



NATIONAL COMPETENCY STANDARDS OPERATIONS MANUAL

**Department of Occupational Standards
Ministry of Labour and Human Resources
Thimphu, Bhutan.**

(Revised- 2015)



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INTRODUCTION

Bhutan has embarked on to develop and implement a unified TVET system and to support the implementation of Competency Based Training in Bhutan. At present, there are number of training providers, each offering their own qualifications, which in turn are based upon different grading or level systems. Before the development of a national system of certification, workers in Bhutan have no means of determining or proving their competency levels. Some may take tests conducted by overseas examination bodies in order to seek recognition of their skill. As the process of applying and taking these tests are time-consuming, inconvenient and moreover are extremely expensive, therefore many workers do not bother to have their skills certified. As Bhutan become more industrialized, the need for skilled workers increases and it becomes necessary to establish a system in order to set standards and to assess and certify skills in various occupations. Thus, a National Certification system has to be introduced with the following main objectives:

- To facilitate the selection of workers for skilled jobs by employers.
- To facilitate the specification of standards or levels to be achieved in upgrading the skills of workers.
- To facilitate formal recognition of skills gained informally.
- To facilitate opportunities for workers to upgrade their skills.
- To facilitate licensing, levy, promotion and to determine minimum wage for skilled workers.

National Competency Standards are a unifying feature of a competency based TVET system. The National Competency Standards provide the benchmarks for the features of a unified system such as:

- Curriculum development.
- Course accreditation.
- National Assessment.

- Awarding qualifications under the Bhutan Vocational Qualifications Framework.
- Recognition of prior learning.

National Competency Standards will form the core of a unified national system since they:

- Identify the levels of competencies exhibited by practitioners.
- Identify the levels of competencies to be transferred through the curriculum.
- Identify the levels of competencies to be assessed.
- Identify the levels of competencies that training providers must be capable of delivering.
- Identify the levels of competencies that form the basis of awarding National Vocational Qualifications.

1.0 Preface

1.1 Need of operations manual

This Manual supports the development and implementation of nationally consistent National Competency Standards in the country within the Technical & Vocational Education and Training (TVET) sector. National Competency Standards are a fundamental component for the implementation of the Bhutan Vocational Qualifications Framework (BVQF) and the awarding of nationally recognized vocational qualifications. This manual will describe in detail the processes to be followed in the development of National Competency Standards and provide details of the technical requirements for National Competency Standards. The manual is supported by a number of templates and forms that shall be followed in the development of National Competency Standards. The Manual will also guide the National Competency Standards developers on the quality requirements required by established Technical Advisory Committees and the Department of Occupational Standards for its final endorsement.

1.2 Broadening the scope of National Competency Standards development

As the National Competency Standards and competency based training system develop further in the country, the number of standards development teams within TVET will also increase. This manual will assist the developing teams to develop the National Competency Standards, whilst at the same time it will ensure that the quality of the National Competency Standards meets the required quality

benchmarks. By using a nationally agreed single format for the development and writing of National Competency Standards, the implementation of a unified Technical & Vocational Education and Training (TVET) system for Bhutan will advance.

1.3 Formal endorsement of National Competency Standards

This manual will also assist the Technical Advisory Committees in the validation process of National Competency Standards proposed by the Department of Occupational Standards. Its application will provide a consistent approach to ensuring quality benchmarks are applied to National Competency Standards development.

2.0 What are National Competency Standards?

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

2.1 Workplace performance

National Competency Standards define the competencies required for effective performance in an occupation. There are a number of important features of Competency Standards and their use. Competency Standards focus on what is expected of a worker in the workplace, rather than on the learning process, this is why it is called Competency Standards.

- Competency Standards embody the ability to transfer and apply skill and knowledge to new situations and environments.
- In Competency Standards, the emphasis is upon outcomes and upon the application of skill and knowledge, not just the specification of skill and knowledge.
- Competency Standards are concerned with what people are able to do, and the ability to do this in a range of contexts.
- Competency Standards include all aspects of workplace performance, and not only narrow task skills. The five components of Skill Standards are:
 1. Task skill
 2. Task management skill
 3. Contingency management skill
 4. Job role/work environment skill
 5. Transfer Skill

Not every Competency Standards will contain all five components; however in a group of units, these five components should be covered. They may emerge in the different parts of the Competency Standard format.

2.2 The use of National Competency Standards

The Competency Standards can serve a number of purposes including:

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

2.3 Content of the National Competency Standards Operations manual

This manual will provide a guide to National Competency Standards development in two areas. Firstly, the process of developing National Competency Standards and secondly, the technical content requirements of the National Competency Standards.

3.0 National Competency Standards Development Process

3.1 Identification of Occupation

National Competency Standards will be developed for occupations identified through an analysis of relevant labour market. The proponent may use any labour market information available or they may have identified the need through some other manner. When it comes to preparing an endorsement submission (see below), the proponent will need to identify what data was used to justify the development of the Competency Standards.

The criteria for the selection of trades / occupations shall be:

- Significant employment opportunities both current and future.
- Significant social and economic contributions to the society.
- Low level of formal skill recognition (qualifications) currently.
- Feasibility to provide training locally and assessment in the workplace.
- Completion of a scoping study to confirm the need for Competency Standards.

3.2 National Competency Standards Developers

The Department of Occupational Standards is the overall responsible agency for the development of National Competency Standards, however there shall be no limitation on which bodies are able to develop Competency Standards. They may be a government agency, training provider, assessment centre, industry association, private company, community organisation or even an individual appointed by the Ministry.

Any costs involved in the development of National Competency Standards will need to be met by the proponent.

The Department of Occupational Standards shall ensure that the Competency Standards development panels demonstrate, that a majority of its members are drawn directly from industry and have relevant practical experience.

The standard development panels need not be a formally constituted body. Its purpose is to provide the technical input required by Competency Standards writers.

3.3 Drafting National Competency Standards

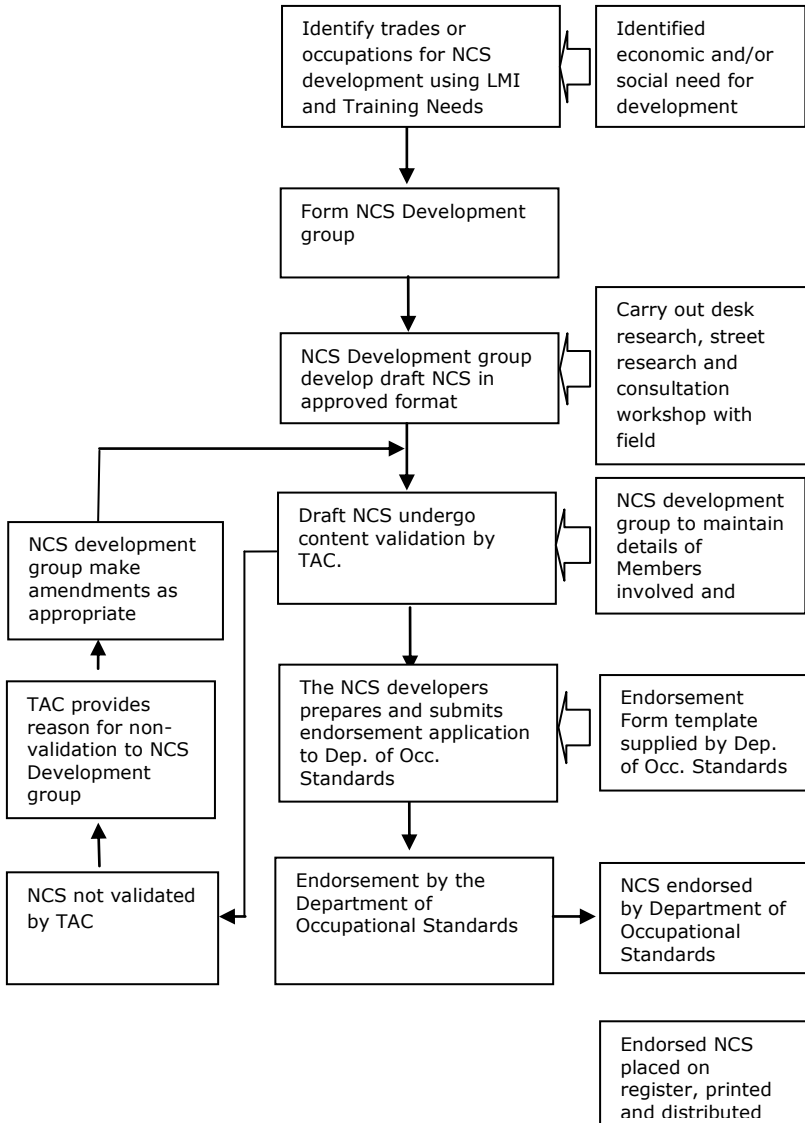
Competency Standards will need to be drafted in a unified format for National Competency Standards which has been approved by The Department of Occupational Standards. Thus a template shall be supplied by the Department of Occupational Standards. A further section of this manual will propose details of a format for National Competency Standard and a template will be included in the annexes.

3.4 Content validation

The National Competency Standards development panels shall forward the draft Competency Standards to the respective Technical Advisory Committees, through the Department of Occupational Standards. The purpose of content validation is to ensure that the draft Competency Standards gain acceptance by both industry and the vocational training community. People who are independent of the development process shall undertake the validation. A proposed copy of a Validation Form is included in annex III. The diagram on the next page provides a summary of the Competency Standards development process.

The industry specific competency standards shall be validated by experts from that particular industry.

Flow Chart for development process of National Competency Standards



3.5 Endorsement application

The Department of Occupational Standards shall provide proponents with an application form along with the necessary templates for completion of the application. Along with a copy of the Competency Standards themselves, proponents will need to provide:

- Details of the research undertaken.
- Details of the Competency Standard Development panel.
- Details of TAC Members involved in the validation process and of any changes to the draft NCS that resulted from validation.
- Letters of support from key industry and vocational training stakeholders if any.

3.6 Endorsement process

The Department of Occupational Standards is responsible for the endorsement of National Competency Standards. The endorsing body must rely on the expertise of the Technical Advisory Committee in recommending that Competency Standards meet the requirements of this NCS Operations Manual.

The endorsement process itself is merely a formal endorsement by the Department of Occupational Standards once the Competency Standards have been validated by the respective Technical Advisory Committees. The flow of the endorsement process is indicated below.

- The Technical Advisory Committee confirms that the Competency Standards have met the content and technical requirements in this NCS Operating Manual and recommend to

the Department of Occupational Standards that the NCS are to be endorsed.

- The Department of Occupational Standards endorses NCS which are verified by the Technical Advisory Committees, provided that the NCS have been developed using the processes outlined in this manual.
- The Department of Occupational Standards arranges for placing the endorsed NCS on a register and arranges for distribution to stakeholders and interested parties.

3.7 Registration, printing and distribution

Endorsed NCS shall be maintained in an electronic data base to which access shall be granted to stakeholders and likely users of the NCS. A limited number of NCS shall be printed in appropriate language if considered necessary. Additional copies of NCS can be sold at cost recovery to users.

3.8 Competency Standards not endorsed by National Agency

If the Department of Occupational Standards do not endorse an application, reasons shall be supplied to the proponent via the appropriate Technical Advisory Committee. The proponent shall have the opportunity to address any issues raised by the Department of Occupational Standards and resubmit their application. Depending upon whether the application is non-compliant, the proponent may need to have the amended NCS revalidated. Should a proponent believe the grounds for non-endorsement are unfair, they have the right of appeal.

4.0 Competency Standards Development Process – Best Practice Guide

4.1 Industry representation

It is essential to gain direct industry consultation for NCS development. This shall ensure that the NCS reflect current workplace practices. A wide range of industry and enterprise stakeholders as practitioners shall be involved in the consultation process. Where there are important industry associations, they too shall be included in the consultations. Where appropriate, members of the development team may be required to facilitate NCS development workshops. In the endorsement submission, the proponent of the NCS shall document the consultation processes that took place and include:

- The names and positions of those involved in direct consultations.
- The names and positions of those involved in indirect consultations.
- The numbers of face to face meetings held with individuals and groups.

During the endorsement process, The Department of Occupational Standards may wish to contact members of the consultative network to confirm their participation in consultations.

Industry representation may be sought from a range of sources, including (but not limited to):

- Industrial sector associations.
- Major national and multi-national companies.
- Industry regulatory authorities.

- Vocational Training Institutions.
- Government enterprises.

4.2 Development methodology

A range of methodologies may be used to develop NCS, such as:

- Interviews.
- Surveys.
- Group processes.
- Functional analysis.

The mix of methodologies chosen shall be:

- Practical and cost efficient.
- Transparent so that all stakeholders have opportunities to contribute.
- Create NCS that are widely accepted and endorsed by industry.

Whatever mix of methodologies is chosen, the development of NCS shall be based upon a functional analysis that specifies the outcomes of work in a particular trade. The NCS shall be made available to other vocational training bodies involved in curriculum development, learning resource development, assessment resource development and teacher resource development.

4.3 Research

There are no prescribed techniques for gaining industry information.

Issues that affect the research techniques chosen include:

- Funding
- Composition and responsibilities of the development team
- Time
- Stakeholder involvement.

In developing NCS there are a number of research phases that shall be undertaken. These are:

- Reviewing the industry.
- Conducting an information search.
- Developing the NCS and the validation process.

4.3.1 Reviewing the industry

The industry review shall establish the parameters of the trade or occupation and the key stakeholders to be involved in consultations. Whilst some members of the development team may be industry practitioners, some may be educators or NCS development facilitators. It is important that all members of the team are aware of factors such as:

- The types of businesses involved in the trade or occupation.
- In what environments the work is usually carried out.
- Future skill needs of the trade or occupation.
- Key industry stakeholders.

4.3.2 Information search

The purpose of the information search is to find out:

- What Competency Standards already exist for the occupation?
- Whether there is a formal curriculum document for the occupation.
- Any regulatory requirements for some work practices in the trade or occupation.
- If there are any job descriptions to describe workers duties.

- If there is any Standard Operating Procedures or Safe Working Procedure or other similar documents or manufacturers specifications?

4.3.3 Developing the Competency Standards

The cost of development of Competency Standards can be high. Some of the costs to be considered include:

- Costs for consultation workshop with field/industry experts.
- Project management fees.
- Time off the job for industry representatives.
- Word processing and printing.
- Telephone, fax and postage.
- Venue expenses for workshops and/or meetings.

Identification of occupations for Competency Standards development shall be done by for example industry associations, government departments and/or according to government policy initiatives. The Department of Occupational Standards shall approve any requests for Competency Standard development based on labour market demand. A Labour Market Information system shall be used as an information source. The criteria for the selection of trades/occupations shall be:

- Significant employment opportunities both current and future.
- Significant social and economic contributions to the society.
- Low level of formal skill recognition (Qualifications).
- Feasibility to provide training locally and assessment in the workplace.

- Completion of a scoping study to determine the need for and potential use of the Competency Standards.

The development group will undertake a functional analysis, leading to an occupational map of the occupation. The occupational map shall define what is produced by the occupation and what skills, knowledge and attitudes are applied in the workplace in order to achieve these products and services. The occupational map is more than a simple task list. It does more than identify what a worker does. It identifies what skills knowledge and attitudes are needed to be applied to the job in order to produce goods and services. This information is later used to develop the elements of competence and the performance criteria in the Standards. Once the Standards are formulated as draft Competency Standards they shall be forwarded to the relevant Technical Advisory Committee for technical validation along with a formal validation form. A formal submission will accompany the draft Competency Standard to enable a Technical Advisory Committees to undertake the technical validation.

4.4 Validation

Validation is the process of evaluating the extent to which draft NCS accurately reflect competencies required at workplace and future workplace trade practices. The validation process shall be carried out by that sector specific Technical Advisory Committee.

It is essential that the validation process involves industry representatives with the participation of relevant vocational training institutions to ensure that the Competency Standards will have practical applications both in workplaces and in Vocational Training

Institutions. The validation process shall be fully documented for the endorsement of the Competency Standards. The documentation shall at least include:

- The names and positions of those involved in direct validation consultations
- Details of the dates of and attendance at any validation workshops
- Summary of the issues raised during validation and the proponent's treatment of those issues in the final Competency Standards presented for endorsement.

There is no set method for the validation of Competency Standards. The process of validation usually involves:

- Circulation of the draft Competency Standards for comment
- Consultations with key stakeholders through workshops and workplace observations
- Gaining written support from key stakeholders

To ensure that the validation process is truly national and widespread, the following validation activities must take place: The development team shall in consultation with the relevant Technical Advisory Committee, circulate the draft Competency Standards to industry stakeholders including industry associations, individual practitioners, any regulatory authorities, and industry experts for comments. Some amendments to the Competency Standards may be required after this validation.

Once this wider industry validation has occurred the redrafted Competency Standards shall be made available for public scrutiny via media notices placed by the Department of Occupational Standards.

4.5 The Technical Advisory Committees (TAC)

Technical Advisory Committees for different economic sectors shall be constituted as interfaces or links between the Department of Occupational Standards and different Industry sectors. Technical Advisory Committee should consist of representatives from government, private, corporate bodies and training institutions. The department of Occupational Standards has the authority to replace Technical Advisory Committee members from time to time.

As a proposed minimum, each Technical Advisory Committee shall include:

- 5 members with wide experience in occupations within the industry sector who are current employed at managerial and/or supervisory level.
- 1 Representative from the Curriculum developer.
- 1 representatives from private or public training providers.
- Member Secretary from the Dep. of Occupational Standards

Each Technical Advisory Committee may appoint a chairperson from within the ranks of industry practitioner members. Technical Advisory Committees may co-opt additional industrial experts from time to time as they see fit. The quorum for the Technical Advisory Committee meeting is a minimum of 1/3 of the membership; however minimum of 3 members from the industry sector must be present.

The terms of reference for the Technical Advisory Committees are as follows:

- Assist the Department of Occupational Standards in identifying suitable practitioners to take part in Competency Standards development.
- Provide advice to the Department of Occupational Standards on current and future trends within their industry.
- Undertake final content and technical validation of Competency Standards after wide circulation to industry and the public.
- Recommend Competency Standards to the Department of Occupational Standards for endorsement.
- Receive industry comments on the continuing validity of the Competency Standards.
- Assist the Department of Occupational Standards in the review of Competency Standards.
- Recommend new occupations to the Department of Occupational Standards for the development of Competency Standards.
- Facilitate the provision of technical advice in their occupations on various matters as requested by the Department of occupational Standards.

4.6 The Technical Advisory Committee's role in validation

The role of Technical Advisory Committee is to undertake the final technical validation of Competency Standards before they are formally submitted to the Department of Occupational Standards for endorsement. The Technical Advisory Committees are to meet twice a year in order to validate the Competency Standards. The Department

of Occupational Standards shall not consider any endorsement submissions unless the Competency Standards are validated by the respective Technical Advisory Committees. However, exception shall be granted to industry specific competency standards, which may be validated by the industry experts of that industry.

5.0 The Competency Standard – Technical Content

There are two aspects to technical content of the Competency Standards. One is the use of the Competency Standard format and the other is the technical content of the Competency Standard.

5.1 Competency Standard format

All Competency Standards should be developed in the approved format approved by the Department of Occupational Standards. A proposal is included in Annex II. The Competency Standard format is required to maintain consistency. It is also important for users of Competency Standards to have consistent documentation for use in:

- Curriculum development.
- The development of teaching and learning materials.
- The development of assessment resources.
- Making international comparisons of vocational qualifications.

5.2 Technical content

The issues related to technical content shall be confirmed during the development and validation of the Competency Standard. The technical content refers to such things as:

- Coverage of the range and breadth of workplace functions.
- Maintaining an outcome focus.
- Fully expressing task and task management skill.
- Include contingency management and job or workplace environment skill.
- Maintain high standards of product/service quality.
- Maintain workplace safety.
- Incorporate underpinning knowledge and skill.
- Identify any industry regulations or licensing requirements.

5.3 BVQ Level Descriptors

The following are the level descriptors used for developing vocational qualifications.

Level 1: National Certificate level 1 (Semi skilled)

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

Level 2: National certificate level 2 (Craftsman)

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

Level 3: National certificate level 3 (Master Craftsman)

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> • Requires a wide range of technical or scholastic skills. • Offer a considerable choice of procedures requiring prioritization to achieve optimum outcomes. • Are employed in a variety of familiar and unfamiliar contexts. 	<ul style="list-style-type: none"> • A broad knowledge base which incorporates some theoretical concepts. • Analytical interpretation of information. • Informed judgement. • A range of sometimes innovative responses to concrete but often unfamiliar problems. 	<ul style="list-style-type: none"> • In self – directed activity. • Under broad guidance and evaluation. • With complete responsibility for quantity and quality of output. • With possible responsibility for the output of others.

Level 4: National Diploma level 1

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> • Require a wide range of technical or scholastic skills • Offer a wide choice of standard and non-standard procedures • Are employed in a variety of routine and on routine contexts 	<ul style="list-style-type: none"> • Specialised knowledge with depth in more than one area • Analysis, reformatting and evaluation of a wide range of information • Formulation of appropriate responses to resolve both concrete and abstract problems 	<ul style="list-style-type: none"> • In self-directed activity and sometimes directed activity • Under broad guidance and evaluation • With complete accountability for quantity of quality of output • With possible responsibility for the quality and quantity of output of others

Level 5: National Diploma level 2

Carry out processes that:	Learning demand:	Responsibilities which are applied:
<ul style="list-style-type: none"> • Require a wide range of specialised technical or scholastic skills • Involve a wide choice of standards and non-standard procedures • Are employed in a variety of routine and non-routine contexts 	<ul style="list-style-type: none"> • A broad knowledge base with substantial depth in some areas • Analytical interpretation of a wide range of data • Determination of appropriate methods and procedures in response to a range of concrete problems with some theoretical elements 	<ul style="list-style-type: none"> • In self-directed activity • Under broad general guidelines or functions • With full responsibility for the nature, quantity and quality of outcomes • With possible responsibility for the achievement of team output

6.0 National Competency Standard Format

The National Competency Standard format proposed is explained in the diagram on the following pages.

6.1 Unit Standard title

The Unit Standard refers to a competency which, when applied in a work situation, can logically stand alone. It includes a title, expressed in outcome terms, as well as other parts of the Standard. A key objective of Competency Standard development is to identify the competencies within an occupation. A central principle of a National Vocational Qualifications Framework is that Unit Standard are the smallest component of achievement which can be nationally recognised. In other words, it is the Unit Standard as a whole, not individual elements or performance criteria, which are recognised. Unit Standards provide the basis for:

- Recognition of skills within and across industries
- Work organisation reviews and options
- Development of training
- Assessment
- Certification
- Credit transfer and articulation.

The Unit Standard title should reflect a broad application of the job function. It shall be broad enough to allow for independent assessment of the Unit Standard as a whole and in some circumstances (where specified) for assessment with a group of Unit Standards from the same occupation. Ideally, the Unit Standard title shall be general

enough to be transferred to other jobs within the same sector and sometimes even between other trades and occupations.

Code: The Unit Standard code shall be provided by The Department of Occupational Standards

Descriptor: The Unit Standard descriptor expands on the information provided by the Unit Standard title. It can provide additional information relating to the Unit Standard purpose and intent to ensure the Unit Standard accurately and clearly reflects this.

6.2 Elements of competence

Elements of competency are the basic building blocks of the Unit Standard and continue the description of the key purpose of the standard itself. They describe, in outcome terms, functions that a person, who works in a particular area of work, must be able to master. Elements must be described as actions or outcomes which are demonstrable and assessable. The elements combined, build up the Unit Standard.

It is not useful to develop elements which simply specify the tasks or duties associated with the unit standard. This may generate Unit Standards which overlook the diversity and complexity of the range of skills and knowledge which are required at the workplace. A simple procedural listing of tasks is unlikely to capture the management of the contingencies that arise in day to - day workplace activity. This approach would also tightly link the Unit Standards with particular processes, technologies or forms of work organisation, which may diminish as their ongoing relevance and processes or technologies change over time.

6.3 Performance criteria

Performance criteria should be evaluative statements which specify the required level of performance and what is to be assessed. Performance criteria shall also indicate the sequence of major tasks. The performance criteria need to concentrate on how a person who is applying the competency acts in the cognitive, attitudinal and sensory-motor domain. One way of doing this is to imagine the statement “**A competent person must be able to...**” placed in front of each of the performance criteria. By using the Range Statement to provide further explanation of the performance criteria, unnecessary repetition in performance criteria can be avoided.

Elements of competence	Performance Criteria
<ul style="list-style-type: none">• Describes the outcomes which contribute to a standard.• Should be addressed as an active verb.• At least two elements in a Unit Standard	<ul style="list-style-type: none">• Specify the required level of workplace performance.• Should be addressed as an active verb• At least two performance criteria in an element

Phrases that can be used for expressing the cognitive and attitudinal areas of competency in performance criteria include:

Plan strategically.

Consider the effect.

Suggest alternatives to determine the difference.

Communicate sensitively.

6.4 Range statement

The range statement relates to the Unit Standard as a whole and performs a number of functions, including:

- Contextualising the Unit Standard.
- Providing a link to knowledge and enterprise requirements.
- Providing a focus for assessment.
- Providing assistance in the update of Unit Standards.

Usually the developer should ensure that any technical terms or processes identified in the

Performance Criteria are expanded upon in the range statement.

It also specifies the range of context and conditions to which the performance criteria apply and should include:

- A list of tools, equipment and materials (including an indication of the minimum requirements for training).
- Where work will be carried out (on the job, in a training workshop etc).
- Any regulations covering the work and training, including the instructor capabilities
- Any standard specifications relevant to the work/training.
- Any national or international standards to which the work shall be carried out.
- Where appropriate, an elaboration of items identified in the performance criteria to clarify the range of activity.

6.5 Assessment guide

The purpose of the assessment guide is to direct assessment. There should be a clear statement about the assessment process that focuses on assessment of the Unit Standard as a whole, rather than on

each separate performance criteria. The assessment guide shall cover any specific issues about the context of assessment, for example:

- Whether it must be assessed under any specific workplace conditions
- What conditions a valid simulated environment should meet e.g at training institutions
- Whether a formal test is a viable mean of determining aspects of competency

The assessment guide assists in the assessment of trainees. It assists both assessors and candidates to identify the critical aspects of evidence to be supplied/collected and performed for assessment

The assessment guide shall identify:

- The forms of assessment (that is, how assessment shall be undertaken for the standard).
- The context of assessment – where and how assessment can be carried out.
- Whether the standard shall be assessed alone or in conjunction with any other standards (including pre and co requisites where appropriate).
- Assessment conditions, listing the tools, equipment and materials candidates shall have access to, documents which shall be referred to and any special instructions about generic skills and knowledge which shall be demonstrated by candidates.
- Any relevant time frames.
- Resources required for assessment.

6.6 Underpinning Knowledge and Skills

The underpinning knowledge and skills shall list knowledge and skills required to meet the performance criteria specified in the Unit Standard. The table of underpinning skill and knowledge should avoid merely listing knowledge that a person should keep in their head. It should list the underpinning knowledge and skill, that is crucial for the performance stated in the performance criteria.

The list of underpinning knowledge and skills for the standard, shall act as a guideline for training and assessment. These are the knowledge and skills required to undertake all of the outcomes described in the Competency Standards.

7.0 Technical Content

The accuracy of the technical content in terms of industry relevance and applicability will be determined during the development and validation phases. This section of the manual relates to the technical components of the Competency Standards themselves. These are:

- Covering the range and breadth of workplace functions.
- Maintaining a focus on workplace outcomes.
- Fully expressed task and task management skill.
- Including contingency management and job or work environment skills.
- Maintaining high standards of product/service quality.
- Maintaining workplace safety.
- Incorporating underpinning knowledge and skills.
- Identifying any regulatory or licensing requirements.

7.1 Range and breadth of workplace functions

It is important that all outcomes within an occupation are covered by the Unit Standards. The

Unit Standards shall be broad enough to enable its use in a variety of locations and enterprise types.

7.2 Workplace outcomes

The Unit Standards should describe realistic workplace outcomes. That is, they should not describe what skill and knowledge need to be taught and learnt in a classroom, but realistically describe the products and services produced and needed by enterprises within an industry.

7.3 Task Skill

Task skill describes the performance required to perform tasks. An example of a performance standard describing a task skill would be: "Carry out pre-start, start up, park up and shutdown procedures for given machinery in accordance with manufacturer's instructions and site procedures."

7.4 Task management Skill

Task management skill refers to the ability to manage a number of different tasks. Task management captures the skill used as people plan and integrate a number of different tasks to achieve a complete work outcome. An example of an element of competence describing a task management skill is: "Plan and prepare for operations."

7.5 Contingency management Skill

Contingency management Skill describes the Skill required to respond to irregularities, imperfections and the unknown emergencies. They are a problem solving Skill and usually require the application of a certain depth of underpinning knowledge. An example of a performance standard dealing with contingency management is: "Access and analyse and use relevant safety systems information to assist in or confirm hazard identification."

7.6 Job role/work environment Skill

Job role/work environment skill is the skill required to deal with the responsibilities and expectations of particular work environments. An example of a performance standard, which embodies job role/work environment skills, is: "Notification of shift availability or non-attendance for shift is given without undue delay and according to company policies and procedures."

7.7 High standards of product/service delivery

The Unit Standards shall include any references, most likely in the range statement or in the performance criteria, to any Bhutanese quality standards or international quality standards.

7.8 Workplace safety

The Unit Standards should make references to any Safe Working Procedures within an occupation such as the Occupational Health and Safety Regulations and the Labour and Employment act and thus ensure that performance criteria capture the importance of working safely.

7.9 Unit Standard development checklist

Below is a checklist that can be used by Unit Standard developers to ensure that developed standards meet best practice requirements.

UNIT STANDARD DEVELOPMENT CHECKLIST

CONTENT Have you:

- Covered the range and breadth of workplace functions?
- Ensured there is no bias or discrimination?
- Focused on competencies and outcomes?
- Fully expressed the tasks and task management skills?
- Included contingency management and job or role environment skills?
- Incorporated underpinning knowledge and skills?
- Identified and addressed any regulatory and licensing requirements (such as occupational health and safety, environmental and public health)?
- Identified safety requirements and/or regulations associated with the occupation.

TECHNICAL Have you:

- Met the national format requirements?
- Included a range statement which provides for Competency Standard assessment?
- Included an assessment and evidence guide which establishes underpinning knowledge and skills

- Linked the evidence guide to performance criteria and the range statement?

PROCESS

- Has a trade advisory group been formed with at least two thirds of the membership from industry?
- Has there been documented consultation with key stakeholders?
- Has there been an effective development methodology to undertake the functional analysis and development of an occupational profile?

Have a validation process been undertaken and involved:

- Enterprises?
- Industry?
- Other key stakeholders?

Glossary of Terms

Accreditation	Confirmation that a particular course/program meets the requirements of the Accreditation Guidelines.
Assessment	Process of collecting evidence and making judgements as to whether a person can perform according to the knowledge, skills and attitudes specified in the National Competency Standards.
Assessment guide	A component of the National Competency Standard; used to assist assessment of the Competency Standard.
Bhutan Vocational Qualifications Framework Certificate	Bhutan's national system for Technical & Vocational Education and Training Qualification normally awarded at levels 1 – 5 of the Bhutan Vocational Qualifications Framework.
Competence	The possession by workers of what they are expected to know and be able to do, together with the capacity to apply skill and knowledge in new situations and environments.
Competency based Training	A flexible learner centred approach to training, based on the National Competency Standards.
Basic skills	Essential competencies for all workers such as literacy and numeracy skills.
Curriculum	Specification of how knowledge, skills and attitudes from the Competency Standard can be transferred through structured training.
Descriptor	Component of National Competency Standard; provides further information about a unit in terms of context and parameters.
National Certificate	Qualification awarded at levels of the Vocational Qualifications Framework.
Element of Competence	Component of a National Competency Standard; the building blocks of the unit competency standard.

Element	Building block of unit standard
Endorsement	The formal process of providing official recognition to Competency Standards and qualifications.
Generic skills	Competencies common to an industry sector and often forming the core of several related qualifications.
International Benchmarking	Aligning units to commonly accepted international norms.
Licensed assessor	Person officially authorized to assess and determine if the requirements of the Standards have been met.
National Qualifications	The education and training prerequisites identified nationally by industry for entry to an occupation or a course at a higher level.
National Competency Standards	Defines the knowledge, skill and attitudes required for effective workplace performance.
National assessment	Final assessment with the use of external assessors for assessing the competencies in order to confirm competence.
Performance criteria	Component of a National Competency Standards; specifies the required level of performance.
Qualification	The education and training prerequisites for entry to employment or course at a higher level.
Quality assurance	All the processes used by an institution to be certain it is carrying out its activities effectively and efficiently; also the generic term for all activities carried out by a regulatory body to verify that education institutions are meeting or exceeding specified quality assurance standards.
Range statement	Component of a Unit Standards; sets out the contexts in which work performance takes place and the range of information, tools, equipment and consumables required for work performance.

Recognition of learning prior	Process of awarding credit for competencies achieved outside of formal accredited training.
Registration	Permission for an education/training institution to carry out education and training services.
Technical and Vocational Education and Training	All post-secondary education and training and not in universities.
Validation	Process of confirming that a National Competency Standards meets the requirements of industry.

Annex I, Sample of Unit Competency Standard

Unit Title	Perform Resistance Welding
Descriptor	This unit standard covers the competencies required to perform resistance welding to different sizes of metal and to ensure safe working conditions.
Code	Welder standard 1
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Cut material to size to suit the job	<p>1.1 Select material required for the job according to specifications.</p> <p>1.2 Read and interpret drawings and mark out measurements accurately on materials.</p> <p>1.3 Cut materials according to marked out measurements.</p>
2. Prepare joint surfaces for welding	<p>2.1 Grind joint surfaces according to specifications.</p> <p>2.2 Flame cut joint surfaces according to specifications.</p> <p>2.3 File and/or grind and level the joint surfaces to create an even finish on the metal.</p> <p>2.4 Clean the prepared metal surfaces to make ready for welding.</p>
3. Tack weld the metal pieces	<p>3.1 Clamp parts for welding according to drawings.</p> <p>3.2 Tack weld and align work pieces according to specifications.</p>
4. Weld together thin sheets	<p>4.1 Arrange welding equipment for spot welding.</p> <p>4.2 Set the range of current, pressure and time range according to welding requirements.</p> <p>4.3 Clamp work pieces according to drawing and specification.</p> <p>4.4 Weld thin sheets according to required standards.</p>

5. Weld thin wire mesh	5.1 Arrange welding equipment for spot welding. 5.2 Set the range of current, pressure and time range according to welding requirements. 5.3 Clamp work pieces according to specifications. 5.4 Weld mesh according to required standards
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RANGE STATEMENT

Work connected to this unit shall take place in a welding training workshop or at a worksite.

Tools, equipment and materials used shall include

- Measuring and marking out tools
- Hand tools
- Hand shears and bench shears
- Guillotine machine
- Hand hack saw and power saw
- Hand drill, pillar drill, and pedestal grinder
- Gas cutting equipment including the profile cutter
- Disc grinder
- Safety equipment
- Welding equipment and welding electrodes
- Spot welding machine
- Clamps
- Spot welding machine
- Cleaning equipment
- Mild steel, Stainless steel, Aluminium sheets, plates and pipes– Less than 3mm thickness
- Mild steel, Stainless steel, wire mesh – Less than 3mm thickness

Work is performed to drawings, sketches, specifications and instructions as supplied and to pre-determined standards of quality and safety while observing all relevant environmental regulations.

ASSESSMENT GUIDE

Forms of Assessment

Assessment shall be based upon evidence collected throughout training or from workplace based evidence.

Assessment context

This Unit Standard can be assessed on the job, off the job, or a combination of on and off the job. The work of an individual will be assessed whether produced alone or as part of a team.

Critical aspects

This Unit Standard can be assessed individually or in conjunction with any other Unit Standards.

Assessment conditions

The trainee shall have access to all tools, equipment, materials and documentation required.

The trainee shall be permitted to refer to the following documents:

- Any relevant workplace procedures.
- Any relevant product and manufacturing specifications.
- Any relevant drawings, manuals, codes, standards and reference material.

The trainee shall be required to:

- Orally, in writing or by other methods of communication, answer questions put by the assessor.
- Identify superiors who can be approached for the collection of competency evidence where appropriate.
- Present evidence of credit for any off-job training related to this unit.

Assessors must be satisfied that the trainee can competently and consistently perform all elements of the standard as specified by the criteria, including required knowledge.

The welded joints shall be tested by:

Visual testing, liquid penetration and magnetic particles.

Special notes

During assessment, the trainee shall:

- Demonstrate safe-working practices at all times;
- Communicate information about processes, events or tasks being undertaken to ensure a safe and efficient working environment;
- Take responsibility for the quality of their own work;
- Plan tasks in all situations and review task requirements as appropriate;
- Perform all tasks in accordance with standard operating procedures;
- Perform all tasks to specifications;
- Use accepted engineering techniques, practices, processes and workplace procedures.

Tasks involved will be completed within reasonable timeframes relating to typical workplace activities. The completed welded product should comply with respective industrial standards.

Trainees are required to operate the resistance welding plants according to the correct range of current, etc., suitable for a particular thickness or material, check and correct any defects and finish the weld as necessary.

Resources required for assessment include: Materials, tools, equipment and machines listed within this unit.

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILL
<ul style="list-style-type: none"> • Hand tools and equipments • Cutting technology • Properties of metals • Types of files and filing principles • Reading and interpretation of drawings • Equipment and machinery safety • Workplace safety • Engineering drawing, projections and pattern development • Different gauges of wire and sheets • Spot welding techniques 	<ul style="list-style-type: none"> • Marking • filing techniques • Flame cutting • Preparation of an engineering drawing to suit welding, including projections and pattern development • Operation of the spot welding / resistance welding machine

Annex II, Validation Form

Please respond to all the items and provide additional comments as appropriate.

1. Unit Title

1.1 Does the unit title focus on the outcomes of the job?
Yes **No**

1.2 Are you able to suggest any alternative unit standard title that may better describe the outcome of the job? **Yes**
 No

If yes, please suggest an alternative name:

1.3 Will the unit title be relevant across a range of enterprises in your trade?
 Yes **No**

Comments:

2. Descriptor

2. 1 Does the descriptor adequately describe the parameters of the job?
Yes **No**

Comments:

3. Elements of competence

3.1 Do the elements focus on the outcomes of the job?
 Yes **No**

Comments:

3.2 Are the elements assessable or demonstrable?
 Yes **No**

Comments:

4. Performance criteria

- 4.1 Are the performance criteria easy to understand?
 Yes **No**

Comments:

- 4.2 Is there any repetition in the performance criteria?
 Yes **No**

Comments:

- 4.3 Is there a clear rationale as to why the performance should be undertaken?
 Yes **No**

Comments:

5. Range statement

- 5.1 Does the range statement identify adequately the contexts in which the work takes place?
 Yes **No**

Comments:

- 5.2 Does the range statement identify all the regulations that effect the job?
 Yes **No**

Comments:

- 5.3 Are any additions or deletions required to the resource and equipment list?
 Yes **No**

Comments:

6. Assessment guide

- 6.1 Does the assessment guide identify the minimum essential skills and knowledge which are essential to the job?
 Yes **No**

Comments:

- 6.2 Does the assessment guide repeat any information that is already contained in the performance criteria?

Yes **No**

If yes, please specify below.

Comments:

7. Other comments

Please make any other comments in order to help improve the draft occupational skills standard.

8. Validity of the draft National Competency Standard for (insert name of trade)

In my judgement, the Unit Competency standard for (insert trade) meet the requirements for practicing the trade and can be used to develop training and testing materials for the trade.

Yes **No**

If no, please suggest some improvements:

Name of Validator: Position: Organisation:

Date:

Signature:

Annex III, ENDORSEMENT FORM

NATIONAL COMPETENCY STANDARDS FOR:

1. NATIONAL CERTIFICATE LEVEL:

2. Endorsement date:

3. Date for review:

4. Technical Advisory Committee	Name: 1. 2. 3. 4. 5. 6. 7. 8.	Representation:
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5. Purpose of the qualification:
6. Regulations for the qualification:
7. Sequence of Unit standards and their clustering:
 - 1.
 - 2.
 - 3.
8. Accreditation requirements before programmes may be offered or workplace assessment undertaken:
9. Certification
10. Assessment consistency requirements
11. Transition arrangements
12. Contact for comments
13. Prerequisite diagram

1. Title

This should specify whether the qualification is a certificate assigned to levels 1-3 or a bridging course certificate is assigned, following the BVQ. The title of the qualification should accurately describe the scope of the unit Competency Standard. For national and international consistency the Department of Occupational Standards may adopt the ILO International Occupational Classification for the naming of qualifications. This can be edited to accommodate local industries.

2. Endorsement date

This will be the date that the Department of Occupational Standards officially endorses the qualification as representing the National Competency Standards.

3. Date for review

This is the date selected by industry by which the qualification must be reviewed to ensure continuing relevance. It is suggested that this be 3 years from the date of development, but in areas where technologies are advancing rapidly or where major changes are expected it should be less than 3 years.

4. Technical Advisory Committee

This should contain a full schedule of all members with their contact details for on-going involvement in the management of the qualifications and for its future redevelopment. In future this may be a single national trade association.

5. Purpose of the qualification

This should state precisely what holders of the qualifications can be expected to know and be able to do. It will guide learners as they consider study options and employers as they consider the skill levels of certificated workers or potential employees.

6. Regulations for the qualification

This section should outline any entry requirements before learners may begin this qualification or workers undertake training and assessment in the workplace. If there are compulsory core and optional units, this should be identified here.

7. Schedule of Competency Standards

This will state the schedule of Competency Standards in which sequence they have to be achieved, from the simple to the complex as well as their clustering into modules.

8. Accreditation requirements before programmes may be offered or workplace assessment undertaken

This section provides guidance to the Department of Occupational Standards as training providers seek accreditation and industry assessors seek suitable workplaces for assessment.

The Department of Occupational Standards will develop generic quality management requirements for all providers. In addition, any specific industry requirements for the Competency Standards in the package must be met, before accreditation can be granted. In particular this applies to matters of health and safety. Industry may determine that

some Competency Standards may only be assessed in realistic work environments and this should be specified here.

9. Certification

The Department of Occupational Standards shall be the competent body to issue National Certificates.

10. Assessment consistency requirements

It is important that assessment throughout the country to be fair, valid, consistent and to the required standard. Department's representatives from the Assessment and Certification Division should be invited to meet the development group to determine a suitable modality of assessment for the Competency Standard under development.

11. Transition arrangements

This section can provide for learners whose programmes are incomplete at the time of change over to the new or revised qualification. The Department of Occupational Standards may develop an application form so that all learners can be dealt with fairly and are not disadvantaged.

12. Contact for comments

To be determined

13. Prerequisite diagram

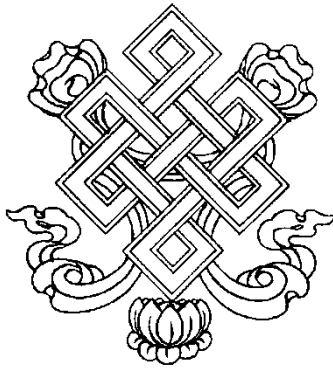
This section should show by level, the progression from Competency Standard to another so that sensible, achievable courses are

developed by training providers or for training undertaken by employees in the workplace.

Annex IV, COMPETENCY BASED TRAINING

A Competency Based Training system ensures that training and assessment (or recognition) are based on National Competency Standards. To ensure a responsive and high quality Technical Vocational Education and Training system in Bhutan, the system is committed to developing and maintaining a Competency Based Training (CBT) system that will be based upon the principles of:

- National Competency Standards which specify the competencies required by industries.
- Industry involvement in the TVET system.
- Validation of curriculum.
- Training to meet industry needs.
- Linking training and learning to the workplace.
- Competency Based Assessment.
- Recognition of competencies irrespective how it was gained.
- A quality assured system for accreditation of training programs.



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