



**NATIONAL COMPETENCY STANDARDS  
FOR  
PLUMBER  
(NC2 & NC3)**

**Department of Occupational Standards  
Ministry of Labour and Human Resources  
Thimphu Bhutan  
(July 2020)**



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First Publication 2009

First Revision 2012

Second Revision 2016

Third revision 2020

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## Foreword

The Department of Occupational Standards of the Ministry of Labour and Human Resources is pleased to present the National Competency Standards (NCSs) for Plumber. The standards represent the fruits of hard work and invaluable experiences gained by the department since its establishment in the latter half of 2003. The main aim of developing NCS is to set up a well-defined nationally recognized Vocational Qualifications System that will help set a benchmark for the Technical Vocational Education and Training (TVET) System in our country aligned to international best practices.

NCS is one of the base pillars in the Bhutan Vocational Qualifications Framework (BVQF) and is the first step in its implementation. The NCS are developed and revised to ensure that employees or vocational graduates possess and acquire the desired competencies required by industries and employers. In order to ensure this close match in supply and demand of competencies, NCS have been developed and revised in close consultation and partnership with industry experts and validated by the Technical Advisory Committees of the concerned economic sectors.

A vocational education and training system based on NCS shall ensure that delivered training is of a high quality and relevant to the needs of the labour market. As a result, future TVET graduates will be better equipped to meet the need and expectations of industries and employers. This positive impact on the employability of TVET graduates will enhance the reputation of vocational education and training and make it attractive to school leavers.

I gratefully acknowledge collaboration and the valuable contributions made by experts from industries during the consultation and validation processes of the standards. I look forward for continued engagement and participation of the industry and employers in the development of a quality assured demand driven TVET system and to build competent and productive national workforce that will contribute to the continued socio-economic progress of our country.

Director  
Department of Occupational Standards  
Ministry of Labour and Human Resource

## Acknowledgement

### NATIONAL COMPETENCY STANDARDS FOR PLUMBER

**Validation date** : 20/07/2020

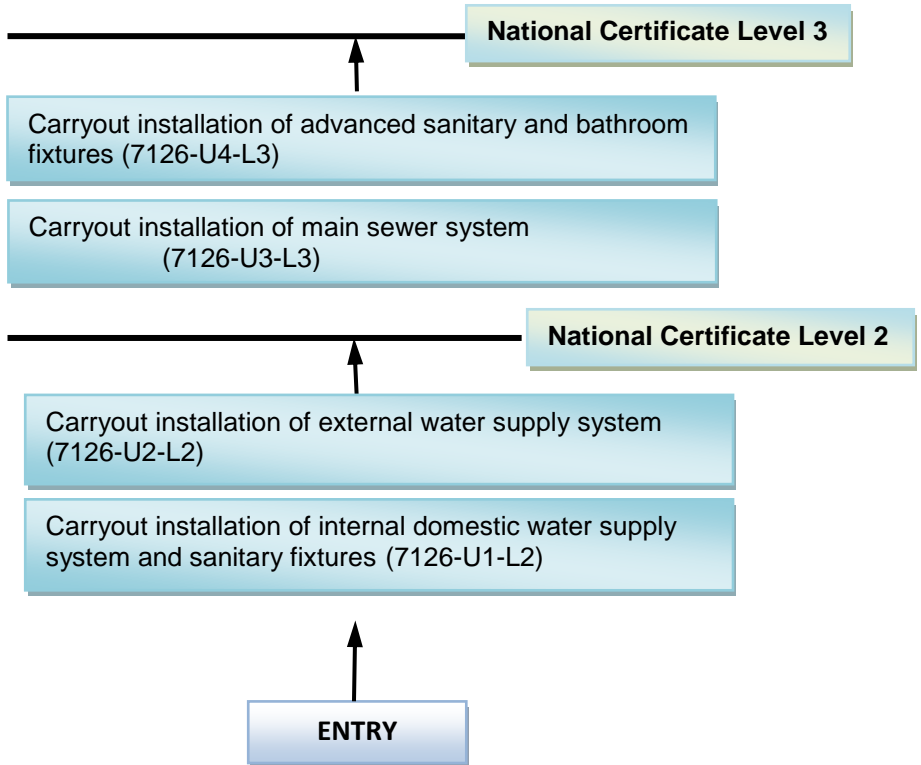
**Endorsement date:** 20/07/2020

**Date of Review** : 20/07/2023 (Max. 3 years)

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## Packaging of Qualifications for Plumber



## OVERVIEW OF UNIT COMPETENCIES

SI.	UNIT TITLE	ELEMENTS OF COMPETENCE
1.	Carryout installation of internal domestic water supply system and sanitary fixtures	<ol style="list-style-type: none"> <li>1. Install water pipes and Chrome Plated(CP) fittings</li> <li>2. Lay soil and waste pipe and fittings</li> <li>3. Install sanitary fixtures and fitting</li> <li>4. Install water based floor radiant heating system</li> <li>5. Install water tanks and pumps</li> <li>6. Repair plumbing system</li> </ol>
2.	Carryout installation of external water supply system	<ol style="list-style-type: none"> <li>1. Lay external pipelines and valves</li> <li>2. Repair plumbing system</li> <li>3. Conduct operation and maintenance of water intake and treatment plant</li> </ol>
3.	Carryout installation of main sewer system	<ol style="list-style-type: none"> <li>1. Install sewer lines</li> <li>2. Install chambers and manholes</li> <li>3. Conduct operation and maintenance of sewerage treatment plant</li> </ol>
4.	Carryout installation of advanced sanitary and bathroom fixtures	<ol style="list-style-type: none"> <li>1. Install advanced sanitary fixtures</li> <li>2. Install cubicle shower</li> <li>3. Install advanced sanitary fixtures with sensors</li> </ol>





**UNIT TITLE** : Carryout installation of internal domestic water supply system and sanitary fixtures

**DESCRIPTOR** : This unit covers the competencies required to carry out installation of domestic water supply system and sanitary fixtures following health and safety procedures

**CODE** : **7126 - U1- L2**

ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Install water pipes and Chrome Plated(CP) fittings	<ul style="list-style-type: none"><li>1.1 Interpret drawing and specifications as per the job requirement.</li><li>1.2 Select and use <b>tools and equipment</b> as per the job requirement.</li><li>1.3 Select and use required <b>PPE</b> as per the job requirement.</li><li>1.4 Select <b>materials</b> as per the job requirement following standard procedures</li><li>1.5 Perform <b>pipe joint</b> as per the job requirement following standard procedures</li><li>1.6 Lay pipes and fittings as per the job requirement following standard procedures</li><li>1.7 Perform installation of <b>CP fittings</b> as per the job requirement following standard procedures</li><li>1.8 Perform test of the installation following standard procedures</li></ul>
2. Lay soil and waste pipe and fittings	<ul style="list-style-type: none"><li>2.1 Interpret drawing and specifications as per the job requirement.</li><li>2.2 Select and use <b>tools and equipment</b> as per the job requirement.</li><li>2.3 Select and use required <b>PPE</b> as per the job requirement</li><li>2.4 Select materials as per the job requirement following standard procedures</li></ul>

	<p>2.5 Perform <b>soil and waste pipe joint</b> as per the job requirement following standard procedures</p> <p>2.6 Lay soil and waste pipes and <b>fittings</b> as per the job requirement following standard procedures</p>
3. Install sanitary fixtures	<p>3.1 Interpret drawing and specifications as per the job requirement.</p> <p>3.2 Select and use tools and equipment as per the job requirement.</p> <p>3.3 Select <b>materials</b> as per the job requirement following standard procedures</p> <p>3.4 Perform installation of sanitary fixtures as per the job requirement following standard procedures</p> <p>3.5 Perform test of installation following standard procedures</p>
4. Install water based floor radiant heating system	<p>4.1 Interpret drawing and specifications as per the job requirement.</p> <p>4.2 Select and use <b>tools and equipment</b> as per the job requirement.</p> <p>4.3 Select <b>materials</b> as per the job requirement following standard procedures</p> <p>4.4 Install hot water pressure pumps following standard procedures</p> <p>4.5 Perform installation of water based floor radiant heating system following standard procedures</p> <p>4.6 Perform test of installation following standard procedures</p>
5. Install water tanks and pumps	<p>5.1 Interpret drawing and specifications as per the job requirement.</p> <p>5.2 Select and use required tools and equipment according to job requirements</p> <p>5.3 Select and use required PPE as per the job requirement.</p> <p>5.4 Select the location for installation of water tank as per the job requirement.</p>

	<p>5.5 Prepare the base as per the job requirement following standard procedures</p> <p>5.6 Fix the tank components as per the job requirement following standard procedures</p> <p>5.7 Perform installation of <b>water tank</b> as per the drawing following standard procedures.</p> <p>5.8 Select the size of <b>water pump</b> as per the job requirement</p> <p>5.9 Perform installation of water pump as per the specifications and manufacturers' manual following standard procedures</p> <p>5.10 Conduct functionality test of the installation as per the standard procedures.</p>
<p>6. Repair plumbing system</p>	<p>6.1 Diagnose the <b>faults</b> following standard procedures</p> <p>6.2 Select and use required tools and equipment according to job requirements</p> <p>6.3 Select and use required PPE as per the job requirement.</p> <p>6.4 Select materials as per the job requirement following standard procedures</p> <p>6.5 Perform <b>maintenance</b> (replace and repair) of plumbing system following standard procedures</p> <p>6.6 Conduct functionality test of repaired plumbing system as per the standard procedures.</p>

### RANGE STATEMENT

#### Materials may include but not limited to:

- G.I pipe
- CPVC
- PPR
- Pex pipe
- HDPE

**Tools and Equipment may include but not limited to:**

- Measuring tape
- Monkey wrench
- Pipe wrench
- Chain wrench
- Reamer
- Blow lamp
- Heating plate
- Chalk
- Pipe
- Pressure testing equipment
- Cutter or hacksaw
- Hammer
- Spirit level or water level
- Drilling machine
- Pipe vice
- Adjustable wrench
- Plumb bob
- Die set or ratchet
- Chisel
- Files
- Screw driver

**PPE may include but not limited to:**

- Gloves
- Helmet
- Safety shoes
- Goggles
- Ear muff
- Dust mask
- Safety belt

**Pipe Joint may include but not limited to:**

- Cutting
- Threading
- Reaming
- Jointing

**CP fittings may include but not limited to:**

- Diverter
- Concealed stop cock
- Wall mixture
- Sink mixture
- Angle valve
- Shower head

<b>Soil and Waste pipe joint may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Cutting</li> <li>• Reaming</li> </ul>	<ul style="list-style-type: none"> <li>• Jointing</li> </ul>
<b>Fittings may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Multi-floor-trap</li> <li>• bottle trap</li> <li>• Nahani Trap</li> </ul>	<ul style="list-style-type: none"> <li>• Bend</li> <li>• Tee</li> <li>• Reducer</li> </ul>
<b>Materials for sanitary fixtures may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Wash basin</li> <li>• WC pan</li> <li>• Urinal</li> <li>• Bathtub</li> <li>• Geyser</li> <li>• Fire water sprinkle</li> </ul>	<ul style="list-style-type: none"> <li>• Sink</li> <li>• Bidet</li> <li>• P-trap</li> <li>• S-Trap</li> <li>• Q-Trap</li> </ul>
<b>Material for heating system may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Stainless steel</li> <li>• CPVC</li> </ul>	<ul style="list-style-type: none"> <li>• Pex Pipe</li> <li>• PPR</li> </ul>
<b>Water tank may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• SS tank</li> <li>• PVC</li> </ul>	<ul style="list-style-type: none"> <li>• Zincalume</li> </ul>
<b>Water pump may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Submersible</li> <li>• Rotary</li> </ul>	<ul style="list-style-type: none"> <li>• Centrifugal</li> </ul>

<b>Faults may include but not limited to:</b>	
<ul style="list-style-type: none"> <li>• Leakage</li> </ul>	<ul style="list-style-type: none"> <li>• Blockage</li> </ul>
<b>Critical aspects:</b>	
<ul style="list-style-type: none"> <li>• Demonstrate compliance with safety regulations applicable to work site operations</li> <li>• Carryout installation of internal domestic water supply system and sanitary fixtures following safety procedures</li> </ul>	

<b>UNDERPINNING KNOWLEDGE</b>	<b>UNDERPINNING SKILLS</b>
<ul style="list-style-type: none"> <li>• Ethics and Integrity</li> <li>• Estimation and costing</li> <li>• Pipe Sizes</li> <li>• Plumbing code of practice</li> <li>• Type of water distribution system</li> <li>• Pipe fitting and valve catalogues</li> <li>• Types of valves and pumps</li> <li>• Causes and remedies of maintenance</li> <li>• Types of tools and equipment</li> <li>• Basic technical calculations</li> <li>• Basic hydraulics (flow of water through pipes)</li> <li>• Different types of water tanks</li> <li>• Water based radiant floor heating system</li> <li>• Jointing compounds</li> <li>• Plumbing signs and symbols</li> </ul>	<ul style="list-style-type: none"> <li>• Team work</li> <li>• Communication skills</li> <li>• Planning</li> <li>• House keeping</li> <li>• Time management</li> <li>• Negotiation</li> </ul>

**UNIT TITLE :** Carryout installation of external water supply system

**DESCRIPTOR :** This unit covers the competencies required to carry out installation of external water supply system following standard procedures

**CODE :** 7126- U2-L2

ELEMENTS OF COMPETENC	PERFORMANCE CRITERIA
1. Laying of external pipelines and valves	1.1 Interpret drawing and specifications as per the job requirement. 1.2 Select and use required <b>tools and equipment</b> as per the job requirements 1.3 Select and use required <b>PPE</b> as per the job requirements 1.4 Prepare trenches and bedding to the required sizes as per the job requirement following standard procedures. 1.5 Lay pipes and fittings for main and distribution lines as per the job specification and design layout following standard procedures. 1.6 Join the pipes and fittings as per the standard procedures. 1.7 Perform connection to reservoir and break pressure tank as per the standard procedures. 1.8 Backfill the trenches as per the job requirement following standard procedures. 1.9 Fix <b>valves</b> and water meter as per the standard procedures. 1.10 Conduct test and take necessary action as per the job requirement following standard procedures.
2. Repair plumbing	2.1 Diagnose <b>faults</b> (leakage, blockage) as per

<p>system</p>	<p>the job requirement following standard procedures.</p> <p>2.2 Repair the defective pipe and fittings as per the job requirement following standard procedures.</p> <p>2.3 Replace the defective pipe and fittings as per the job requirement following standard procedures.</p> <p>2.4 Conduct functional test of the repaired plumbing system as per the job requirement</p>
<p>3. Conduct operation and maintenance of water intake and treatment plant</p>	<p>3.1 Interpret drawing and specifications as per the job requirement.</p> <p>3.2 Select and use <b>tools and equipment</b> as per the job requirements</p> <p>3.3 Select and use required <b>PPE</b> as per the job requirements</p> <p>3.4 Clean and remove <b>foreign materials</b> from the treatment plant as per the job requirement following standard procedures</p> <p>3.5 Back wash the water filter as per the treatment plant manual following standard procedures.</p> <p>3.6 Service <b>water treatment units</b> as per the job requirement following standard procedures.</p> <p>3.7 Perform water quality test and add alum following standard procedures</p> <p>3.8 Disinfect the water as per the treatment plant manual</p> <p>3.9 Record the data and regulate the raw water flow and treated water flow as per the standard procedures</p>



## RANGE STATEMENT

### Valves may include but not limited to:

- Gate valve
- Glove valve
- Non-return valve
- Butterfly valve
- Pressure release valve
- Scour valve
- Float valve

### Tools and Equipment may include but not limited to:

- Measuring tape
- Monkey wrench
- Pipe wrench
- Chain wrench
- Reamer
- Blow lamp
- Heating plate and chalk
- Pipe cutter or hacksaw
- Hammer
- Spirit level
- Dumpy level
- Electric drill
- Pipe vice
- Adjustable wrench
- Plumb bob
- Die set
- Chisel
- File
- Screw driver

### PPE may include but not limited to:

- Gloves
- Helmet
- Safety shoes
- Goggles
- Ear muff
- Dust mask
- Safety belt

### Foreign materials may include but not limited to:

- Leaves
- Sticks
- Debris

**Water treatment units may include but not limited to:**

- Mixing chamber
- Sedimentation tank
- Filter tank
- Coagulation tank

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"><li>• Ethics and Integrity</li><li>• V-notch calculation</li><li>• Type of water distribution system</li><li>• Pipe fitting and valves catalogues</li><li>• Working principle of water treatment plant</li><li>• Types of water treatment solutions</li><li>• Ratio of chemicals to water</li></ul>	<ul style="list-style-type: none"><li>• Team work</li><li>• Communication skills</li><li>• Planning</li><li>• Problem solving</li></ul>

Carryout installation of main sewer system

**UNIT TITLE** :

**DESCRIPTOR** : This unit covers the competencies required to carry out installation of main sewer system following standard procedures

**CODE** : **7126-U3- L3**

<b>ELEMENTS OF COMPETENCE</b>	<b>PERFORMANCE CRITERIA</b>
1. Install sewer lines	1.1 Interpret drawing and specifications as per the job requirement. 1.2 Select and use tools and equipment as per the job requirements 1.3 Select and use required <b>PPE</b> as per the job requirements 1.4 Select <b>materials</b> as per the job requirement following standard procedures 1.5 Perform installation of sewer lines following standard procedures 1.6 Perform maintenance of sewer lines as per the job requirement following standard procedures 1.7 Perform test of sewer lines following standard procedures
2. Install chamber and manholes	2.1 Interpret drawing and specifications as per the job requirement. 2.2 Select and use <b>tools and equipment</b> as per the job requirements 2.3 Select and use required <b>PPE</b> as per the job requirements 2.4 Select <b>materials</b> as per the job requirement following standard procedures 2.5 Perform installation of chambers and manholes

	<p>following standard procedures</p> <p>2.6 Perform test chambers and manholes following standard procedures</p>
<p>3. Conduct operation and maintenance of sewerage treatment plant</p>	<p>3.1 Select and use <b>tools and equipment</b> as per the job requirements</p> <p>2.1 Select and use required <b>PPE</b> as per the job requirements</p> <p>2.2 Perform operation of sewerage treatment plant following standard procedures</p> <p>2.3 Perform maintenance of sewerage treatment plant as per the job requirement following standard procedures</p>

## **RANGE STATEMENT**

### **Sewer Materials may include but not limited to:**

- Pipes and fittings
- HDPE
- PVC
- Concrete pipe

### **Tools and Equipment may include but not limited to:**

- Measuring tape
- Monkey wrench
- Pipe wrench
- Chain wrench
- Reamer
- Blow lamp
- Heating plate
- Chalk
- Pipe
- Cutter or hacksaw
- Hammer
- Spirit level or water level
- Drilling machine
- Pipe vice
- Adjustable wrench
- Plumb bob
- Die set or ratchet
- Chisel
- Files
- Screw driver

### **PPE may include but not limited to:**

- Gloves
- Helmet
- Safety shoes
- Goggles
- Ear muff
- Dust mask
- Safety belt

**Chambers and manhole materials may include but not limited to:**

- PVC chamber
- Pre-cast RCC
- Hume Pipes
- Cast Iron

**Critical Aspects:**

- Demonstrate compliance with safety regulations applicable to work site operations
- Carryout installation of main sewer system following standard procedures

**UNDERPINNING KNOWLEDGE**

- Ethics and Integrity
- Types of sewerage treatment plant
- Functions of septic tank
- Types of septic tank
- Functions of Soak pit
- Functions of chambers and manholes
- Benching of chambers and manholes
- Importance of gradient in sewer line
- Importance of bedding and back filling
- Working principles of sewerage treatment plant

**UNDERPINNING SKILLS**

- Communication skills
- Team work
- Planning
- Problem Solving
- Time management

**UNIT TITLE** : Carryout installation of advanced sanitary and bathroom fixtures

**DESCRIPTOR** : This unit covers the competencies required to carry out installation of advanced sanitary and bathroom fixtures following safety procedures at all times

**CODE** : **7126- U4-L3**

<b>ELEMENTS OF COMPETENCE</b>	<b>PERFORMANCE CRITERIA</b>
1. Install advanced sanitary fixtures	1.1 Interpret drawing and specifications as per the job requirement. 1.2 Select and use required tools and equipment as per the job requirements 1.3 Select and use required PPE as per the job requirements 1.4 Perform installation of Jacuzzi as per the standard procedures 1.5 Perform installation of bathtub as per the standard procedures
2. Install cubicle shower	2.1 Interpret drawing and specifications as per the job requirement. 2.2 Select and use required tools and equipment as per the job requirements 2.3 Select and use required PPE as per the job requirements 2.4 Perform installation of cubicle shower as per the standard procedures

<p>3. Install advanced sanitary fixtures with sensor</p>	<p>3.1 Interpret drawing and specifications as per the job requirement.</p> <p>3.2 Select and use required tools and equipment as per the job requirements</p> <p>3.3 Select and use required PPE as per the job requirement</p> <p>3.4 Perform installation of advanced <b>sanitary fixtures with sensors</b> as per the standard procedures</p>
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RANGE STATEMENT	
<p><b>Sanitary fixtures with sensors may include but not limited to:</b></p> <ul style="list-style-type: none"> <li>• Urinal</li> <li>• WC</li> <li>• Wash basin</li> </ul>	
<p><b>Tools and Equipment may include but not limited to:</b></p> <ul style="list-style-type: none"> <li>• Measuring tape</li> <li>• Monkey wrench</li> <li>• Pipe wrench</li> <li>• Chain wrench</li> <li>• Reamer</li> <li>• Blow lamp</li> <li>• Heating plate and chalk</li> <li>• Spirit level</li> <li>• Dumpy level</li> <li>• Electric drill</li> <li>• Pipe vice</li> <li>• Adjustable wrench</li> <li>• Plumb bob</li> <li>• Die set</li> </ul>	



<ul style="list-style-type: none"> <li>• Pipe cutter or hacksaw</li> <li>• Hammer</li> </ul>	<ul style="list-style-type: none"> <li>• Chisel</li> <li>• File</li> <li>• Screw driver</li> </ul>
<p><b>PPE may include but not limited to:</b></p> <ul style="list-style-type: none"> <li>• Gloves</li> <li>• Helmet</li> <li>• Safety shoes</li> <li>• Goggles</li> <li>• Ear muff</li> <li>• Dust mask</li> <li>• Safety belt</li> </ul>	
<p><b>Critical Aspects:</b></p> <ul style="list-style-type: none"> <li>• Demonstrate compliance with safety regulations applicable to work site operations</li> <li>• Carryout installation of advanced sanitary and bathroom fixtures as per the standard procedures</li> </ul>	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> <li>• Ethics and Integrity</li> <li>• Types of sensor</li> <li>• Interpretation of catalogues/manual of advanced sanitary fixtures</li> </ul>	<ul style="list-style-type: none"> <li>• Team work</li> <li>• Communication skills</li> <li>• Planning</li> <li>• Problem solving</li> </ul>

## **Annexure**

### **1.1 National Competency Standards (NCS)**

The National Competency Standards specify the skill, knowledge and attitudes applied to a particular occupation. Standards also specify the standards or criteria of performance of a competent worker and the various contexts in which work may take place. Standards provide explicit advice to assessors regarding the skill and knowledge to be demonstrated by candidates seeking formal recognition either following training or through work experience.

### **1.2 Purpose of National Competency Standards**

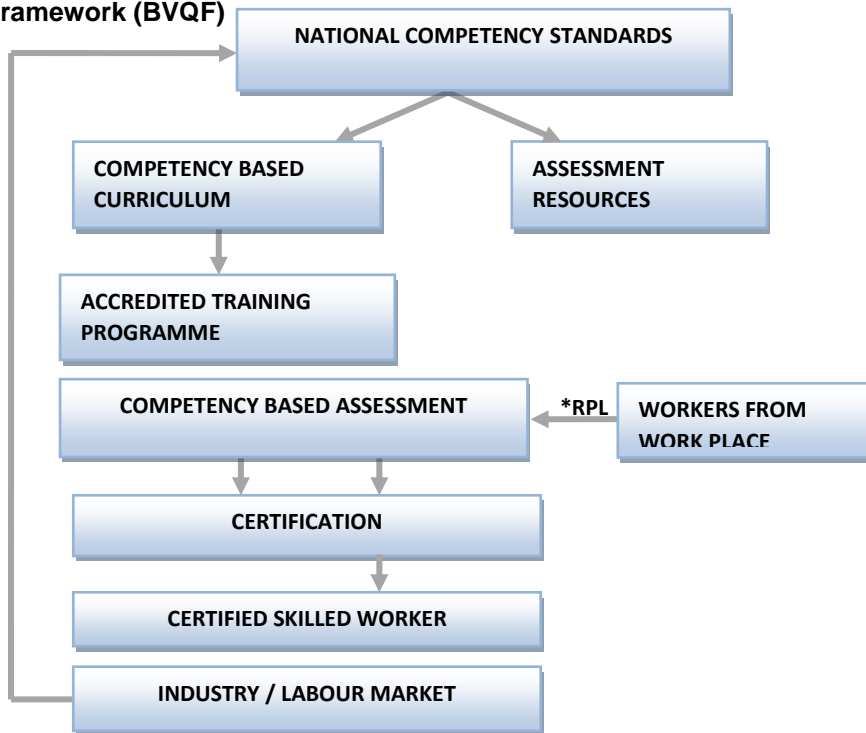
National Competency Standards serve a number of purposes including:

- Providing advice to curriculum developers about the competencies to be included in curriculum.
- Providing specifications to assessment resource developers about the competencies within an occupation to be demonstrated by candidates.
- Providing advice to industry/employers about job functions, which in turn can be used for the development of job descriptions, performance appraisal systems and work flow analysis.

### 1.3 Bhutan Vocational Qualifications Framework (BVQF)

Bhutan Vocational Qualifications Framework is an agreed system of Assessing, Certifying and Monitoring nationally recognized qualifications for all learning in the TVET sector against national competency standards, in training institutions, in the workplace, in schools or anywhere where learning takes place.

#### Components of the Bhutan Vocational Qualifications Framework (BVQF)



\* RPL = Recognition of Prior Learning

## 1.4 BVQF Levels

The Bhutan Vocational Qualifications Framework has three levels classified based on the competency of the skilled workers. The three levels are:

- National Certificate Level 3 (NC III)
- National Certificate Level 2 (NC II)
- National Certificate Level 1 (NC I)

### BVQF Level Descriptors

The qualification levels are decided based on level descriptors. The detail of the qualification level descriptor is as follows:

#### National Certificate Level 1

<b>Carry out processes that:</b>	<b>Learning demand:</b>	<b>Responsibilities which are applied:</b>
<ul style="list-style-type: none"><li>• Are narrow in range.</li><li>• Are established and familiar.</li><li>• Offer a clear choice of routine responses.</li><li>• Involve some prioritizing of tasks from known solutions.</li></ul>	<ul style="list-style-type: none"><li>• Basic operational knowledge and skill.</li><li>• Utilization of basic available information.</li><li>• Known solutions to familiar problems.</li><li>• Little generation of new ideas.</li></ul>	<ul style="list-style-type: none"><li>• In directed activity.</li><li>• Under general supervision and quality control.</li><li>• With some responsibility for quantity and quality.</li><li>• With no responsibility for guiding others.</li></ul>

## National Certificate Level 2

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> <li>• Require a range of well-developed skills.</li> <li>• Offer a significant choice of procedures requiring prioritization.</li> <li>• Are employed within a range of familiar context.</li> </ul>	<ul style="list-style-type: none"> <li>• Some relevant theoretical knowledge.</li> <li>• Interpretation of available information.</li> <li>• Discretion and judgments.</li> <li>• A range of known responses to familiar problems</li> </ul>	<ul style="list-style-type: none"> <li>• In directed activity with some autonomy.</li> <li>• Under general supervision and quality checking.</li> <li>• With significant responsibility for the quantity and quality of output.</li> <li>• With some possible responsibility for the output of others.</li> </ul>

## National Certificate Level 3

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> <li>• Requires a wide range of technical or scholastic skills.</li> <li>• Offer a considerable choice of</li> </ul>	<ul style="list-style-type: none"> <li>• A broad knowledge base which incorporates some theoretical concepts.</li> <li>• Analytical</li> </ul>	<ul style="list-style-type: none"> <li>• In self-directed activity.</li> <li>• Under broad guidance and evaluation.</li> <li>• With complete responsibility for quantity and</li> </ul>

<p>procedures requiring prioritization to achieve optimum outcomes.</p> <ul style="list-style-type: none"> <li>• Are employed in a variety of familiar and unfamiliar contexts.</li> </ul>	<p>interpretation of information.</p> <ul style="list-style-type: none"> <li>• Informed judgment.</li> <li>• A range of sometimes innovative responses to concrete but often unfamiliar problems.</li> </ul>	<p>quality of output.</p> <ul style="list-style-type: none"> <li>• With possible responsibility for the output of others.</li> </ul>
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## 1.5 PURPOSE

This qualification is designed for people interested in a career as a Plumber at the Certificate level. It comprises of four units that cover the essential knowledge and skills required for people working as a Plumber.

It provides industry specific skills and demands a level of performance that will enable new recruits to the industry to be immediately productive.

## 1.6 CODING USED FOR NATIONAL COMPETENCY STANDARDS

The coding and classification system developed in Bhutan is logical, easy to use, and also aligned with international best practises. The Bhutanese coding and classification system is based on the International Standard Classification of Occupations, 2008 (ISCO-08) developed by the International Labour Organisation (ILO).

The coding of the National competency standards forms the basis of the identification code for the Vocational Education and Training Management Information System (VET – MIS)

both in terms of economic sector identification and that of the individual standard.

### **Coding the individual national competency standards**

Coding the individual skills standard has a multiple purpose:

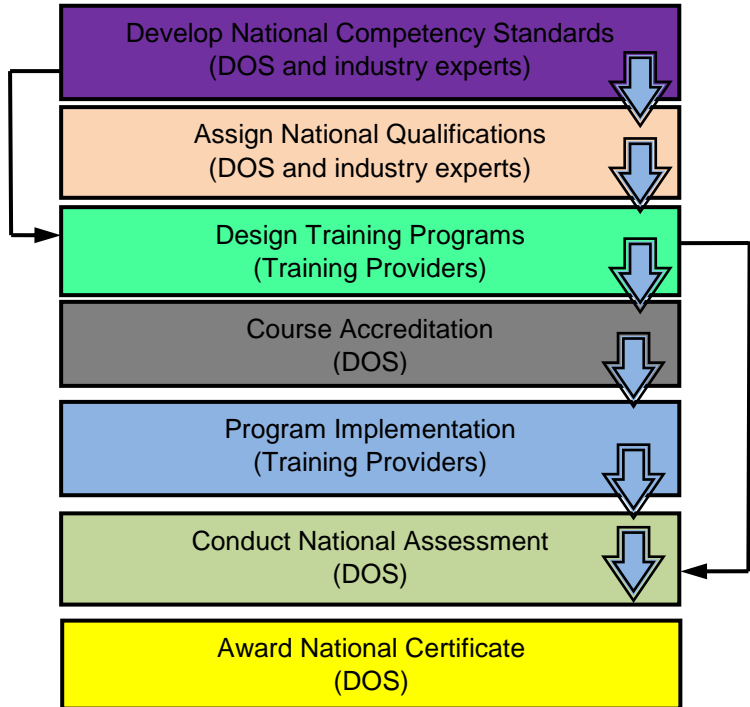
- to identify the level,
- to identify to which module the standard belongs,
- to identify in which order the standard is clustered within that module.

A job can include a number of competencies described in the national competency standards.

However, in order to follow a logical order, only national competency standards related to each other and following a logical sequence in terms of training delivery, from the simple to the complex, are clustered into a module. Some standards are so complex that they need to stand alone.

To illustrate with an example, the ILO assigns the code 7126 to the occupation plumber. Therefore, in the Bhutan's context, the occupation Plumber has been assigned the code 7126 in the National Coding System. The first unit is assigned the code U1, the first Unit of National Competency Standard is designated the code 7126 U1. Levels are assigned the code L and follow a logical progression from the National Certificate Level 1 (NC I) to the National Certificate Level 3 (NC III). Therefore the National Certificate Level 3 is assigned the code L3.

## Implementation and operational procedures for National Competency Standards (NCS)



MoLHR – Ministry of Labour and Human Resources  
DOS – Department of Occupational Standards



## **1.7 ASSESSMENT GUIDE**

### **Form of assessments**

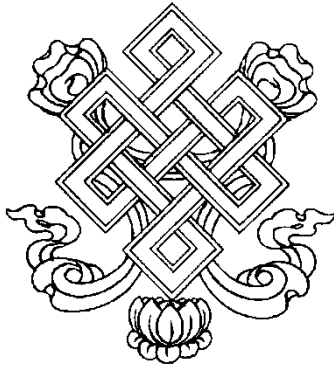
- Continuous assessment together with collected evidence of performance will be used.
- Evidence of the performance shall be based on practical demonstration.
- Knowledge can be assessed through diagrams, in writing or orally (viva-voce).

### **Assessment context**

- Competency may be assessed in the actual work place or in a simulated workplace setting.

### **Assessment condition**

- The candidate shall have access to all required tools, equipments, materials and documents.
- Candidate must complete the assessment in industry accepted time frame.



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