioners within the building construction sector were denied career advancement and possible recognition as qualified tradesmen. This was as a direct result of poor educational opportunities at some schools, leading to a lack of entry to formal training institutions. This Skills Programme which is based on Knowledge and Application Components/Unit Standards allows learners to reach their full potential of advancement without formal education becoming an impassable barrier and in addition, allow for the recognition of prior learning.</p> <p>This Skills Programme represents a planned combination of learning outcomes with a defined purpose in that they consist of the essential embedded knowledge and applied competence required by the plumbing trade of those learners who seek to be recognised by the trade for formal certification as Hot & Cold-Water Systems Installer.</p> <p>There is a high demand for learners who are able to apply their skills within the parameters of the legislative framework regulating the plumbing trade and formal recognition at this level is beneficial to learners, the industry and society in the order of sustainable employment, increased productivity levels and the health and safety of communities.</p> <p>This Skills Programme is accessible to learners who are employed within the Construction Industry, new entrants into the world of work and persons who are unemployed. There is no gender, ethnic or other bias towards learners who wish to enter this qualification.</p> <p>Learners who wish to enter this Skills Programme are assumed to have the equivalent competencies reflected as Minimum Entry Requirements and Recognition of Prior Learning in the individual</p>

	<p>learner. This Skills Programme may be achieved through RPL and a four (4) Month Skills Training. To successfully complete this skills programme, the learner must be able to complete all Knowledge and Application Components (competent in sets of skills) linked to notional hours and will be completed in this skills programme over a four (4) month period.</p> <p>The Skills Programme is intended to achieve:</p> <ul style="list-style-type: none"> ▪ Encouraging individual entrepreneurship and job creation. ▪ Supporting, redressing and providing access to empowerment opportunities. ▪ Having access to education and training that enhance opportunities and increases young people’s chances of success in further vocational training and sustainable employment. • Identify and solve problems with practical mathematical applications. • Communicate in verbal or written form with peers, members of supervisory/management levels and others. • Apply understanding of the functioning of Hot and Cold-Water Systems to install, test and maintain them in a built environment. • Apply fault finding techniques to diagnose, install & repair installed plumbing systems.
<p>Related registered qualification/s</p>	<p>642601: Plumber</p> <p>SAQA ID: 97782; Occupational Certificate: Plumber; NQF Level; 360</p>
<p>Purpose</p>	<p>Qualifying learners will be able to integrate their knowledge, understanding and competencies related to occupational health and safety, National Building Regulations and industry codes of practice to perform a range of hot and cold-water systems’ activities.</p> <p>The achievement of this qualification will contribute to the development of those learners who have not had the benefit of formal education and training in that it provides formal recognition for knowledge and skills acquired through extensive workplace experience. Learners who have achieved this</p>

qualification will be able to access further learning opportunities and enhance their prospects for sustainable employment within the build environment industry. For new entrants, this Qualification describes the learning outcomes required to participate effectively in a structured work environment. Employers will be able to use this Qualification as the source for identifying skills needs and appropriate training interventions. Providers of education and training will be able to use this Qualification in the design and development of appropriate outcomes-based learning materials, assessment guides and related assessment tools. Completion of this qualification relates to the Organising Framework for Occupations (OFO) in that it reflects the competencies of occupational designation 334101 Plumber (General).

Qualifying learners will be able to:

- Identify and solve problems with practical mathematical applications.
- Communicate in verbal or written form with peers, members of supervisory/management levels and others.
- Apply understanding of the functioning of plumbing systems to install, test and maintain them in a built environment.
- Apply fault finding techniques to diagnose, install and repair hot and cold-water systems.

Content	<p><u>Knowledge component</u></p> <p>Topic</p> <ul style="list-style-type: none"> • Health, Safety, Quality and Legislation, NQF Level 3, 3 Credits • Tools, Equipment, Components and Site Practice, NQF Level 3, 3 Credits • Sanitary ware, NQF Level 4, 4 Credits 	<p><u>Application component</u></p> <ul style="list-style-type: none"> • Install, maintain and test above-ground soil waste and vent systems and sanitary ware appliances, NQF Level 4, 30 Credits • Install, maintain and test cold and hot water systems, NQF Level 4, 35 Credits
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	<ul style="list-style-type: none"> Hot water and Cold-water systems, NQF Level 4, 18 Credits 	
Minimum entry requirements	Learners should have acquired the competencies of NQF Level 3 in the Further Education and Training (FET) Band, especially numeracy and literacy competencies, prior to embarking on learning towards this Skills Programme.	
Exit Level Outcomes	<ul style="list-style-type: none"> The ability to install, maintain, test and repair above-ground soil waste and vent systems and sanitary ware appliances. The ability to install, maintain, test and repair below-ground drainage systems and performing basic building work. The ability to install, maintain, test and repair cold water systems and hot water systems. 	
Assessment	<ul style="list-style-type: none"> <u>Continuous Assessment</u> <ul style="list-style-type: none"> Identify and solve problems with practical mathematical applications. Communicate in verbal or written form with peers, members of supervisory/management levels and other relevant role-players. Apply understanding of the functioning of plumbing systems to install, test and maintain them in a built environment. Apply fault - finding techniques to diagnose, install and repair cold water systems. Plumbing problems are identified utilising mathematical principles to determine requirements. Mathematical principles and techniques are used to solve problems related to personal and business contexts. Range: General and personal finance, statistics and probability, other practical applications such as monitoring, building. Mathematical principles and techniques are applied while performing tasks in the plumbing context in respect of calculations. Range: Plumbing calculations, geometric shapes applied to design of structures, mass, volume, temperature, pressure. Verbal communication is used in the interaction with other role players in the plumbing process to determine and understand the extent of plumbing requirements and implement plumbing applications and giving and getting feedback. Written communication is used in order to understand, evaluate and report on plumbing problems. Technical reading skills are applied in order to understand plumbing regulations and task specifications. 	

	<ul style="list-style-type: none"> • Technical writing skills are applied in order to record plumbing activities and pass instructions. <p style="text-align: center;"><u>Supervised Assessment</u></p> <ul style="list-style-type: none"> • A working knowledge of the functioning of plumbing systems is demonstrated in accordance with Regulations. • Plumbing systems are installed in accordance with South African National Standards (SANS) standards and codes and manufacturers specifications. • Plumbing systems are tested in accordance with SANS standards and codes and manufacturers specifications. • Plumbing systems are maintained in accordance with SANS standards and codes and manufacturers specifications. • Fault finding techniques are applied to establish the cause of plumbing systems not functioning. • Building drawings are used to understand plumbing systems and trace the causes of problems. • The cause of the problem is identified in order for the appropriate remedies to be applied or recommended. • Inspection and testing is conducted to ensure that the plumbing systems have been restored and the cause of the problem rectified. • Plumbing tools and equipment are maintained in accordance with the relevant maintenance policy. • Work is completed in accordance with the relevant occupational health and safety, environmental, quality assurance and other requirements. • Cooperation with fellow workers and other personnel (teamwork) is effective and constructive to ensure the achievement of work objectives. • Work is planned, scheduled and evaluated in accordance with the relevant procedures and standards.
RPL	<p>Learners who wish to enter this Skills Programme are assumed to have the equivalent competencies reflected as Minimum Entry Requirements and Recognition of Prior Learning in the individual learner. This Skills Programme may be achieved through RPL and a four (4) Month Skills Training. To successfully complete this skills programme, the learner must be able to complete all Knowledge and Application Components (competent in sets of skills) linked to notional hours and will be completed in this skills programme over a four (4) month period.</p>
Work Opportunities and further learning	<p>The qualifying learner will be able to be employed or employer - by starting a Small Plumbing Business.</p> <p>Further Learning: After completion of the Skills Programme Qualification and having met the minimum entry requirements for the admission to a cognate occupation on the OQSF or similar Qualification on the GFETQSF.</p>
Skills Development Provider Accreditation Requirements	<p>Physical Requirements:</p> <p>a) Demonstrate Access to:</p> <ul style="list-style-type: none"> • Training/Facilitation Resources

- Assessment tools/Instruments for Formative and Summative Assessments
- **Plumbing Requirements:**
 - **Hand Tools** per learner- spirit level, pipe cutter, screwdriver set, club hammer, carpenter's pencil, hacksaw, basin spanner, pipe wrench, pump plier & thread tape
 - **Personal Protective Equipment (PPE)**, safety goggles, safety shoes, gloves, hard hat & dusk mask
 - **Power Tools-** electric hammer drill, angle grinder & jig saw
 - **Drainage equipment** per learner per module to task requirements
 - **Facilities-** area conducive for the installation of Poly Vinyl Chloride (PVC) & Copper piping fixed vertically, horizontally & suspended and installation of all types of sanitary ware.

b) Human Resource Requirements:

- Recommended facilitator/Learner at a recommended ratio 1:30
- Workshop assistant at a recommended learner ratio: 1:4

c) Legal and Safety Requirements:

- Compliant with OHS Act requirements.
- On-site SHE Rep, First Aid box, danger tape, safety signs & Site Safety File.
- Area conducive to the installation of hot and cold-water pipes, underground, in walls and in roofs.

Human Resource Requirements:

- Facilitator/learner ratio 1 to 12.
- Workshop assistant/learner ratio 1 to 4.

Legal and Safety Requirements:

- Compliant with OHS ACT requirements