



COMPETENCY STANDARD

Body and Glaze Preparing for Tiles

Level: 1

(Ceramic Sector)

Competency Standard Code: CS-CER-BGPT-L1-EN-V2



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

Copyright

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This Competency Standard for **Body and Glaze Preparing for Tiles** 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. " **Body and Glaze Preparing for Tiles** " 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, recognizing and assessing people's skills, and may also have optional support materials
- enable industry recognized 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 Body and Glaze Preparing for Tiles in Ceramic Sector

Level Descriptors of NSQF (BNQF 1-6)

Level & Job classification	Knowledge Domain	Skills Domain	Responsibility Domain
6-Mid-Level Manager/ Sub Assistant 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 analyze, compare, relate and evaluate.	Specialized 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 Skilled 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 Worker	Moderately broad knowledge in a specific work or study area, able to perceive ideas and abstract from drawing and design according to workplace 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 Worker	Basic understanding of underpinning knowledge in a specific work or study area, able to interpret and apply common occupational terms and 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 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

**Approval of Competency Standard
(Reviewed)**

Approved By
47th Authority Meeting of NSDA
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**Competency Standards for National Skill Certificate, Level- 1 in
Body and Glaze Preparing for Tiles in Ceramic Sector
Course Structure**

SL No	Unit code and Title		UOC Level	Nominal (hours)
Generic Units of Competencies				
1.	GU-01-L1-V1	Perform Computations Using Basic Mathematical Concepts	1	15
2.	GU-02-L1-V1	Apply Occupational Safety and Health (OSH) Procedure in the Workplace	1	15
3.	GU-06-L1-V1	Practice House Keeping Procedure	1	10
Sub Total				40
Sector Specific Units of Competencies				
4.	SU-CER-01-L1-V1	Interpret Activities of Ceramic Industry in Bangladesh	1	20
5.	SU-CER-02-L1-V1	Use Measuring and Checking Tools and Instruments	1	20
Sub Total				40
Occupation Specific Units of Competencies				
6.	OU-CER-BZP-01-L1-V2	Identify and Prepare Raw Materials	1	70
7.	OU-CER- BZP -02-L1-V2	Carry Out Crushing of Stone Materials	1	50
8.	OU-CER- BZP -03-L1-V2	Carry Out Grinding of Crushed Materials	1	60
9.	OU-CER- BZP -04-L1-V2	Prepare Granular Powder	1	60
Sub Total				240
Total Duration				320

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	1. Identify calculation requirements in the workplace 2. Select appropriate mathematical methods for the calculation. 3. Use tool/instrument to perform calculations	15
GU-02-L2-V1	Apply Occupational Safety and Health (OSH) procedure In the Workplace	1. Identify OSH policies and procedures 2. Follow OSH procedure 3. Report hazards and risks 4. Respond to emergencies 5. Maintain personal well-being	15
GU-06-L1-V1	Practice House Keeping Procedure	1. Sort and remove unnecessary items 2. Arrange items 3. Maintain work area, tools and equipment 4. Follow standardized work process and procedure 6. Perform work spontaneously.	10
Total hours			40

Sector specific competencies

Code	Unit of competency	Elements of competency	Duration (hours)
SU-CER-01-L1-V1	Interpret Activities of Ceramic Industry in Bangladesh	1. Identify job roles and responsibilities 2. Identify and observe OSH 3. Plan work activities 4. Work with others	20
SU-CER-02-L1-V1	Use Measuring Tools and Equipment	1. Select measuring instruments 2. Carry out measurements and calculation 3. Maintain measuring instruments	20
Total hours			40

Occupation specific competencies

Code	Unit of competency	Elements of competency	Duration (hours)
OU-CER-BZP-01-L1-V1	Identify and Prepare Raw Materials	1. Select raw materials 2. Wash stone materials 3. Wash clay materials 4. Store materials 5. Clean and maintain work area, tools and equipment	70
OU-CER-BZP-02-L1-V1	Carry Out Crushing of Stone Materials	1. Prepare crushing machine 2. Operate machine 3. Distribute crushed product 4. Clean and maintain work area, tools and equipment	50
OU-CER-BZP-03-L1-V1	Carry Out Grinding of Crushed Materials	1. Follow OSH practices 2. Prepare machine for grinding 3. Load materials 4. Grind materials 5. Store grinded product 6. Clean and maintain work area, tools and equipment	60
OU-CER-BZP-04-L1-V1	Prepare Granular Powder	1. Follow OSH practices 2. Prepare spray dryer machine 3. Operate spray dryer machine 4. Clean and maintain work area, tools and equipment	60
Total Hours			240

Generic Units of Competency

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

	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 authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.	
1. Critical Aspects of Competency	Assessment required evidence that the candidate: 1.1 identified calculation requirements from workplace information 1.2 selected appropriate method to carry out the calculation requirements 1.3 selected measurements 1.4 selected appropriate methods 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. Underpinning Knowledge	2.1. Numerical concept 2.2. Basic mathematical methods such as addition, subtraction, multiplication and division and percentage. 2.3. Mathematical language, symbols and terminology. 2.4. Measuring units
3. Underpinning Skills	3.1 Interpret numerical concept 3.2 Interpret mathematical methods such as addition, subtraction, multiplication and division and percentage. 3.3 Interpret mathematical language, symbols and terminology. 3.4 Interpret measuring units
4. Underpinning Attitudes	4.1. Commitment to occupational health and safety 4.2. Environmental concerns 4.3. Eagerness to learn 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. Resource Implications	5.1. Work place (actual or simulated) 5.2. Materials relevant to the proposed activity 5.3. All tools, equipment, material and documentation required. 5.4. Relevant specifications or work instructions

6. Methods of Assessment	6.1. Written Test 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
Accreditation Requirements 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 Title	GU-02-L2-V1: Apply Occupational Safety and 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 well-being.
Nominal Hours	15 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Identify OSH policies and procedures	1.1. <u>OSH policies</u> and <u>safe operating procedures</u> are accessed and stated 1.2. <u>Safety signs and symbols</u> are identified and followed 1.3. Emergency response, evacuation procedures and other contingency measures are determined according to workplace requirements
2. Follow OSH procedure	2.1 <u>Personal protective equipment (PPE)</u> is selected and collected as required 2.2 Personal protective equipment (PPE) is correctly used in accordance with organization OSH procedures and practices 2.3 A clear and tidy workplace is maintained as per workplace standard 2.4 PPE is maintained to keep them operational and compliant with OSH regulations
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	4.1 Alarms and warning devices are responded 4.2 Workplace <u>emergency procedures</u> are followed 4.3 <u>Contingency measures</u> during workplace accidents, fire and other emergencies are recognized and followed in accordance with organization procedures 4.4 First aid procedures are applied during emergency situations
5. Maintain personal well-being	5.1 OSH policies and procedures are adhered to OSH awareness programs are participated in as per workplace guidelines and procedures.

	5.2 Corrective actions are implemented to correct unsafe condition in the workplace 5.3 <u>“Fit to work” records</u> are updated and maintained according to workplace requirements
Range of Variables	
Variables	Range (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 procedures	2.1 Orientation on emergency exits, fire extinguishers, fire 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 symbols	3.1 Direction signs (exit, emergency exit, etc.) 3.2 First aid signs 3.3 Danger Tags 3.4 Hazard signs 3.5 Safety tags 3.6 Warning signs
4. Personal Protective Equipment (PPE)	4.1 Gas Mask 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 procedures	6.1 Fire fighting 6.2 Earthquake 6.3 Medical and first aid 6.4 Evacuation

7. Contingency measures	7.1 Evacuation 7.2 Isolation 7.1 Decontamination
8. "Fit to Work" records	8.1 Medical Certificate every year 8.2 Accident reports, if any 8.3 Eye vision certificate
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 stated OSH policies and safe operating procedures 1.2 followed safety signs and symbols 1.3 used personal protective equipment (PPE) 1.4 maintained workplace clear and tidy 1.5 assessed and Controlled hazards 1.6 followed emergency procedures 1.7 followed contingency measures 1.8 implemented corrective actions
2. Underpinning knowledge	2.1 Define OSH 2.2 OSH workplace policies and procedures 2.3 Work safety procedures 2.4 Emergency procedures 2.5 Hazard control procedure 2.6 Different types of hazards 2.7 PPE and there uses 2.8 Personal hygiene practices 2.9 OSH awareness
3. Underpinning skills	3.1 Accessing OSH policies 3.2 Using of PPE 3.3 Handling cleaning tools and equipment 3.4 Writing report 3.5 Responding to emergency procedures
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 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
5. Resource implications	5.1 Workplace (actual or simulated)

	5.2 Equipment and outfits appropriate in applying safety measures 5.3 Tools, equipment, materials and documentation required 5.4 OSH Policies and Procedures
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning
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 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 Title	GU-06-L1-V1: Practice House Keeping Procedure
Unit Descriptor	This unit covers the knowledge, skills and attitude required to Practice housekeeping procedure. It specifically includes sorting and removing unnecessary items, arranging items, maintaining work area, tools and equipment, following standardized work process and procedure and performing work spontaneously.
Nominal Hours	10 Hours
Elements of Competency	Performance Criteria <u>Bold underlined</u> terms are elaborated in the Range of Variables
1. Sort and remove unnecessary items	1.1 Reusable, recyclable materials are sorted in accordance with company/office procedures; 1.2 <u>Unnecessary items</u> are removed and disposed of in accordance with company or office procedures.
2. Arrange items	2.1 Items are arranged in accordance with company/office housekeeping procedures; 2.2 Work area is arranged according to job requirements; 2.3 Activities are prioritized based on instructions; 2.4 Items are provided with clear and visible <u>identification marks</u> based on procedure; 2.5 Safety equipment and evacuation passages are kept clear and accessible based on instructions.
3. Maintain work area, tools and equipment	3.1 Cleanliness and orderliness of work area is maintained in accordance with company/office procedures; 3.2 Tools and equipment are cleaned in accordance with manufacturer's instructions/manual; 3.3 <u>Minor repairs</u> are performed on tools and equipment in accordance with manufacturer's instruction/manual; 3.4 Defective tools and equipment are reported to immediate supervisor.
4. Follow standardized work process and procedure	4.1 Materials for common use are maintained in designated area based on procedures; 4.2 Work is performed according to standard work procedures. Abnormal incidents are reported to immediate supervisor.
5. Perform work spontaneously	5.1 Work is performed as per instruction; 5.2 Company and office <u>decorum</u> are followed and complied with; 5.3 Work is performed in accordance with OSH requirements.

Range of Variables	
Variable	Range (may include but not limited to):
1. Unnecessary items	1.1 Non-recyclable materials 1.2 Pictures, posters and other materials not related to work activity 1.3 Unserviceable tools and equipment 1.4 Waste materials
2. Identification marks	2.1 Color coding 2.2 Labels 2.3 Tags
3. Minor repairs	3.1 Application of lubricants 3.2 Replacement of parts 3.3 Sharpening of tools 3.4 Tightening of nuts, bolts and screws
4. Decorum	4.1 Behavior 4.2 Company/office rules and regulations 4.3 Company/office uniform
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 sorted and removes unnecessary items 1.2 arranged items 1.3 maintained work area, tools and equipment 1.4 followed standardized work process and procedures 1.5 performed work spontaneously.
2. Underpinning knowledge	2.1 Environmental requirements relative to work safety 2.2 Principles of 5S of housekeeping 2.3 Reading skills required to interpret instructions 2.4 Work process and procedures 2.5 Work-related documentation requirements.
3. Underpinning skills	3.1 Arranging items 3.2 Maintaining work area, tools and equipment 3.3 Following standardizing work process

4. Underpinning attitude	1.1 Commitment to occupational health and safety 1.2 Promptness in carrying out activities 1.3 Sincere and honest to duties 1.4 Environmental concerns 1.5 Eagerness to learn 1.6 Tidiness and timeliness 1.7 Respect for rights of peers and seniors in workplace 1.8 Communication with peers and seniors in workplace.
2. Resource implications	The following resources must be provided: 5.1 work place procedure 5.2 materials relevant to the proposed activity 5.3 all tools, equipment, material and documentation required. 5.4 relevant specifications or work instructions.
6. Methods of assessment	Methods of assessment may include but not limited to: 3.1 written test 3.2 demonstration 3.3 oral questioning 3.4 portfolio
4. 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 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 Competency

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

	2.5 Sound hazard 2.6 Environmental hazard and other workplace hazards
3. Effective interpersonal skills	3.1 Basic listening and speaking skills 3.2 Use of terminology and jargon 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.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 identified job roles and responsibilities; and 1.2 demonstrated working in the ceramic industry.
2. Underpinning knowledge	2.1 Safety rules and procedure. 2.2 Safety requirements in handling tools. 2.3 Working with others.
3. Underpinning skills	3.1 Reading skills required to interpret work instruction and numerical skills. 3.2 Communicating skills. 3.3 Problem solving in emergency situation.
4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	The following resources must be provided 5.1. Workplace (actual or simulated) 5.2. Tools, spares parts & physical facilities appropriate to perform activities. 5.3. Materials, consumable to perform activities.
6. Methods of assessment	6.1 Demonstration 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

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 and Checking Tools and Instruments
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to use measuring and checking tools and instruments. It includes the tasks of preparing for work, selecting the job, selecting measuring and checking tools and instruments, taking and checking measurements, recording measurements, cleaning and storing measuring and checking instruments.
Nominal Hours	20 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the range of variables
1. Prepare for work	1.1 <u>Safe work practices</u> are observed and <u>Personal Protective Equipment (PPE)</u> worn as required for the work performed 1.2 <u>Hazards</u> are identified and risks are minimized and controlled 1.3 <u>Measuring and checking tools and instruments</u> are selected and collected for use.
2. Select the job to be measured and checked	2.1 Jobs to be measured are identified; 2.2 Jobs to be checked are identified; 2.3 <u>Documents</u> and specifications are interpreted.
3. Select measuring and checking tools and instruments	3.1 Measuring and checking instrument are selected according to job requirements; 3.2 Tolerance and/or clearance, limits are interpreted from the drawing.
4. Take and check measurements	4.1 Measuring and checking instruments are calibrated to ensure accurate reading/measurement; 4.2 <u>Routine adjustments</u> are done as required; 4.3 <u>Measurements</u> are taken precisely/accurately as per supplied drawing or manual; 4.4 Measurements are checked against job requirement.
5. Record and communicate measurement	5.1 Measurements are recorded on form/drawings/sketches as per standard procedures; 5.2 Recorded measurements are interpreted and communicated to supervisor.
6. Clean and store measuring and checking instruments	6.1 Measuring and checking instruments are cleaned; 6.2 Measuring instruments are stored as per industry procedure.
Range of Variables	
Variable	Range (May include but not limited to)
1. Safe work practices	1.1 Identify hazards 1.2 Control hazards 1.3 Use PPE 1.4 Response to emergency situation 1.5 Use First Aid 1.6 Measure risks 1.7 Report uncontrolled hazards and risks

2. Personal Protective Equipment (PPE)	2.1 Safety shoes 2.2 Safety belt 2.3 Goggles 2.4 Hand gloves 2.5 Safety helmet 2.6 Overall apron 2.7 Safety Mask 2.8 Ear plug
3. Hazards	3.1 Physical hazard 3.2 Chemical hazard 3.3 Electrical and mechanical hazard 3.4 Biological hazard 3.5 Ergonomic hazard 3.6 Mental hazard
4. Measuring and checking tools and instruments	4.1 Measuring tools ▪ Measuring tape ▪ Slide/Vernier Calipers ▪ Steel Rules ▪ Micrometer ▪ Stop watch 4.2 Checking tools ▪ Inside calipers ▪ Outside calipers ▪ Filler gauge ▪ Taper gauge 4.3 Measuring instruments ▪ Pressure gauge ▪ Sprit level ▪ Weighing scale
5. Documents	5.1 Drawing 5.2 Technical manuals 5.3 Specifications 5.4 Written instructions
6. Routine adjustment	6.1 Calibration 6.2 Simple zeroing 6.3 Scale adjustment 6.4 Reference adjustment
7. Measurements	7.1 Measuring length 7.2 Angle 7.3 Clearances 7.4 Time
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.	
1. Critical aspects of competency	1.1 Followed OSH practices 1.2 Identified the proper measuring instrument 1.3 Took measurement 1.4 Recorded measurement 1.5 Interpreted written inspection.

2. Underpinning knowledge	2.1 Relevant OSH. 2.2 Safe work practices 2.3 Principles of using different measuring instruments. 2.4 Workplace standard. 2.5 List and use of measuring and checking tools and instruments 2.6 Sequence of using the instruments. 2.7 Methods of using instruments 2.8 Calibration of instrument.
3. Underpinning skill	3.1 Practicing workplace safety 3.2 Taking instruments 3.3 Interpreting and following data sheet, instruction and manuals, technical drawing 3.4 Performing measurement 3.5 Keeping record and report 3.6 Calibrating of instrument.
4. Underpinning attitudes	4.1 Commitment to occupational safety and health. 4.2 Promptness in carrying out activities. 4.3 Sincere and honest to duties. 4.4 Eagerness to learn. 4.5 Tidiness and timeliness. 4.6 Environmental concerns. 4.7 Respect for rights of peers and seniors at workplace. 4.8 Communicate with peers and seniors at workplace.
5. Resource implications	5.1 Adequate workplace 5.2 Materials for proposed activities 5.3 Measuring and checking tools and instruments appropriate to propose activities 5.4 Information and documentation 5.5 Drawings, Manual, Codes, Standards and reference materials.
6. Methods of assessment	Assessment methods may include but not limited to: 6.1 Demonstration 6.2 Oral questioning 6.3 Written test 6.4 Portfolio
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after Completion of the training module 7.2 Assessment should be done by NSDA certified assessor.
Accreditation Requirements 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.	

Occupation Specific Units of Competency

Unit Code and Title	OU-CER-BGPT-01-L1-V2: Identify and Prepare Raw Materials
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to identify and prepare raw materials. It includes following OSH practices, selecting raw materials, washing stone materials and clay materials, storing materials and cleaning and maintaining tools, equipment and work area.
Nominal Hours	70 Hours
Elements of Competency	Performance Criteria <u>Bold and Underlined</u> terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 <u>Personal Protective Equipment (PPE)</u> is used; 1.2 Occupational Safety and Health (OSH) instructions are followed according to job specification.
2. Select raw materials	2.1 <u>Raw materials of body and glaze preparation</u> are listed; 2.2 Raw materials are identified as per specification; 2.3 Raw materials are sorted and separated impurities as per job requirement; 2.4 Impure materials are removed according to workplace procedure.
3. Wash stone materials	3.1 Tools and equipment are selected and collected as per job requirement; 3.2 Materials are loaded into tank / washing yard as required; 3.3 Water is supplied in the tank / washing yard as per requirement; 3.4 Stone is washed by brush/sieving method as required; 3.5 Impurities are separated using hammer and magnet as required; 3.6 Pure materials and impurities are stored separately to the designated places as per company procedures; 3.7 Log book is written and reported to designated person.
4. Wash clay materials	4.1 Tools are selected and collected as per job requirement; 4.2 Materials are loaded into tank / washing yard as required; 4.3 Water is supplied in the tank / washing yard as per required; 4.4 Clay materials are load into high speed blungers as required; 4.5 Clay materials are mixed as per job requirement; 4.6 Impurities and floating materials are separated using sieve and magnet as required; 4.7 Pure materials and impurities are stored separately to the designated places as per company procedures; 4.8 Log book is written and reported to designated person.

5. Store materials	5.1 Materials are tagged according to name and size; 5.2 Materials are stored in the designated place as per company procedure; 5.3 Storage of materials are handled following material safety data sheet (MSDS).
6. Clean and maintain work area, tools and equipment	6.1. Workplace documentation, including stock usage are completed in accordance with workplace procedures; 6.2. Faulty and defective equipment is tagged and reported in accordance with workplace procedures; 6.3. Waste materials are disposed in accordance with workplace standards; 6.4. Tools are cleaned and stored as per workplace procedures; 6.5. Work area is cleaned and waste removed following workplace procedures.
Range of Variables	
Variables	Range (may include but not limited to):
1. Personal Protective Equipment (PPE)	1.1 Safety glasses /goggles 1.2 Mask 1.3 Ear muffs / plugs 1.4 Gloves 1.5 Footwear 1.6 Protective clothing 1.7 Helmet
2. Raw materials of body and glaze preparation	2.1 Feldspar 2.2 Quartz/silica 2.3 Lime stone 2.4 China clay 2.5 Ball clay 2.6 Dolomite 2.7 Zinc Oxide 2.8 Sodium silicate 2.9 Zirconium silicate 2.10 Talc 2.11 Frit 2.12 Composed Glaze 2.13 STPP (Sodium tri-polyphosphate) 2.14 STDP (Sodium Metasilicate Pentahydrate) 2.15 CMC (Carboxy Methyl Cellulose)
3. Tools and equipment	3.1 Fork lift 3.2 Front end loader/ Wheel Loader/ Excavator 3.3 Hammer 3.4 Magnet

	3.5 Hose pipe 3.6 Blunger 3.7 Steel Brush 3.8 Trolley 3.9 Bucket 3.10 Pan 3.11 Vibrating Sieve 3.12 Shovel 3.13 Conveyor belt 3.14 Weighing machine
4. Materials	4.1 Body materials 4.2 Glaze materials
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.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 identified and selected raw materials; 1.2 washed raw materials; and 1.3 identified impurities.
2. Underpinning knowledge	2.1 List of materials 2.2 Material variations 2.3 Types of impurities 2.4 Features of impurities 2.5 Process of remove impurities 2.6 Mixing procedure 2.7 Washing procedure 2.8 Sieving procedure 2.9 Materials handling procedure 2.10 Store process
3. Underpinning skills	3.1 Sorting and separating impurities 3.2 Washing stone/Brushing stone 3.3 Using hammer 3.4 Mixing clay 3.5 Sieving clay 3.6 Storing technique
4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace

5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.4 Demonstration 6.5 Oral questioning 6.6 Written test
7. Context of assessment	7.3 Competency assessment must be done in NSDA accredited assessment centre. 7.4 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-BGPT-02-L1-V2: Carry Out Crushing of Stone Materials
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to carry out crushing of stone materials. It includes following OSH, preparing crushing machine, operating machine, distributing crushed product and cleaning and maintaining equipment and work area.
Nominal Hours	50 Hours
Elements of Competency	Performance Criteria <u>Bold and Underlined</u> terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 <u>Personal Protective Equipment (PPE)</u> is used; 1.2 OSH (Occupational Safety and Health) instructions are followed according to job specification; 1.3 Workplace hazards are identified.
2. Prepare crushing machine	2.1 Hazards and danger are checked for <u>crushing machine</u> ; 2.2 Faults are identified and isolated with tags in accordance with standard operating procedures; 2.3 All doors and guards are checked to ensure the secure position; 2.4 Equipment settings are adjusted to ensure conformance with standard operating procedures; 2.5 Electrical panel board is checked; 2.6 Pre-start is conducted as required; 2.7 Appropriate personnel are notified before start machine; 2.8 Adequate <u>supply of materials</u> is ensured to meet production requirements with standard operating procedure; 2.9 Machine is checked in sequence with standard operating procedures.
3. Operate machine	3.1 Machine is started in sequence with standard operating procedures; 3.2 Instrument / control panels are monitored and adjusted as necessary to remain within specified operating parameters; 3.3 Product output is maximized and efficiency to maintained target parameters of machine; 3.4 Jaw and roller are adjusted as per requirement of the output materials size; 3.5 Machine is operated; 3.6 Faults are identified that can occur during the operation and reported to designated person; 3.7 Records and log books of machine operations are maintained.

4. Distribute crushed product	4.1 Crushed product are collected; 4.2 Size of materials are checked and oversized materials are separated; 4.3 Oversize materials are re-crushed as per requirement; 4.4 Crushed materials are distributed to the assigned silo /storage area; 4.5 Silo / storage areas are checked to ensure compliance as per standard quality.
5. Clean and maintain work area, tools and equipment	5.1 <u>Tools and equipment</u> are cleaned, maintained and stored as per workplace procedures; 5.2 Faulty and defective equipment is tagged and reported in accordance with workplace procedures; 5.3 Work area is cleaned and waste materials are disposed in accordance with workplace standards.
Range of Variables	
Variables	Range (may include but not limited to):
1. Personal Protective Equipment (PPE)	1.1 Musk 1.2 Safety glasses / goggles 1.3 Hair nets 1.4 Ear muffs / plugs 1.5 Gloves 1.6 Footwear 1.7 Protective clothing
2. Crushing Machine	2.1 Jaw crusher 2.2 Roller crusher 2.3 Gyratory crusher 2.4 Hammer mill
3. Supply materials	4.1 Quartz 4.2 Feldspar 4.3 Limestone 4.4 Dolomite 4.5 Talc 4.6 Fired broken wares
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.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 adjusted jaw and roller as per requirement of the output materials size; 1.2 feed and distributed materials; 1.3 followed signage, tags and isolation procedures

2. Underpinning knowledge	2.1 Appropriate safety procedures concerning the operation of the equipment. 2.2 Procedures relating to the reporting of hazardous conditions. 2.3 Understand machine faults. 2.4 Start and shut down procedures. 2.5 Principles of crushing. 2.6 Mesh size of materials. 2.7 Basic maintenance procedure of the machine.
3. Underpinning skills	3.1 Operating machine. 3.2 Adjusting jaw and roller. 3.3 Adjusting sieve. 3.4 Adjusting conveyer. 3.5 Re-crushing oversize materials. 3.6 Cleaning and maintaining tools and equipment.
4. Underpinning attitudes	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. 4.4 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.
5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 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

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-BGPT-03-L1-V2: Carry Out Grinding of Crushed Materials
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to carry out grinding of crushed materials. It includes following OSH practices, preparing to grind machine, loading materials, grinding materials, distributing ground product and cleaning and maintaining equipment and work area
Nominal Hours	60 Hours
Elements of Competency	Performance Criteria <u>Bold and Underlined</u> terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 <u>Personal Protective Equipment (PPE)</u> is used; 1.2 OSH (Occupational Safety and Health) instructions are followed according to job specification
2. Prepare machine for grinding	2.1 Hazards and danger are checked for <u>machine</u>; 2.2 Faults are identified and isolated with tags in accordance with standard operating procedures; 2.3 All doors and guards are checked to ensure the secure position; 2.4 Equipment settings are adjusted to ensure conformance with standard operating procedures; 2.5 Electrical panel board is checked; 2.6 Lining block of grinding machine is checked.
3. Load materials	3.1 <u>Raw materials</u> are weighted and loaded as per specification; 3.2 <u>Grinding media</u> are used as per requirement; 3.3 Water is added in milling machine as per requirement; 3.4 Pre-start is conducted as required; 3.5 Appropriate personnel are notified before start machine; 3.6 Adequate supply of materials is ensured to meet production requirements with standard operating procedure.
4. Grind materials	4.1 Machine is started in sequence with standard operating procedures; 4.2 Physical inspections of machine are made at specified procedure; 4.3 Product output is maximized and efficiency to maintained target parameters of machine; 4.4 Grinding media and machine speed are adjusted as per requirement of the output materials size; 4.5 Faults are identified that can occur during the operation and reported to designated person; 4.6 Records and log books of machine operations are maintained to meet the work instructions.

5. Store grinded product	5.1 Impurities are separated using sieve and iron separator;
	5.2 Grinded materials are stored as per workplace standard;
	5.3 Storage areas are checked to ensure compliances as per standard quality and quantity requirements.
6. Clean and maintain work area, tools and equipment	6.1 Hand and/or power tools and equipment are cleaned, maintained in accordance with workplace procedures;
	6.2 Machine is cleaned and kept in a safe mode;
	6.3 Faulty and I or defective equipment is tagged and reported in accordance with workplace practices;
	6.4 Unused materials are collected and stored for re-use or disposed following workplace procedures;
	6.5 Waste materials are disposed following workplace procedures.
Range of Variables	
Variables	Range (may include but not limited to):
1. Personal Protective Equipment (PPE)	1.1 Safety glasses / goggles 1.2 Hair nets 1.3 Ear muffs / plugs 1.4 Gloves 1.5 Footwear and protective clothing 1.6 Mask 1.7 Helmet
2. Machine	2.1 Cone crusher 2.2 Edge mill 2.3 Roller mill 2.4 Pan mill 2.5 Rotary mill 2.6 Ball mill
3. Grinding media	3.1 Ball stone 3.1.1 Alumina pebble 3.1.2 Silica pebble 3.2 Flint stone

4. Raw materials	4.1 Feldspar 4.2 Quartz/silica 4.3 Lime stone 4.4 China clay 4.5 Ball clay 4.6 Dolomite 4.7 Zinc Oxide 4.8 Zirconium silicate 4.9 Talc 4.10 Frit 4.11 Composed Glaze 4.12 STPP (Sodium tri-polyphosphate) 4.13 STDP (Sodium Metasilicate Pentahydrate) 4.14 CMC (Carboxy Methyl Cellulose)
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.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 adjusted machine settings to ensure conformance with standard operating procedures 1.2 started machine in sequence with standard operating procedures 1.3 identified machine failure causes are in accordance with procedures / work instructions 1.4 distributed materials are feed into the machine 1.5 carried out inspection practice.
2. Underpinning knowledge	2.1 Appropriate safety procedures concerning the operation of the machine 2.2 Procedures relating to the reporting of hazardous conditions 2.3 Start and shut down procedures 2.4 RPM of a grinding machine 2.5 Principles of grinding 2.6 Materials properties 2.7 Procedure of loading and unloading materials 2.8 Types of materials to be ground and their additives 2.9 Basic maintenance and inspection practices carry out.
3. Underpinning skills	3.1 Operating machine. 3.2 Adjusting cone / roller 3.3 Identifying and rectifying machine failure causes. 3.4 Maintaining records and log books of machine operations. 3.5 Distributing ground materials to their correct silo/storage area. 3.6 Maintaining tools, equipment and store.

4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace.
5. Resource implications	The following resources must be provided: 5.1. workplace (actual or simulated) 5.2. all tools, equipment and materials required 5.3. materials, consumable to perform activities
6. Methods of assessment	6.1 Demonstration 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 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-BGPT-04-L1-V2: Prepare Granular Powder
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to prepare granular powder. It includes following OSH practices, preparing spray dryer machine, operating spray dryer machine and cleaning and maintaining equipment and work area
Nominal Hours	60 Hours
Elements of Competency	Performance Criteria <u>Bold and Underlined</u> terms are elaborated in the Range of Variables.
1. Follow OSH practices	1.1 <u>Personal Protective Equipment (PPE)</u> is used; 1.2 OSH (Occupational Safety and Health) instructions are followed according to job specification
2. Prepare spray dryer machine for operation	2.1 Slip is collected from blunger as required 2.2 Slip pressure is set as per job requirement. 2.3 Filter is set as per job requirement 2.4 Nozzle diameter is set as required 2.5 Pump is set as required and ensured oil level 2.6 Spray dryer inside shell is cleaned.
3. Operate spray dryer machine	3.1 Spray dryer machine is set up and started in accordance with SOP; 3.2 Powder granular size and moisture is controlled as required 3.3 Granular powder is stocked for aging in silo as per requirements; 3.4 Granular powder is tagged with date and batch wise in designated place. 3.5 Operation records are updated as per instructions.
4. Clean and maintain work area, tools and equipment	6.1 <u>Tools</u> and <u>equipment</u> are cleaned, maintained in accordance with workplace procedures. 6.2 Machine is cleaned and kept in a safe mode. 6.3 Faulty and or defective equipment is tagged and reported in accordance with workplace practices . 6.4 Unused materials are collected and stored for re-use or disposed following workplace procedures . 6.5 Waste materials are disposed following workplace procedures.
Range of Variables	
Variables	Range (may include but not limited to):
1. Personal Protective Equipment (PPE)	1.1 Safety glasses / goggles 1.2 Hair nets 1.3 Ear muffs / plugs 1.4 Gloves

	1.5 Footwear and protective clothing 1.6 Mask 1.7 Helmet
Tools	1.8 Viscometer 1.9 Pycnometer 1.10
2. Equipment	2.1 Pump 2.2 Motor 2.3 Silo 2.4 Filter 2.5 Conveyor belt 2.6 Moisture analyzer 2.7 Particle size Analyzer 2.8 Hydraulic trolley 2.9 Balance 2.10 Dryer 2.11 Nozzle 2.12 Temperature controller
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.	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 prepared spray dryer machine 1.2 operated spray dryer machine
2. Underpinning knowledge	2.1 Slip and its parameter 2.2 Filter setting procedure. 2.3 Pump setting procedure 2.4 Operating procedure of spray dryer machine 2.5 Powder granular size and moisture controlling system
3. Underpinning skills	3.1 Preparing spray dryer machine 3.2 Operating spray dryer machine 3.3 Controlling size and moisture of granular
4. Underpinning attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. All tools, equipment and materials required 5.3. Materials, consumable to perform activities

6.Methods of assessment	6.1 Demonstration 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 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.	

Development of Competency Standard

The Competency Standards for National Skills Certificate in Body and Glaze Preparing for Tiles, Level- 1 is developed by NSDA on 23 September 2024.

List of Members

Sl. No.	Name and address	Position in the committee
1.	Sifullah Al Mamum Asst. General Manager Akij Ceramics Ltd. Mobile: 01912294773 Email: sifullah.acrl@akijbashir.com	Member
2.	Kamrul Karim Manager Mir Ceramic Ltd. Mobile: 01322841051 E-mail: kamrulkarim.lab@mirceramic.com	Member
3.	Md. Shamim Iqbal Deputy Manager Paragon Ceramic Ind. Ltd. Mobile: 01755621066 E-mail: shamimiqbal017@gmail.com	
4.	Md. Ibrahim Anwar Deputy Manager Greatwall Ceramic Ind. Ltd. Mobile: 01915769221 E-mail: shimuldollar@gmail.com	Member
5.	Md. Rafiqul Islam Bhuiyan Consultant, Ceramic ISC Mobile: 01951880210 E-mail: consultantrafique@gmail.com	Member
6.	Md. Zulfikar Ali Coordinator, Ceramic ISC Mobile: 01680038771 E-mail: bcmea.hr@gmail.com	Member
7.	Md Abdur Razzaque, Expert (Curriculum), NSDA Mobile: 01742-734313, Email: razzaque159@gmail.com	Member

Validation of Competency Standard

The Competency Standards for National Skills Certificate in Body and Glaze Preparing for Tiles, Level- 1 is validated by NSDA on 29th September 2024.

List of Members of SCVC

Sl. No.	Name and address	Position in the committee	Signature
1.	Irfan Uddin, Vice Chairman, Ceramic ISC Mobile: 01714-085862 Email: Irfan.ud@gmail.com	Chairperson	
2.	Naresh Babu Bethi Asstt. General Manager (Production) Akij Ceramics Ltd. Mobile: 01756-752046 Email: naresh.acrl@akijbashir.com	Member	
3.	Mizanur Rahman Sr. Manager, Excellent Ceramic Ind. Ltd. Mobile: 01714-764857 Email: mizan9189@gmail.com	Member	
4.	Kamrul Karim Manager Mir Ceramic. Ltd. Mobile: 01322-841051 Email: kamrulkarim.lab@mirceramic.com	Member	
5.	Md. Shamim Iqbal Deputy manager Paragon Ceramic Ind. Ltd. Mobile: 01755-621066 Email: shamimiqbal017@gmail.com	Member	
6.	Md. Rafiqul Islam Bhuiyan Consultant, Ceramic ISC Mobile: 01954880210 Email: consultantrafique@gmail.com	Member	
7.	Md. Zulfikar Ali Khan Coordinator Ceramic ISC Mobile: 01680038771 Email: bcmea.hr@gmail.com	Member	
8.	Engr. Abdur Razzaque, Specialist-01, NSDA, Mobile: +88 01742734313, Email: razzaque159@gmail.com	Member	

Review and Validation of Competency Standard

The Competency Standards for National Skills Certificate Level-1 in **Body and Glaze Preparing for Tiles** is reviewed and validated by NSDA on 15 March 2026.

List of members:

Sl. No.	Name and address	Position in the committee	Signature
1	Mr. Moynul Islam Chairman, Ceramic ISC Email: ceramiciscbd@gmail.com	Chairman	
2	Mr. Muhammad Ali Azam Khan Mojahadi Instructor (Technical), Bangladesh Institute of Glass and Ceramic, Dhaka Mobile: 01716132719 Email: mojahadi96@gmail.com	Member	
3	Mr. Md. Hasan Ali Manager, Mir Ceramic Limited, Dhaka Mobile: 01758453806 Email: mohammedhasanali1122@gmail.com	Member	
4	Mr. Md. Abdur Rashid Deputy Manager, Meghna Ceramic Industries Limited, Dhaka. Mobile: 01712440742 Email: arrashid208@gmail.com	Member	
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6	Mr. Jaber Ahmad Section Head, DBL Ceramics Limited, Dhaka. Mobile: 01868496291 Email: jaberahammad2244@gmail.com	Member	
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11	Mr. Md. Nazrul Islam Competency Standard Expert National Skills Development Authority (NSDA) Mobile: 0 1711 273708 Email: ndewli@yahoo.com	Member	

Workshop Minutes

Government of the People's Republic of Bangladesh
Prime Minister's Office
National Skills Development Authority
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E-6 / B, Agargaon, Sher-E-Bangla Nagar Dhaka-1207, Bangladesh.
Email: ec@nsda.gov.bd
Website: www.nsd.gov.bd.

Minutes of the Competency Standard Validation Workshop on “Body & Glaze Preparing for Tiles” Occupation.

Chairman	Mr. Moynul Islam, Chairman, Ceramic Sector ISC
Date	: 15 March 2026
Time	: 9:00 am - 4:00 pm
Place	: ISC Conference Room, NSDA, Biniyog Bhaban, Agargaon, Dhaka-1207

The Chairman welcomed all those present and started the work of the workshop. During the day-long workshop, the competency standard of “Body & Glaze Preparing for Tableware” was reviewed and finalized in detail. The activities related to the finalized standard through validation workshop are presented below:

Serial No.	Content of validation	Whether it was appropriate		What actions have been taken if not appropriate?
		Yes	No	
1	Name and level of occupation	Yes		The name of the occupation kept remain unchanged as “Body & Glaze Preparing for Tiles” of this CS was considered Level 1.
2	Nominal Hour	Yes		320 hours
3	Unit of Competency	Yes		
4	Elements of Competency	Yes		
5	Performance Criteria		No	Relevant performance criteria were updated as per element.
3	Variables		No	Necessary addition, changings and refinements of range statements have been made.
3	Critical Aspect of Competency		No	Necessary addition, changings and refinements of range statements have been made.
3	Underpinning knowledge		No	Necessary addition, changings and refinements have been made.
9	Underpinning Skills		No	Necessary addition, changes and refinements have been made.
10	Attitude	Yes		
11	Resources Implications	Yes		
12	Assessment methods	Yes		
13	Others			Overall, the occupation has been included in Level-1 according to BNQF Level 1-6.

Through the above activities, the Competency Standard has been finalized and validated as “**Body & Glaze Preparing for Tiles, Level-1**”.

Chairman
Committee on Standard and Curriculum Validation
Chairman – Ceramic Sector ISC