

# **COMPETENCY STANDARD**

# Glazing

Level: 1

(Ceramic Sector)

**Competency Standard Code: CS-CER-GLZ-L1-EN-V1** 



National Skills Development Authority
Prime Minister's Office
Government of the People's Republic of Bangladesh

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This Competency Standard for **Glazing** is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order to meet the qualification of individuals who graduated through the established standard via competency-based assessment for a relevant job.

This document has been validated by NSDA in association with Light Engineering Sector, industry representatives, academia, related specialist, trainer and related employee.

Public and private institutions may use the information contained in this standard for activities benefitting Bangladesh.

#### Introduction

The NSDA aims to enhance an individual's employability by certifying completeness with skills. NSDA works to expand the skilling capacity of identified public and private training providers qualitatively and quantitatively. It also aims to establish and operationalize a responsive skills ecosystem and delivery mechanism through a combination of well-defined set of mechanisms and necessary technical supports.

Key priority economic growth sectors identified by the government have been targeted by NSDA to improve current job skills along with existing workforce to ensure required skills to industry standards. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training program. "Glazing" is selected as one of the priority occupations of Ceramic Sector. This standard is developed to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

Generally, a competency standard informs curriculum, learning materials, assessment and certification of trainees enrolled in Skills Training. Trainees who successfully pass the assessment will receive a qualification in the Bangladesh National Qualification Framework (BNQF) and will be listed on the NSDA's online portal.

This competency standard is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements. A series of stakeholder consultations, workshops were held to develop this document.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

#### **Overview**

A competency standard is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognising and assessing people's skills, and may also have optional support materials
- enable industry recognised qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of representative from NSDA, Key Institutions, ISC, and industry experts to identify the competencies required of an occupation in **Ceramic Sector**.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. CS acknowledge that people can achieve technical and vocational competency in many ways by emphasizing what the learner can do, not how or where they learned to do it.

With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guides

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- a chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements
- the Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide.

# Competency Standards for National Skill Certificate, Level-1 in Glazing in Ceramic Sector

# Level Descriptors of NSQF (BNQF 1-6)

| Level & Job classification                           | Knowledge Domain   | Skills Domain   | Responsibility Domain  |
|--|--|---|--|
| 6-Mid-Level<br>Manager/ Sub<br>Assistant<br>Engineer | Comprehensive actual and theoretical knowledge within a specific work or study area with an awareness of the validity and limits of that knowledge, able to analyse, compare, relate and evaluate. | Specialised and wider range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems. Communicate professional issues and solutions to the team and to external partners/users.  | Work under broad guidance and self-motivation to execute strategic and operational plan/s. Lead lower-level management. Diagnose and resolve problems within and among work groups.      |
| 5-Supervisor   | Broad knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to scrutinize and break information into parts by identifying motives or causes.     | Broad range of cognitive and practical skills required to generate solutions to specific problems in one or more work or study areas. Communicate practice-related problems and possible solutions to external partners.  | Work under guidance of management and self-direction to resolve specific issues. Lead and take responsibility for the work and actions of group/team members. Bridge between management. |
| 4-Highly<br>Skilled<br>Worker                        | Broader knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to solve problems to new situations by comparing and applying acquired knowledge.  | A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information. Communicate using technical terminology and IT technology with partners and users as per workplace requirements. | Work under minimal supervision in specific contexts in response to workplace requirements. Resolve technical issues in response to workplace requirements and lead/guide a team/ group.  |
| 3-Skilled<br>Worker                                  | Moderately broad<br>knowledge in a specific<br>work or study area, able to<br>perceive ideas and abstract<br>from drawing and design<br>according to workplace<br>requirements.                    | Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools. Communicate with his team and limited external partners upholding the values, nature and culture of the workplace               | Work or study under supervision with considerable autonomy. Participate in teams and responsible for group coordination.   |
| 2-Semi Skilled<br>Worker                             | Basic understanding of<br>underpinning knowledge<br>in a specific work or study<br>area, able to interpret and<br>apply common<br>occupational terms and<br>instructions.                          | Skills required to carry out simple tasks, communicate with his team in the workplace presenting and discussing results of his work with required clarity.  | Work or study under supervision in a structured context with limited scope of manipulation   |
| 1 –Basic<br>Skilled Worker                           | Elementary understanding of ability to interpret the underpinning knowledge in a specific study area, able to interpret common occupational terms and instructions.                                | Specific Basic skills required to carry out simple tasks. Interpret occupational terms and present the results of own work within guided work environment/under supervision.  | Work under direct supervision in a structured context with limited range of responsibilities.  |

# **List of Abbreviations**

| CS   | Competency Standard                            |
|------|--|
| ISC  | Industry Skills Council                        |
| NSDA | National Skills Development Authority          |
| BNQF | Bangladesh National Qualifications Framework   |
| OSH  | Occupational Safety and Health                 |
| PPE  | Personal Protective Equipment                  |
| SCVC | Standards and Curriculum Validation Committee  |
| STP  | Skills Training Provider                       |
| SOP  | Standard Operating Procedure                   |
| UoC  | Unit of Competency                             |
| ISO  | International Organization for Standardization |
| OSH  | Occupational Safety and Health                 |
| PPE  | Personal Protective Equipment                  |
| SOP  | Standard Operating Procedures                  |

# Approved by 37<sup>th</sup> Authority Meeting of NSDA Held on 21.10.2024

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# Competency Standards for National Skill Certificate, Level- 1 in Glazing in Ceramic Sector

# **Course Structure**

| SL        | Unit code and Title UOC  |   |       | Nominal |
|-----------|--------------------------|---|-------|---------|
| No        |                          | omit code and Title   | Level | (hours) |
| Gen       | eric Units of Competen   | ncies   |       |         |
| 1.        | GU-01-L2-V1              | Perform Computations Using Basic<br>Mathematical Concepts             | 2     | 15      |
| 2.        | GU-02-L2-V1              | Apply Occupational Safety and Health (OSH) Procedure in the Workplace | 2     | 15      |
| Sub T     | Total                    |   |       | 30      |
| Sect      | or Specific Units of Co  | mpetencies  |       |         |
| 3.        | SU-CER-01-L1-V1          | Work in the Ceramic Industry  | 1     | 20      |
| 4.        | SU-CER-02-L1-V1          | Use Measuring Tools and Equipment                                     | 1     | 20      |
| Sub       | o Total                  |   |       | 40      |
| Occi      | upation Specific Units ( | of Competencies   |       | -       |
| 5.        | OU-CER-GLZ-01-L1-V1      | Carry Out Dipping   | 1     | 100     |
| 6.        | OU-CER-GLZ-02-L1-V1      | Carry Out Waterfall Glazing   | 1     | 80      |
| 7.        | OU-CER-GLZ-03-L1-V1      | Carry Out Bottom Cutting and Coating                                  | 1     | 40      |
| 8.        | OU-CER-GLZ-04-L1-V1      | Carry Out Spraying  | 1     | 70      |
| Sub Total |                          |   | 290   |         |
| Tot       | tal Duration             |   |       | 360     |

# **Units & Elements at Glance**

# **Generic Competencies**

| Code        | Unit of competency   | Elements of competency  | Duration (hours) |
|-------------|--|---|------------------|
| GU-01-L2-V1 | Perform Computations Using Basic Mathematical Concepts                         | <ol> <li>Identify calculation requirements in the workplace</li> <li>Select appropriate mathematical methods for the calculation.</li> <li>Use tool/instrument to perform calculations</li> </ol> | 15               |
| GU-02-L2-V1 | Apply Occupational<br>Safety and Health<br>(OSH) procedure In<br>the Workplace | <ol> <li>Identify OSH policies and procedures</li> <li>Follow OSH procedure</li> <li>Report hazards and risks</li> <li>Respond to emergencies</li> <li>Maintain personal well-being</li> </ol>    | 15               |
|             |  | Total hours   | 30               |

# **Sector specific competencies**

| Code            | Unit of competency                      | Elements of competency  | Duration (hours) |
|-----------------|---|---|------------------|
| SU-CER-01-L1-V1 | Work in the<br>Ceramic Industry         | <ol> <li>Identify job roles and responsibilities</li> <li>Identify and observe OSH</li> <li>Plan work activities</li> <li>Work with others</li> </ol> | 20               |
| SU-CER-02-L1-V1 | Use Measuring<br>Tools and<br>Equipment | <ol> <li>Select measuring instruments</li> <li>Carry out measurements and calculation</li> <li>Maintain measuring instruments</li> </ol>              | 20               |
|                 |   | Total hours   | 40               |

# **Occupation specific competencies**

| Code                    | Unit of competency                         | Elements of competency   | Duration (hours) |
|-------------------------|--|--|------------------|
| OU-CER-GLZ-<br>01-L1-V1 | Carry Out Dipping                          | <ol> <li>Interpret glazing</li> <li>Follow OSH practices</li> <li>Prepare product for glazing</li> <li>Apply glaze on products</li> <li>Rectify routine problems</li> <li>Clean and maintain work area, tools and equipment</li> </ol> | 100              |
| OU-CER-GLZ-<br>02-L1-V1 | Carry Out<br>Waterfall Glazing             | <ol> <li>Follow OSH practices</li> <li>Prepare glazing equipment and product</li> <li>Apply glaze to formed products</li> <li>Rectify routine problems</li> <li>Clean and maintain work area, tools and equipment</li> </ol>           | 80               |
| OU-CER-GLZ-<br>03-L1-V1 | Carry Out Bottom<br>Cutting and<br>Coating | <ol> <li>Follow OSH practices</li> <li>Carry out foot cutting operation</li> <li>Carry out coating operation</li> <li>Identify common faults</li> <li>Clean and maintain work area, tools and equipment</li> </ol>                     | 40               |
| OU-CER-GLZ-<br>04-L1-V1 | Carry Out Spraying                         | <ol> <li>Follow OSH practices</li> <li>Prepare glaze and product</li> <li>Apply glaze on products</li> <li>Rectify routine problems</li> <li>Clean and maintain work area, tools and equipment</li> </ol>                              | 70               |
|                         | '  | Total Hours  | 290              |

# **Generic Units of Competencies**

|                               | <b>GU-01-L2-V1: Perform Computations Using Basic</b>                        |  |  |
|-------------------------------|---|--|--|
| <b>Unit Code and Title</b>    | Mathematical Concepts   |  |  |
| Nominal Hours                 | 15 Hours  |  |  |
|                               | This unit of competency requires the knowledge, skills and attitude         |  |  |
|                               | to perform computations using basic mathematical concepts in the            |  |  |
|                               | workplace.  |  |  |
| Unit Descriptor               | It specifically includes the tasks of identifying calculation               |  |  |
| •                             | requirements in the workplace, selecting appropriate mathematical           |  |  |
|                               | method/concept for the calculation and using appropriate                    |  |  |
|                               | instruments tools to perform calculation.                                   |  |  |
|                               | Performance Criteria  |  |  |
| <b>Elements of Competency</b> | <b>Bold &amp; Underlined</b> terms are elaborated in the Range of Variables |  |  |
|                               | Training Components   |  |  |
| 1. Identify calculation       | 1.1 Job requirements are identified   |  |  |
| requirements in the           | 1.2 <u>Measurements</u> are selected in accordance with job                 |  |  |
| workplace                     | requirement   |  |  |
|                               | 1.3 Calculation requirements are identified from workplace                  |  |  |
|                               | <u>information</u>  |  |  |
| 2. Select appropriate         | 2.1 Mathematical methods are identified                                     |  |  |
| mathematical methods          | 2.2 <b>Appropriate method</b> is selected to carry out the calculation r    |  |  |
| for the calculation.          | equirements   |  |  |
|                               | 2.3 Tolerance and clearance limits are identified and adjusted              |  |  |
|                               | according to the job requirements   |  |  |
| 3. Use tool/instrument to     | 3.1 Work instructions are confirmed and applied to the job in hand          |  |  |
| perform calculations          | 3.2 Materials to be measured are identified as per job specification        |  |  |
|                               | 3.3 Appropriate <b>tool/ instrument</b> is selected based on materials to   |  |  |
|                               | be measured   |  |  |
| Range of Variables            |   |  |  |
| Variable                      | Range (may include but not limited to)                                      |  |  |
|                               | 1.1 Length  |  |  |
| 1. Measurements               | 1.2 Width   |  |  |
|                               | 1.3 Weight  |  |  |
|                               | 1.4 Tolerance   |  |  |
|                               | 2.1 Job Order   |  |  |
|                               | 2.2 Design  |  |  |
| 2. workplace information      | 2.3 Working drawing   |  |  |
|                               | 2.4 Verbal instructions   |  |  |
|                               | 2.5 Written Instruction   |  |  |
|                               | 3.1 Addition  |  |  |
| 2 Appropriate method          | 3.2 Subtraction   |  |  |
| 3. Appropriate method         | 3.3 Division 3.4 Multiplication   |  |  |
|                               | <ul><li>3.4 Multiplication</li><li>3.5 Conversion</li></ul>                 |  |  |
|                               | 3.5 Conversion  |  |  |

|                             | 3.6     | Percentage and ratio calculation                                |
|-----------------------------|---------|---|
| 4. Tool/ Instrument         | 4.1     | Calculator  |
|                             | 4.2     | Scale   |
|                             | 4.3     | Measuring tape  |
|                             | 4.4     | Marker  |
| Evidence Guide              |         |   |
| The evidence must be auti   | hentic, | valid, sufficient, reliable, consistent and recent and meet the |
| requirements of the current | versio  | on of the Unit of Competency.                                   |
|                             | Asses   | ssment required evidence that the candidate:                    |
|                             | 1.1     | identified calculation requirements from workplace              |
|                             |         | information   |
|                             | 1.2     | selected appropriate method to carry out the calculation        |
|                             |         | requirements  |
| 1 Critical Assesses of      | 1.3     | selected measurements   |
| 1. Critical Aspects of      | 1.4     | selected appropriate methods                                    |
| Competency                  | 1.5     | used tool/instrument  |
|                             | 1.6     | added numbers   |
|                             | 1.7     | subtracted numbers  |
|                             | 1.8     | multiplied numbers.   |
|                             | 1.9     | divided numbers.  |
|                             | 1.10    | completed calculations using appropriate tools/instruments      |
|                             | 2.1.    | Numerical concept   |
|                             | 2.2.    | Basic mathematical methods such as addition, subtraction, m     |
| 2. Underpinning             |         | ultiplication and division and percentage.                      |
| Knowledge                   | 2.3.    | Mathematical language, symbols and terminology.                 |
|                             | 2.4.    | Measuring units   |
|                             | 3.1     | Interpret numerical concept                                     |
|                             | 3.2     | Interpret mathematical methods such as addition, subtraction,   |
| 3. Underpinning Skills      |         | multiplication and division and percentage.                     |
|                             | 3.3     | Interpret mathematical language, symbols and terminology.       |
|                             | 3.4     | Interpret measuring units                                       |
|                             | 4.1.    | Commitment to occupational health and safety                    |
|                             | 4.2.    | Environmental concerns  |
| 4. Underpinning             | 4.3.    | Eagerness to learn  |
| Attitudes                   | 4.4.    | Tidiness and timeliness   |
|                             | 4.5.    | Respect for rights of peers and seniors in workplace            |
|                             | 4.6.    | Communication with peers and seniors in workplace               |
|                             | 5.1.    | Work place Procedure  |
| 5 December I                | 5.2.    | Materials relevant to the proposed activity                     |
| 5. Resource Implications    | 5.3.    | All tools, equipment, material and documentation required.      |
|                             | 5.4.    | Relevant specifications or work instructions                    |
| 6. Methods of               | 6.1.    | Written Test  |
| Assessment                  | 6.2.    | Demonstration   |
|                             |         |   |

|                          | 6.3. | Oral Questioning  |
|--------------------------|------|---|
| 7. Context of Assessment | 7.1. | Competency assessment must be done in a NSDA accredited assessment center |
|                          | 7.2. | Assessment should be done by an NSDA certified/ nominated                 |
|                          |      | assessor  |

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

| Unit Code and                        | <b>GU-02-L2-V1: Apply Occupational Safety and</b>   |
|--------------------------------------|---|
| Title                                | Health (OSH) Procedure in the Workplace   |
| Unit Descriptor                      | This unit covers the knowledge, skills and attitudes required to apply occupational safety and health (OSH) procedure in the workplace.  It specifically includes the task of identifying OSH policies and procedures, following OSH procedure, reporting hazards and risks, responding to emergencies and maintaining personal wellbeing.                          |
| Nominal Hours                        | 15 Hours  |
| Elements of<br>Competency            | Performance Criteria  Bold & Underlined terms are elaborated in the Range of Variables  |
| Identify OSH policies and procedures | and stated  |
|                                      | <ul> <li>1.2. <u>Safety signs and symbols</u> are identified and followed</li> <li>1.3. Emergency response, evacuation procedures and other contingency measures are determined according to workplace requirements</li> </ul>  |
| 2. Follow OSH                        | 2.1 <b>Personal protective equipment (PPE)</b> is selected and  |
| procedure                            | <ul> <li>collected as required</li> <li>2.2 Personal protective equipment (PPE) is correctly used in accordance with organization OSH procedures and practices</li> <li>2.3 A clear and tidy workplace is maintained as per workplace standard</li> <li>2.4 PPE is maintained to keep them operational and compliant with OSH regulations</li> </ul>                |
| 3. Report hazards and risks          | 3.1 <u>Hazards</u> and risks are identified, assessed and controlled 3.2 Incidents arising from hazards and risks are reported to designated authority  |
| 4. Respond to emergencies            | <ul> <li>4.1 Alarms and warning devices are responded</li> <li>4.2 Workplace emergency procedures are followed</li> <li>4.3 Contingency measures during workplace accidents, fire and other emergencies are recognized and followed in accordance with organization procedures</li> <li>4.4 First aid procedures are applied during emergency situations</li> </ul> |
| 5. Maintain personal well-being      | <ul> <li>5.1 OSH policies and procedures are adhered to OSH awareness programs are participated in as per workplace guidelines and procedures.</li> <li>5.2 Corrective actions are implemented to correct unsafe condition in the workplace</li> </ul>  |

|                        | 5.3                | "Fit to work" records are updated and maintained         |  |
|------------------------|--------------------|--|--|
|                        |                    | according to workplace requirements                      |  |
| Range of Variables     | Range of Variables |  |  |
| Variables              | Ran                | ge (may include but not limited to):                     |  |
| 1. OSH policies        | 1.1.               | Bangladesh standards for OSH                             |  |
|                        | 1.2.               | Fire Safety Rules and Regulations                        |  |
|                        | 1.3.               | Code of Practice   |  |
|                        | 1.4.               | Industry Guidelines                                      |  |
| 2. Safe operating      | 2.1                | Orientation on emergency exits, fire extinguishers, fire |  |
| procedures             |                    | escape, etc.   |  |
|                        | 2.2                | Emergency procedures                                     |  |
|                        | 2.3                | First Aid procedures                                     |  |
|                        | 2.4                | Tagging procedures                                       |  |
|                        | 2.5                | Use of PPE   |  |
|                        | 2.6                | Safety procedures for hazardous substances               |  |
| 3. Safety signs and    | 3.1                | Direction signs (exit, emergency exit, etc.)             |  |
| symbols                | 3.2                | First aid signs  |  |
|                        | 3.3                | Danger Tags  |  |
|                        | 3.4                | Hazard signs   |  |
|                        | 3.5                | Safety tags  |  |
|                        | 3.6                | Warning signs  |  |
| 4. Personal Protective | 4.1                | Gas Mask   |  |
| Equipment (PPE)        | 4.2                | Gloves   |  |
|                        | 4.3                | Safety boots   |  |
|                        | 4.4                | Face mask  |  |
|                        | 4.5                | Overalls   |  |
|                        | 4.6                | Goggles and safety glasses                               |  |
|                        | 4.7                | Sun block  |  |
|                        | 4.8                | Chemical/Gas detectors                                   |  |
| 5. Hazards             | 5.1                | Chemical hazards   |  |
|                        | 5.2                | Biological hazards                                       |  |
|                        | 5.3                | Physical Hazards   |  |
|                        | 5.4                | Mechanical and Electrical Hazard                         |  |
|                        | 5.5                | Mental hazard  |  |
|                        | 5.6                | Ergonomic hazard   |  |
| 6. Emergency           | 6.1                | Fire fighting  |  |
| procedures             | 6.2                | Earthquake   |  |
| -                      | 6.3                | Medical and first aid                                    |  |
|                        | 6.4                | Evacuation   |  |
|                        |                    |  |  |

|                         | 1        |   |
|-------------------------|----------|---|
| 7. Contingency          | 7.1      | Evacuation  |
| measures                | 7.2      | Isolation   |
|                         | 7.1      | Decontamination   |
| 8. "Fit to Work"        | 8.1      | Medical Certificate every year                                    |
| records                 | 8.2      | Accident reports, if any  |
|                         | 8.3      | Eye vision certificate  |
| <b>Evidence Guide</b>   | <u> </u> |   |
| The evidence must be a  | uthen    | tic, valid, sufficient, reliable, consistent, recent and meet all |
| requirements of current | versio   | n of the Unit of Competency                                       |
|                         | Asse     | essment required evidence that the candidate:                     |
|                         | 1.1      | stated OSH policies and safe operating procedures                 |
|                         | 1.2      | followed safety signs and symbols                                 |
| Critical aspects of     | 1.3      | used personal protective equipment (PPE)                          |
| competency              | 1.4      | maintained workplace clear and tidy                               |
| Competency              | 1.5      | assessed and Controlled hazards                                   |
|                         | 1.6      | followed emergency procedures                                     |
|                         | 1.7      | followed contingency measures                                     |
|                         | 1.8      | implemented corrective actions                                    |
|                         | 2.1      | Define OSH  |
|                         | 2.2      | OSH Workplace Policies and Procedures                             |
|                         | 2.3      | Work safety procedures  |
|                         | 2.4      | Emergency procedures  |
| 2. Underpinning         | 2.5      | Hazard control procedure  |
| knowledge               | 2.6      | Different types of hazards  |
|                         | 2.7      | PPE and there uses  |
|                         | 2.8      | Personal hygiene practices  |
|                         | 2.9      | OSH awareness   |
|                         | 3.1      | Accessing OSH policies  |
|                         | 3.2      | Using of PPE  |
| 3. Underpinning skills  | 3.3      | Handling cleaning tools and equipment                             |
|                         | 3.4      | Writing report  |
|                         | 3.5      | Responding to emergency procedures                                |
|                         | 4.1      | Commitment to occupational health and safety                      |
|                         | 4.2      | Sincere and honest to duties                                      |
|                         | 4.3      | Promptness in carrying out activities                             |
| 4 Paguirad attituda     | 4.4      | Environmental concerns  |
| 4. Required attitude    | 4.5      | Eagerness to learn  |
|                         | 4.6      | Tidiness and timeliness   |
|                         | 4.7      | Respect of peers and seniors in workplace                         |
|                         | 4.8      | Communicate with peers and seniors in workplace                   |

Workplace

5.1

5. Resource

implications

|               | 5.2 | Equipment and outfits appropriate in applying safety    |
|---------------|-----|---|
|               |     | measures  |
|               | 5.3 | Tools, equipment, materials and documentation required  |
|               | 5.4 | OSH Policies and Procedures                             |
|               | Con | npetency should be assessed by:                         |
| 6. Methods of | 6.1 | Written test  |
| assessment    | 6.2 | Demonstration   |
|               | 6.3 | Oral questioning  |
|               | 7.1 | Competency assessment must be done in NSDA accredited   |
| 7. Context of |     | assessment centre                                       |
| assessment    | 7.2 | Assessment should be done by a NSDA certified/nominated |
|               |     | assessor  |

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

**Sector Specific Units of Competencies** 

| Unit Code and Title                     | SU-CER-01-L1-V1: Work in the Ceramic Industry  |  |
|---|--|--|
| Nominal Hours                           | 20 Hours   |  |
| Unit Descriptor                         | This unit covers the knowledge, skills and attitudes required to work in the ceramic industry. It includes identifying job roles and responsibilities and observing OSH, planning work activities and working with others.   |  |
| Elements of                             | Performance Criteria   |  |
| Competency                              | <b>Bold and Underlined</b> terms are elaborated in the Range of Variables.   |  |
| Identify job roles and responsibilities | <ul><li>1.1 Job roles and responsibilities are identified.</li><li>1.2 Relationships within the ceramic industry employees are identified.</li></ul>   |  |
| 2. Identify and observe OSH             | 2.1 Personal Protective Equipment (PPE) is identified and observed. 2.2 Safe work practices are followed when using equipment in the work environment.   |  |
|   | 2.3 <b>Hazards</b> related to workplace are identified.  |  |
| 3. Plan work activities                 | <ul> <li>3.1 Common goals, objectives and tasks are identified and clarified with appropriate persons.</li> <li>3.2 Individual tasks are determined and agreed on in accordance with workplace environment.</li> </ul>   |  |
| 4. Work with others                     | <ul> <li>4.1 Effective interpersonal skills are applied to interact with others and to contribute to activities and objectives.</li> <li>4.2 Assigned tasks are performed in accordance with job requirements, specifications and workplace environment.</li> <li>4.3 Work requirements are confirmed with colleagues</li> </ul> |  |
| Range of Variables                      |  |  |
| Variables                               | Range (may include but not limited to):  |  |
| Personal Protective     Equipment (PPE) | <ul> <li>1.1 Apron</li> <li>1.2 Hair net / Cap</li> <li>1.3 Hand gloves</li> <li>1.4 Goggles</li> <li>1.5 Safety shoes</li> <li>1.6 Mask</li> <li>1.7 Ear-protector</li> </ul>   |  |
| 2. Hazards                              | <ul> <li>2.1 Mechanical hazards</li> <li>2.2 Electrical hazards</li> <li>2.3 Fire hazard</li> <li>2.4 Chemical hazard</li> </ul>   |  |

|    |                                   | 2.5 | Sound hazard                                     |
|----|-----------------------------------|-----|--|
|    |                                   | 2.6 | Environmental hazard and other workplace hazards |
|    | 3. Effective interpersonal skills | 3.1 | Basic listening and speaking skills              |
| 2  |                                   | 3.2 | Use of terminology and jargon                    |
| 3. |                                   | 3.3 | Communicating and receiving feedback             |
|    |                                   | 3.4 | Interpretation of instructions, and              |
|    |                                   | 3.5 | Basic principles of effective communication      |

# **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

|                            | Assessment required evidence that the candidate:              |
|----------------------------|---|
| 1. Critical aspects of     | 1.1 identified job roles and responsibilities; and            |
| competency                 | 1.2 demonstrated working in the ceramic industry.             |
|                            |   |
| 2. Underpinning            | 2.1 Safety rules and procedure.                               |
| knowledge                  | 2.2 Safety requirements in handling tools.                    |
| inio wienge                | 2.3 Working with others.                                      |
|                            | 3.1 Reading skills required to interpret work instruction and |
| 2. Un domning in a strille | numerical skills.   |
| 3. Underpinning skills     | 3.2 Communicating skills.                                     |
|                            | 3.3 Problem solving in emergency situation.                   |
|                            | 4.1 Commitment to occupational health and safety              |
| 4 II. 1                    | 4.2 Environmental concerns                                    |
| 4. Underpinning attitudes  | 4.3 Eagerness to learn  |
| attitudes                  | 4.4 Tidiness and timeliness                                   |
|                            | 4.5 Respect for rights of peers and seniors in workplace      |
|                            | The following resources must be provided                      |
| 5. Resource                | 5.1. Workplace (actual or simulated)                          |
|                            | 5.2. Tools, spares parts & physical facilities appropriate to |
| implications               | perform activities.   |
|                            | 5.3. Materials, consumable to perform activities.             |
| 6. Methods of              | 6.1 Demonstration   |
| assessment of              | 6.2 Oral questioning  |
|                            | 6.3 Written test  |
|                            | 7.1 Competency assessment must be done in NSDA accredited     |
| 7. Context of              | assessment centre   |
| assessment                 | 7.2 Assessment should be done by a NSDA certified/nominated   |
|                            | assessor  |

Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

| Unit Code and Title                            | SU-CER-02-L1-V1: Use Measuring Tools and Equipment  |
|--|---|
| Nominal Hours                                  | 20 Hours  |
| Unit Descriptor                                | This unit covers the knowledge, skills and attitudes required to use measuring tools and equipment. It includes selecting measuring instruments, carrying out measurements and calculation and maintaining measuring instruments  |
| Elements of<br>Competency                      | Performance Criteria  Bold and Underlined terms are elaborated in the Range of Variables.   |
| Select measuring instruments                   | <ul> <li>1.1 Object or component to be measured is identified.</li> <li>1.2 Correct specifications are obtained from relevant source.</li> <li>1.3 Required <u>measuring instrument</u> is selected in accordance with job requirements.</li> </ul>   |
| Carry out     measurements and     calculation | <ul> <li>2.1 Accurate measurements are obtained in accordance with job requirement.</li> <li>2.2 Basic calculation is needed to complete for performed work tasks.</li> <li>2.3 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks.</li> <li>2.4 Numerical calculation is checked and corrected for accuracy in accordance with job requirement.</li> <li>2.5 Instruments are read according to the limit of accuracy of the tool.</li> </ul> |
| 3. Maintain measuring instruments              | <ul><li>3.1 Measuring instruments are checked for damage prior to storage.</li><li>3.2 Measuring instruments are cleaned before and after using.</li></ul>  |
| Range of Variables                             |   |
| Variables                                      | Range (may include but not limited to):   |
| Measuring instruments                          | <ul> <li>1.1 Measuring tape</li> <li>1.2 Calipers (inside-outside)</li> <li>1.3 Thickness gauge</li> <li>1.4 Torque gauge</li> <li>1.5 Small hole gauge</li> <li>1.6 Try square</li> <li>1.7 Protractor</li> <li>1.8 Combination gauge</li> <li>1.9 Steel rule</li> </ul>   |
| 2. Basic calculation                           | <ul><li>2.1 Volume</li><li>2.2 Area</li><li>2.3 Displacement</li></ul>  |

| 2.4  | Inside diameter  |
|------|------------------|
| 2.5  | Circumference    |
| 2.6  | Radius           |
| 2.7  | Length           |
| 2.8  | Thickness        |
| 2.9  | Outside diameter |
| 2.10 | Taper            |
| 2.11 | Out of roundness |

# **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

|                           | Assessment required evidence that the candidate:               |
|---------------------------|--|
| 1.Critical aspects of     | 1.1 selected measuring instruments;                            |
| competency                | 1.2 carried-out measurements and calculations;                 |
| competency                | 1.3 maintained measuring instruments.                          |
|                           | 2.1 Types of measurements.                                     |
| 2 II 1 ' '                | **   |
| 2. Underpinning           | 2.2 Types of measuring instruments and its use.                |
| knowledge                 | 2.3 Formula for volume, area, perimeter and other geometric    |
|                           | figures.   |
|                           | 3.1 Caring and handling measuring instruments.                 |
|                           | 3.2 Calibrating and using measuring instruments.               |
|                           | 3.3 Performing calculation by addition, subtraction,           |
| 3. Underpinning skills    | multiplication and division.                                   |
|                           | 3.4 Visualizing objects and shapes.                            |
|                           | 3.5 Interpreting formula for volume, area, perimeter and other |
|                           | geometric figures.   |
|                           | 4.1 Commitment to occupational health and safety               |
|                           | 4.2 Environmental concerns                                     |
| 4. Underpinning attitudes | 4.3 Eagerness to learn   |
|                           | 4.4 Tidiness and timeliness                                    |
|                           | 4.5 Respect for rights of peers and seniors in workplace       |
|                           | The following resources must be provided:                      |
| 5 Descriptions            | 5.1. Workplace (actual or simulated)                           |
| 5. Resource implications  | 5.2. All tools, equipment and materials required               |
|                           | 5.3. Materials, consumable to perform activities               |
|                           | 6.1 Demonstration  |
| 6.Methods of assessment   | 6.2 Oral questioning   |
|                           | 6.3 Written test   |
|                           | 7.1 Competency assessment must be done in NSDA accredited      |
| 7. Context of assessment  | assessment centre  |
|                           | 7.2 Assessment should be done by a NSDA certified/nominated    |
|                           | assessor   |

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| Unit Code and Title     |            | OU-CER-GLZ-01-L1-V1: Carry Out Dipping   |
|-------------------------|------------|--|
| Nominal Hours           |            | 100 Hours  |
| Unit Descriptor         |            | This unit covers the knowledge, skills and attitudes required to carry out dipping. It includes following OSH practices, preparing product for glazing, applying glaze on products, rectifying routine problems, cleaning and maintaining work area, tools and equipment.  |
| Elements of             |            | Performance Criteria   |
|                         |            | Bold and Underlined terms are elaborated in the Range of   |
| Competency              |            | Variables.   |
| 1. Interpret            | glazing    | 1.1 Glazing operation is interpreted   |
| operation               | SIMZING    | 1.2 Application of glazing is comprehended   |
| орегиноп                |            | 1.3 <u>Glazing operation</u> is classified   |
| 2. Follow OSH practices |            | <ul> <li>2.1 All safety requirements / regulations are adhered to before, during and after use.</li> <li>2.2 Unsafe or faulty tools are identified and repaired according to designated procedures before, during and after use.</li> <li>2.3 Personal Protective Equipment (PPE) is worn and Occupational Safety and Health (OSH) instructions are followed according to job specification.</li> </ul>  |
| 3. Prepare priglazing   | roduct for | <ul> <li>3.1 Glazing requirements are identified as per work schedule/specification.</li> <li>3.2 Glaze slip is screened for remove foreign particles</li> <li>3.3 Equipment is adjusted and glazes are stirring as required.</li> <li>3.4 Biscuit ware is de-dusted and cleaned as per job requirement.</li> <li>3.5 Biscuit wares are checked and defects are identified as per specification.</li> <li>3.6 <u>Defected</u> wares are rectified or rejected as per enterprise procedure.</li> <li>3.7 Water is sprayed on biscuit wares as required.</li> <li>3.8 Glaze slip density and viscosity is adjusted in accordance with job requirement.</li> <li>3.9 Sedimentation is controlled as per SOP;</li> </ul> |
| 4. Apply g products     | alaze on   | <ul> <li>4.1 Biscuit wares are dipped in the glaze bucket as per company procedure.</li> <li>4.2 Dipping time and glaze thickness are maintained as per job specification.</li> <li>4.3 Glazed ware is checked to ensure no finger spot on the surface of the product.</li> <li>4.4 Glazed ware is placed on conveyer belt</li> <li>4.5 Foot of glazed wares are wiped as required.</li> </ul>   |

| 5. Rectify routine problems  6. Clean and maintain | <ul> <li>4.6 Glazed ware is loaded on conveyer for drying if required</li> <li>4.7 Glazed ware is loaded on kiln furniture/roller hearth kiln using manually/automatically</li> <li>5.1 Product faults are identified and rectified that can occur during the operation in accordance with procedures / work instructions.</li> <li>5.2 Records and log books are maintained as per instruction.</li> <li>5.3 Non-routine problems are identified and reported to designated person.</li> <li>5.1 Tools and equipment are cleaned, maintained and stored as per workplace procedures;</li> </ul> |  |  |
|--|--|--|--|
| work area, tools and equipment                     | <ul><li>5.2Faulty and defective equipment is tagged and reported in accordance with workplace procedures;</li><li>5.3Work area is cleared and waste materials are removed in accordance with workplace standards</li></ul>   |  |  |
| Range of Variables                                 |  |  |  |
| Variables  | Range (may include but not limited to):  |  |  |
| 1. Glazing operation                               | 1.1 Dipping 1.1.1 Manual 1.1.2 Automatic 1.2 Waterfall 1.2.1 Compana 1.2.2 Vela 1.3 Spraying   |  |  |
| 2. Personal Protective Equipment (PPE)             | <ul> <li>2.1. Musk</li> <li>2.2. Safety glasses / goggles</li> <li>2.3. Hair nets</li> <li>2.4. Ear muffs / plugs</li> <li>2.5. Gloves</li> <li>2.6. Footwear</li> <li>2.7. Protective clothing</li> </ul>   |  |  |
| 3. Defects   | 3.1 Chipping 3.2 Crack 3.1.1 Cooling 3.1.2 Surface 3.3 Forming wave 3.4 Iron spot 3.5 Pin hole 3.6 Blistering 3.7 Glaze pilling  |  |  |
| 4. Glaze   | 4.1 Transparent 4.2 Translucent  |  |  |

|                        | 4.3 | Opaque                              |
|------------------------|-----|-------------------------------------|
|                        | 4.4 | Matt                                |
|                        | 5.1 | Table ware                          |
|                        | 5.2 | Sanitary ware                       |
| 5. Product             | 5.3 | Tiles                               |
| 3. Product             | 5.4 | Ceramic bricks / Heavy clay product |
|                        | 5.5 | Pottery                             |
|                        | 5.6 | Insulator                           |
|                        | 6.1 | Trolley                             |
|                        | 6.2 | Bucket/Tank                         |
|                        | 6.3 | Stirrer                             |
| 6. Tools and equipment | 6.4 | Conveyor                            |
| o. Tools and equipment | 6.5 | Pycnometer                          |
|                        | 6.6 | Viscometer                          |
|                        | 6.7 | Dial gauge                          |
|                        | 6.8 | Weighing balance                    |

#### **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

|                           | Assessment required evidence that the candidate: |  |  |  |
|---------------------------|--|--|--|--|
| 1. Critical aspects of    | 1.1  | interpreted glazing operation                        |  |  |
| competency                | 1.2  | applied glaze on products;                           |  |  |
| competency                | 1.3  | glazing faults are recognized;                       |  |  |
|                           | 1.4  | foot of glazed wares is wiped.                       |  |  |
|                           | 2.1  | Glaze application techniques.                        |  |  |
| 2. Hadaminaina            | 2.2  | Density measurement.                                 |  |  |
| 2. Underpinning           | 2.3  | Viscosity measurement.                               |  |  |
| knowledge                 | 2.4  | Thickness measurement.                               |  |  |
|                           | 2.5  | Weight measurement.                                  |  |  |
|                           | 3.1  | Dipping ware in the glaze.                           |  |  |
|                           | 3.2  | Adjusting glaze dipping.                             |  |  |
| 3. Underpinning skills    | 3.3  | Placing glazed ware on conveyer belt.                |  |  |
|                           | 3.4  | Measuring density, viscosity and thickness.          |  |  |
|                           | 3.5  | Wiping foot of the glazed ware                       |  |  |
|                           | 4.1  | Commitment to occupational health and safety         |  |  |
|                           | 4.2  | Environmental concerns                               |  |  |
| 4. Underpinning attitudes | 4.3  | Eagerness to learn                                   |  |  |
|                           | 4.4  | Tidiness and timeliness                              |  |  |
|                           | 4.5  | Respect for rights of peers and seniors in workplace |  |  |
|                           | 1  |  |  |  |

|                          | The following resources must be provided:                   |
|--------------------------|---|
| 5 Descripcionalizations  | 5.1. Workplace (actual or simulated)                        |
| 5. Resource implications | 5.2. All tools, equipment and materials required            |
|                          | 5.3. Materials, consumable to perform activities            |
|                          | 6.4 Demonstration   |
| 6.Methods of assessment  | 6.5 Oral questioning  |
|                          | 6.6 Written test  |
|                          | 7.3 Competency assessment must be done in NSDA accredited   |
| 7. Context of assessment | assessment centre   |
| 7. Context of assessment | 7.4 Assessment should be done by a NSDA certified/nominated |
|                          | assessor  |

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| Unit Code and Title                      | OU-CER-GLZ-02-L1-V1: Carry Out Waterfall Glazing   |  |  |
|--|--|--|--|
| Nominal Hours                            | 80 Hours   |  |  |
| Unit Descriptor                          | This unit covers the knowledge, skills and attitudes required to carry out waterfall glazing. It includes following OSH practices, preparing glazing equipment and product, applying glaze to formed product, rectifying routine problems and cleaning and maintaining work area, tools and equipment.   |  |  |
| <b>Elements of Competency</b>            | Performance Criteria   |  |  |
| Follow OSH practices                     | <ol> <li>All safety requirements I regulations are adhered to before, during and after use.</li> <li>Unsafe or faulty tools are identified and repaired according to designated procedures before, during and after use.</li> <li>Personal Protective Equipment (PPE) is worn and OSH (Occupational Safety and Health) instructions are followed according to job specification.</li> <li>Work is done considering the health <u>hazard</u></li> <li>Glazing requirements are identified from production schedule</li> </ol>   |  |  |
| 2. Prepare glazing equipment and product | <ul> <li>/ specification.</li> <li>2.2 Equipment are adjusted as required.</li> <li>2.3 Product de-dusting is performed to ensure the quality as per specification.</li> <li>2.4 Product surface temperature is checked as required.</li> <li>2.5 Water is sprayed on the products as required.</li> <li>2.6 Density and viscosity of glaze slip is checked and ensured quality of product according to job specification.</li> <li>2.7 Sieving is performed using vibrator/mesh if necessary</li> <li>2.8 Flow of falling glaze is controlled as per job requirement.</li> <li>2.9 Glaze pick-up is ensured as required.</li> </ul> |  |  |
| 3. Apply glaze on formed products        | <ul> <li>3.1 Glaze is applied to specified <u>measurement</u> on product as per instruction.</li> <li>3.2 Excess or spilt glaze are recovered for treatment or recycling.</li> <li>3.3 Production <u>process</u> is monitored as per enterprise procedure.</li> <li>3.4 Product faults are identified and rectified the problem if any as per company procedure.</li> <li>4.1 <u>Glaze faults</u> are identified and rectified that can occur during</li> </ul>  |  |  |
| 4. Rectify routine problems              | the operation as per workplace procedure.  4.2 Machine failure causes are identified and rectified in accordance with procedures / work instructions.  |  |  |

|                        | 4.3 Records and log books of machine operations are maintained       |
|------------------------|--|
|                        | as per instruction.  |
|                        | 4.4 Irregularities are identified and reported to designated person  |
|                        | as per company procedure.  |
|                        | 5.1 <b>Tools and equipment</b> are cleaned, maintained and stored as |
|                        | per workplace procedures.  |
| 5. Clean and maintain  | 5.2 Faulty and defective equipment is tagged and reported in         |
| work area, tools and   | accordance with workplace procedures.                                |
| equipment              | 5.3 Work area is cleared and waste materials are removed in          |
|                        | accordance with workplace standards                                  |
| Range of Variables     | accordance with workplace standards                                  |
|                        |  |
| Variables              | Range (may include but not limited to):                              |
|                        | 1.1 Musk   |
|                        | 1.2 Safety glasses / goggles   |
| 1. Personal Protective | 1.3 Hair nets  |
| Equipment (PPE)        | 1.4 Ear muffs / plugs  |
| Equipment (1 1 E)      | 1.5 Gloves   |
|                        | 1.6 Footwear   |
|                        | 1.7 Protective clothing  |
|                        | 2.1 Exposure hazards in glaze  |
|                        | 2.2 Toxicity of glazes   |
| 2. Hazards             | 2.3 Physical   |
|                        | 2.4 Mechanical   |
|                        | 2.5 Electrical   |
|                        | 3.1 Tiles  |
|                        | 3.1.1 Wall tiles   |
|                        | 3.1.2 Floor tiles  |
|                        | 3.1.3 Decor/ border tiles  |
| 3. Product             | 3.2 Tableware  |
| 3. Troduct             | 3.2.1 Flat ware  |
|                        | 3.2.2 Hollow ware  |
|                        | 3.3 Sanitary ware  |
|                        | 3.4 Ceramic bricks/heavy clay  |
|                        | 3.5 Insulator  |
| 4. Measurement         | 4.1 Thickness  |
| 4. Weasurement         | 4.2 Weight   |
|                        | 5.1 Dipping  |
|                        | 5.2 Waterfall  |
| 5 Draggers             | 5.2.1 Compana  |
| 5. Processes           | 5.2.2 Vela   |
|                        | 5.3 Spraying   |
|                        | 5.3.1 Airless Spraying   |
|                        |  |

|                        | 5.3.2 Disc Spraying                     |  |  |  |  |
|------------------------|---|--|--|--|--|
|                        | 5.3.3 Spray gun                         |  |  |  |  |
|                        | 6.1 For tiles                           |  |  |  |  |
|                        | 6.1.1 Pin holing                        |  |  |  |  |
|                        | 6.1.2 Crazing Ink spot                  |  |  |  |  |
|                        | 6.1.3 Glaze removing                    |  |  |  |  |
|                        | 6.1.4 Wavy glaze                        |  |  |  |  |
|                        | 6.1.5 Blistering                        |  |  |  |  |
|                        | 6.1.6 Iron spot                         |  |  |  |  |
|                        | 6.1.7 Bubbles/Dimple                    |  |  |  |  |
|                        | 6.1.8 Fall cut                          |  |  |  |  |
|                        | 6.1.9 Cracking                          |  |  |  |  |
|                        | 6.1.9.1 Cooling                         |  |  |  |  |
| 6. Glaze fault         | 6.1.9.2 Surface                         |  |  |  |  |
| 6. Graze rault         | 6.2 Table ware and sanitary ware        |  |  |  |  |
|                        | 6.2.1 Pinhole                           |  |  |  |  |
|                        | 6.2.2 Glaze removing                    |  |  |  |  |
|                        | 6.2.3 Wavy glaze                        |  |  |  |  |
|                        | 6.2.4 Iron spot                         |  |  |  |  |
|                        | 6.2.5 Bubbles/Dimple                    |  |  |  |  |
|                        | 6.2.6 Crawling                          |  |  |  |  |
|                        | 6.2.7 Under glaze (UG)                  |  |  |  |  |
|                        | 6.2.8 Deep/Light glaze                  |  |  |  |  |
|                        | 6.2.9 Cracking                          |  |  |  |  |
|                        | 6.2.10 Cooling                          |  |  |  |  |
|                        | 6.2.11 Surface                          |  |  |  |  |
|                        | 7.1 Belt Glazing (Compana/Vela)/Dipping |  |  |  |  |
|                        | 7.2 Spray (Nozzle/disc/gun)             |  |  |  |  |
|                        | 7.3 Stirrer tank                        |  |  |  |  |
|                        | 7.4 Delivery pump                       |  |  |  |  |
|                        | 7.5 Vibrator                            |  |  |  |  |
|                        | 7.6 Iron separator/magnetic separator   |  |  |  |  |
|                        | 7.7 Viscometer / Ford Viscosity Cup     |  |  |  |  |
| 7. Tools and equipment | 7.8 Pycnometer                          |  |  |  |  |
|                        | 7.9 Weighing balance                    |  |  |  |  |
|                        | 7.10 Weighing Tray                      |  |  |  |  |
|                        | 7.11 Sponge                             |  |  |  |  |
|                        | 7.12 Stop watch                         |  |  |  |  |
|                        | 7.13 Litter Pot                         |  |  |  |  |
|                        | 7.14 Brush                              |  |  |  |  |
| Evidence Guide         | <u> </u>                                |  |  |  |  |

## **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

|                           | A   |
|---------------------------|---|
|                           | Assessment required evidence that the candidate:  |
|                           | 1.1 ware de-dusting is performed to ensure the quality of product   |
| 1. Critical aspects of    | as per specification;   |
| competency                | <ul><li>1.2 water is sprayed on the products as required;</li><li>1.3 flow of falling glaze is controlled as per job requirement;</li></ul> |
| competency                | 1.4 applied glaze to the product as per specified measurement;  |
|                           | and   |
|                           | 1.5 recognized and rectified glazing faults   |
|                           | 2.1 Glaze application techniques  |
|                           | 2.2 Glaze properties  |
|                           | 2.3 Density and Viscosity measurement techniques  |
|                           | 2.4 Causes of problems  |
| 2. Underpinning           | 2.4.1 product surface condition   |
| knowledge                 | 2.4.2 pin-holing  |
| Knowledge                 | 2.4.3 glaze wave  |
|                           | 2.4.4 pilling   |
|                           | 2.4.5 chipping  |
|                           | 2.4.6 equipment problems.   |
|                           | 3.1 Operating machine   |
|                           | 3.2 Adjusting parameters  |
|                           | 3.3 Adjusting glaze flow  |
| 3. Underpinning skills    | 3.4 Monitoring production process   |
|                           | 3.5 Trouble shooting of machine   |
|                           | 3.6 Maintaining log book and records  |
|                           | 4.1 Commitment to occupational safety and health.   |
|                           | 4.2 Communication with peers, sub-ordinates and seniors in  |
|                           | workplace.  |
|                           | 4.3 Promptness in carrying out activities.  |
| 4. Underpinning attitudes | 4.4 Tidiness and timeliness.  |
|                           | 4.5 Respect for rights of peers, sub-ordinates and seniors in   |
|                           | workplace.  |
|                           | 4.6 Environmental concern.  |
|                           | 4.7 Sincere and honest to duties.   |
|                           | The following resources must be provided:   |
| 5. Resource implications  | 5.1. Workplace (actual or simulated)  |
|                           | 5.2. All tools, equipment and materials required  |
|                           | 5.3. Materials, consumable to perform activities  |
|                           | 6.1 Demonstration   |
| 6. Methods of assessment  | 6.2 Oral questioning  |
|                           | 6.3 Written test  |

|                          | 7.1                      | Competency assessment must be done in NSDA accredited   |                   |
|--------------------------|--------------------------|---|-------------------|
| 7                        | 7. Context of assessment |   | assessment centre |
| 7. Context of assessment | 7.2                      | Assessment should be done by a NSDA certified/nominated |                   |
|                          |                          |   | assessor          |

## **Accreditation Requirements**

Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

| Unit Code and Title  | OU-CER-GLZ-03-L1-V1: Carry Out Bottom Cutting and Coating  |  |  |
|--|--|--|--|
| Nominal Hours  | 40 Hours   |  |  |
| Unit Descriptor  | This unit covers the knowledge, skills and attitudes required to carry out bottom cutting and coating.  It includes following OSH practices, preparing coating equipment and product, applying coat to glazed product, rectifying routine problems and cleaning and maintaining work area, tools and equipment.  |  |  |
|  | Performance Criteria   |  |  |
| <b>Elements of Competency</b>  | <b>Bold and Underlined</b> terms are elaborated in the Range of  |  |  |
|  | Variables.   |  |  |
| Follow OSH practices   | <ul> <li>1.1 All safety requirements I regulations are adhered to before, during and after use.</li> <li>1.2 Unsafe or faulty tools are identified and repaired according to designated procedures before, during and after use.</li> <li>1.3 Personal Protective Equipment (PPE) is worn and OSH (Occupational Safety and Health) instructions are followed according to job specification</li> </ul>   |  |  |
|  | 2.1. <u>Cutting materials</u> are collected and measured as per product  |  |  |
| 2. Carry out foot cutting operation  | requirement  2.2. Machine is set and adjusted and ensured safe procedure  2.3. Bottom of <b>products</b> is cleaned as per instruction   |  |  |
| 3. Carry out coating operation   | <ul> <li>3.1 <u>Coating materials</u> are collected and measured as per product requirement</li> <li>3.2 Machine is set and ensured safe procedure</li> <li>3.3 Machine is adjusted and coating materials are used as required.</li> <li>3.4 Density and viscosity of coating slip is checked and quality is ensured as per standard.</li> <li>3.5 Roller or wheel is set according to job requirement.</li> <li>3.6 Glazed ware is loaded on kiln furniture by sucker as per requirement</li> </ul> |  |  |
| <ul><li>4. Identify common faults</li><li>5. Clean and maintain work area, tools and equipment</li></ul> | <ul> <li>4.1 Common faults of machine and products are identified and reported to the supervisor.</li> <li>4.2 Records and log books of machine operations are maintained as per instruction.</li> <li>4.3 Irregularities of operation are identified and reported to designated person as per workplace instruction.</li> <li>5.1 Tools and equipment are cleaned, maintained and stored as per workplace procedures.</li> </ul>  |  |  |

|                        | 5.2 Faulty and defective equipment is tagged and reported in |
|------------------------|--|
|                        | accordance with workplace procedures .                       |
|                        | 5.3 Work area is cleared and waste materials are removed in  |
| D 017 1 1 1            | accordance with workplace standard.                          |
| Range of Variables     |  |
| Variables              | Range (may include but not limited to):                      |
|                        | 1.1 Musk   |
| 1. Personal Protective | 1.2 Safety glasses I goggles                                 |
| Equipment (PPE)        | 1.3 Hair nets  |
| Equipment (11 L)       | 1.4 Gloves   |
|                        | 1.5 Apron  |
|                        | 2.1 Rubber belt/wheel  |
| 2 Cutting materials    | 2.2 Brush  |
| 2. Cutting materials   | 2.3 Sponge   |
|                        | 2.4 Water  |
|                        | 2.5 Alumina powder   |
| 2 Conting materials    | 2.6 China clay   |
| 3. Coating materials   | 2.7 Magnesium carbonate                                      |
|                        | 2.8 Water  |
|                        | 3.1 Tiles  |
|                        | 3.1.1 Wall tiles   |
|                        | 3.1.2 Floor tiles  |
|                        | 3.1.3 Decor/ border tiles                                    |
| 4. Product             | 3.2 Tableware  |
|                        | 3.2.1 Flat ware  |
|                        | 3.2.2 Hollow ware  |
|                        | 3.3 Sanitary ware  |
|                        | 3.4 Ceramic bricks/heavy clay                                |
|                        | 4.1 Tray   |
|                        | 4.2 Rubberized roller  |
|                        | 4.3 Stirrer tank   |
| ~ T 1 1                | 4.4 Belt conveyor  |
| 5. Tools and equipment | 4.5 Pycnometer   |
|                        | 4.6 Viscometer/Ford viscosity cup                            |
|                        | 4.7 Weighing balance   |
|                        | 4.8 Stop watch   |
| <b>Evidence Guide</b>  |  |

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

| 1  | Critical   | aspects   | of  | Asse                                | ssment required evidence that the candidate: |
|----|------------|-----------|-----|-------------------------------------|--|
| 1. | competency | OI        | 1.1 | Carried out foot cutting operation; |  |
|    | competen   | impetency |     | 1.2                                 | Carried out foot coating operation           |

|                           | 1.3  | identified common faults.                               |
|---------------------------|------|---|
|                           | 2.1  | Describe coating operation.                             |
|                           | 2.2  | Describe cutting operation;                             |
| 2. Underpinning           | 2.3  | Glaze applying procedure.                               |
| knowledge                 | 2.4  | Coat application techniques.                            |
|                           | 2.5  | Density measurement techniques.                         |
|                           | 2.6  | Viscosity measurement techniques.                       |
|                           | 3.1  | Preparing cutting and coating equipment.                |
|                           | 3.2  | Appling coat.   |
| 3. Underpinning skills    | 3.3  | Performing cutting                                      |
|                           | 3.4  | Checking density and viscosity.                         |
|                           | 3.5  | Adjusting roller.                                       |
|                           | 4.1  | Commitment to occupational health and safety            |
|                           | 4.2  | Environmental concerns                                  |
| 4. Underpinning attitudes | 4.3  | Eagerness to learn                                      |
|                           | 4.4  | Tidiness and timeliness                                 |
|                           | 4.5  | Respect for rights of peers and seniors in workplace    |
|                           | The  | following resources must be provided:                   |
| 5 Descuree implications   | 5.1. | Workplace (actual or simulated)                         |
| 5. Resource implications  | 5.2. | All tools, equipment and materials required             |
|                           | 5.3. | Materials, consumable to perform activities             |
|                           | 6.1  | Demonstration   |
| 6. Methods of assessment  | 6.2  | Oral questioning  |
|                           | 6.3  | Written test  |
|                           | 7.1  | Competency assessment must be done in NSDA accredited   |
| 7. Context of assessment  |      | assessment centre                                       |
| 7. Context of assessment  | 7.2  | Assessment should be done by a NSDA certified/nominated |
|                           |      | assessor  |
|                           |      |   |

### **Accreditation Requirements**

Training Providers must be accredited by NSDA, the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of national skills qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

| Unit Code and Title           | OU-CER-GLZ-04-L1-V1: Carry Out Spraying  |  |  |
|-------------------------------|--|--|--|
| Nominal Hours                 | 70 Hours   |  |  |
| Unit Descriptor               | This unit covers the knowledge, skills and attitudes required to carry out spraying.  It includes following OSH practices, preparing glazing equipment and product, applying glaze to formed product, rectifying routine problems and cleaning and maintaining work area, tools and equipment.   |  |  |
|                               | Performance Criteria   |  |  |
| <b>Elements of Competency</b> | Bold and Underlined terms are elaborated in the Range of Variables.  |  |  |
| 1. Follow OSH practices       | <ol> <li>1.1 All safety requirements I regulations are adhered to before, during and after use.</li> <li>1.2 Unsafe or faulty tools are identified and repaired according to designated procedures before, during and after use.</li> <li>1.3 Personal Protective Equipment (PPE) is worn and OSH (Occupational Safety and Health) instructions are followed according to job specification.</li> <li>1.4 Work is done considering the health hazard</li> </ol>  |  |  |
| 2. Prepare glaze and product  | <ol> <li>2.1 Glazing requirements are identified from production schedule</li> <li>2.2 Wheel, spray gun is adjusted and glazes are prepared as per job requirement.</li> <li>2.3 Air pressure regulator is adjusted as required.</li> <li>2.4 Glaze slip pressure is adjusted for spray gun/nozzle and checked time to time as per job requirement.</li> <li>2.5 Glazing booth is prepared as per requirement.</li> <li>2.6 The wares are set on setter as per instruction.</li> <li>2.7 The wares are de-dusted and cleaned and wares are checked and defects are identified as per instruction.</li> <li>2.8 Defected products are rectified or rejected as per enterprise procedure.</li> <li>2.9 Glaze slip density and viscosity is adjusted in accordance with job specification.</li> <li>2.10 Glaze slips are screened for remove foreign particles and sedimentation control.</li> <li>2.11 Bone China biscuit wares are barrel polished as per job requirement.</li> </ol> |  |  |
| 3. Apply glaze on products    | <ul> <li>3.1 Glaze is sprayed on ceramic wares in accordance with procedure.</li> <li>3.2 First layer is sprayed on deep areas of especially sanitary wares as per spraying procedure.</li> </ul>  |  |  |

|                        | 3.3 Second layer is sprayed on total surface areas of wares as per   |
|------------------------|--|
|                        | spraying procedure.  |
|                        | 3.4 Glaze thickness is maintained as per specification               |
|                        | 3.5 Glazed wares foot are wiped as per procedure                     |
|                        | 4.1 Faults are identified and rectified that can occur during the    |
|                        | operation as per workplace procedure.                                |
|                        | 4.2 Machine failure causes are identified and reported as            |
| 4. Rectify routine     | company procedure;   |
| problems               | 4.3 Records and log books of machine operations are maintained       |
| proceeding             | as per instruction.  |
|                        | 4.4 Irregularities are identified and reported to designated person  |
|                        | as per company procedure.  |
|                        | 5.1 <b>Tools and equipment</b> are cleaned, maintained and stored as |
|                        | per workplace procedures.  |
| 5. Clean and maintain  | 5.2 Faulty and defective equipment is tagged and reported in         |
| work area, tools and   | accordance with workplace procedures.                                |
| equipment              | 5.3 Work area is cleared and waste materials are removed in          |
|                        | accordance with workplace standards                                  |
| Range of Variables     | decordance with workplace standards                                  |
|                        |  |
| Variables              | Range (may include but not limited to):                              |
|                        | 1.1 Musk   |
|                        | 1.2 Safety glasses / goggles   |
| 1. Personal Protective | 1.3 Hair nets  |
| Equipment (PPE)        | 1.4 Ear muffs / plugs  |
| Equipment (112)        | 1.5 Gloves   |
|                        | 1.6 Footwear   |
|                        | 1.7 Protective clothing  |
|                        | 2.1 Exposure hazards in glaze  |
|                        | 2.2 Toxicity of glazes   |
| 2. Hazards             | 2.3 Physical   |
|                        | 2.4 Mechanical   |
|                        | 2.5 Electrical   |
|                        | 3.1 Spray gun  |
|                        | 3.2 Wheel  |
|                        | 3.3 Pressure tank  |
|                        | 3.4 Pressure controller  |
| 2 Tools and againment  | 3.5 Sponge   |
| 5. Tools and equipment | 3.6 Spray Booth / Continues glazing booth                            |
|                        |  |
|                        | 3.7 Funnel   |
|                        | 3.7 Funnel 3.8 Blower  |
|                        |  |
| 3. Tools and equipment | 3.5 Sponge   |

| 3.11 Weighing tray                   |
|--------------------------------------|
| 3.12 Vibrator/sieving                |
| 3.13 Iron remover/magnet bar         |
| 3.14 Stirrer                         |
| 3.15 Conveyor                        |
| 3.16 Pycnometer                      |
| 3.17 Viscometer / Ford viscosity cup |
| 3.18 Dial gauge                      |
| 3.19 Weighting balance               |
|                                      |

## **Evidence Guide**

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

|                           | Assessment required evidence that the candidate:              |  |  |
|---------------------------|---|--|--|
|                           | 1.1 adjusted spray gun, glaze slip pressure, density and      |  |  |
| 1. Critical aspects of    | viscosity;  |  |  |
| competency                | 1.2 applied glaze to ware in specified thickness              |  |  |
|                           | 1.3 uniformed glazing of functional surface                   |  |  |
|                           | recognized and categorized glazing faults.                    |  |  |
|                           | 2.1 Spray gun adjustment techniques .                         |  |  |
| 2. Underpinning knowledge | 2.2 Glaze application techniques.                             |  |  |
|                           | 2.3 Density measurement techniques.                           |  |  |
|                           | 2.4 Viscosity measurement techniques.                         |  |  |
|                           | 2.5 Thickness measurement techniques.                         |  |  |
|                           | 3.1 Adjusting glaze spray gun.                                |  |  |
|                           | 3.2 Adjusting parameters.                                     |  |  |
|                           | 3.3 Measuring density, viscosity.                             |  |  |
| 3. Underpinning skills    | 3.4 Spraying on product.                                      |  |  |
|                           | 3.5 Identifying faults.                                       |  |  |
|                           | 3.6 Trouble shooting  |  |  |
|                           | 3.7 Maintaining tools and equipment.                          |  |  |
|                           | 4.1 Commitment to occupational safety and health.             |  |  |
|                           | 4.2 Communication with peers, sub-ordinates and seniors in    |  |  |
| 4. Underpinning attitudes | workplace.  |  |  |
|                           | 4.3 Promptness in carrying out activities.                    |  |  |
|                           | 4.4 Tidiness and timeliness.                                  |  |  |
|                           | 4.5 Respect for rights of peers, sub-ordinates and seniors in |  |  |
|                           | workplace.  |  |  |
|                           | 4.6 Environmental concern.                                    |  |  |
|                           | 4.7 Sincere and honest to duties.                             |  |  |
|                           | The following resources must be provided:                     |  |  |
| 5. Resource implications  | 5.1. Workplace (actual or simulated)                          |  |  |
|                           | 5.2. All tools, equipment and materials required              |  |  |

|                          | 5.3. | . Materials, consumable to perform activities           |  |  |
|--------------------------|------|---|--|--|
|                          | 6.1  | Demonstration   |  |  |
| 6.Methods of assessment  | 6.2  | Oral questioning  |  |  |
|                          | 6.3  | Written test  |  |  |
| 7. Context of assessment | 7.1  | Competency assessment must be done in NSDA accredited   |  |  |
|                          |      | assessment centre                                       |  |  |
|                          | 7.2  | Assessment should be done by a NSDA certified/nominated |  |  |
|                          |      | assessor  |  |  |

## **Accreditation Requirements**

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# **Development of Competency Standard**

The Competency Standards for National Skills Certificate in Glazing, Level-1 is developed by NSDA on 19 September 2024.

### **List of Members**

| Sl No | Name and Address   | Position in the committee |
|-------|--|---------------------------|
| 1.    | Md. Rafiqul Islam Bhuiyan Consultant, Ceramic ISC Mobile: 01954880210 Email: consultantrafique@gmail.com     | Member                    |
| 2.    | Md. Anamul Hoque Manager Greatwall Ceramic Ind. Ltd. Mobile: 01974190098, enamk22@gmail.com,                 | Member                    |
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# **Validation of Competency Standard**

The Competency Standards for National Skills Certificate in Glazing, Level- 1 is validated by NSDA 15<sup>th</sup> October 2024.

## **List of Members of SCVC**

| SI<br>No | Name and Address  | Position in the committee | Signature |
|----------|---|---------------------------|-----------|
| 1.       | Irfan Uddin, Vice Chairman, Ceramic ISC   | Chairperson               |           |
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