



**Government of the People's Republic of Bangladesh
Skills Development Project**



National Competency Standards for Masonry

Qualification Title: **National Skills Certificate-II in Masonry
(Construction Sector)**

Qualification Code: **CONMAS030212**



Bangladesh Technical Education Board

May 2014

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Approval Sheet

The National Competency Standards for **National Skills Certificate-II Masonry (Construction Sector)** Qualification is a document developed by the Technical sub Committee for Masonry under the Skills Development Project ADB Loan 2425 – BAN (SF).

It was approved by the Bangladesh Technical Education Board (BTEB) upon the endorsement of the Sector Working Committee at a meeting held on 10 April 2012 at the office of the Industry Skills Council.

The Standard was also approved by Standard and Curriculum Development Committee (SCDC) on 16th April 2014 at BTEB CBT cell.

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Preface

The TVET system has a large role to play in economic growth and social development as workforce provider to the labor market and as provider of skills to those who are looking for employment. In the case of Bangladesh, the TVET sector needs major reforms to ensure that issues of quality and capacity, relevance, and access are properly addressed.

The Directorate of Technical Education (DTE) with funding from the Asian Development Bank (ADB), Swiss Agency Development for Cooperation SDC and the Government of Bangladesh (GoB) is implementing a project known as Skills Development Project (SDP). The main target of the Skills Development Project (SDP) is to improve the relevance of TVET in labor market by introducing competency-based training system: a system that proceeds from the development of a qualifications framework, competency standards, curriculum, training delivery, assessment, and quality assurance mechanisms in order to develop a competitive workforce.

The development of competency standards is regarded as the heart of a competency-based training regime. Each standard defines sets of knowledge, skills and attitudes (KSAs) that a Bangladeshi trainee should be able to demonstrate at a recognized level of competence. It provides a common framework of outcomes between the labor and education sectors, as well as among workers, trainers and trainees.

In the process of development, *Industry Skills Council (ISC)* was organized to determine competencies expected of an occupation in Bangladesh. The ISC, whose membership come from “top performers” in the industry, performed occupational, competency and unit analyses based on their rich experiences in the field, existing documents, and on the advice of national and international experts. Competency standards of Sri Lanka, Philippines, Australia, Korea, Malaysia, Maldives and other countries were examined.

A series of workshops – development, review and finalization - were conducted to ensure a workable National Competency Standards for the occupation. Further, a validation instrument was developed and administered to other top industry performers to verify and confirm the draft being developed.

It is hoped that this document reflects the real needs of the industry thereby providing a concrete basis for the curriculum development and assessment. In such a way, the development of relevant and competent workforce is not farfetched.

Chowdhury Mufad Ahmed

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Acronyms

MoE	Ministry of Education
DG	Director General
DTE	Directorate of Technical Education
SDP	Skills Development Project
PD	Project Director
PIU	Project Implementation Unit
GOB	Government of Bangladesh
ADB	Asian Development Bank
SC	Swiss contact
ANTA	Australian National Training Authority
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BMET	Bureau of Manpower Employment and Training
NTVQ	National Technical Vocational Qualification
NTVQF	National Technical Vocational Qualification Framework
BTEB	Bangladesh Technical Education Board
CBT	Competency Based Training
CS	Competency Standard
HSC (Voc)	Higher Secondary Certificate (Vocational)
KSA	Knowledge, Skills, Attitude
MoLE	Ministry of Labor and Employment
OHS	Occupational Health and Safety
PSC	Project Steering Committee
RMG	Ready Made Garments
RPL	Recognition of Prior Learning
SSC (Voc)	Secondary School Certificate (Vocational)
STEP	Skills and Training Enhancement project (WB)
SWC	Sector Working Committee
TESDA	Technical Education and Skills Development Authority
TL	Team Leader
ISC	Industry Skills Council
TVET	Technical and Vocational Education and Training
WB	World Bank
DACUM	Development of a Curriculum
CBLM	Competency Based Learning Materials

Section 1: The Qualification

1. Title of Qualification: National Skills Certificate-II in Masonry (Construction Sector)	
2. Qualification code:	3. Endorsement date:
CONMAS030212	10 April 2012
4. Purpose of the qualification	<p>The NSC II in Masonry Qualification consists of a set of competencies that a person should achieve in order to work competently in the Construction Sector as Masonry.</p> <p>In particular, he/she should be able to:</p> <ol style="list-style-type: none"> 1. Perform Measurement and Calculations in Plumbing 2. Maintain tools and equipment 3. Lay Brick and Block For Structure 4. Perform damp proof course. 5. Perform Arch work. 6. Construct decorative brick work. 7. Perform Concreting work 8. Perform Plaster on Concrete Surface 9. Install brick cladding
5. Regulatory Arrangements	The holder of this qualification should have been assessed by a BTEB certified assessor and found to be competent in the units listed in Section 2.
6. Accreditation requirements	The qualifications shall be offered in compliance with the accreditation requirements set by BTEB.
7. Transition arrangements	In the absence of certified assessors, the BTEB shall appoint trainers who have undergone assessment trainings.
8. Contact for comments	Chairperson Bangladesh Technical Education Board (BTEB) Agargaon, Sher-E-Bangla Nagar, Dhaka-1000

Section 2 National Competency Standards

for

National Skills Certificates in Masonry

Generic Competencies

Code	Unit of Competency	Level	No. of Hrs.
GN0100112A	Communicate in the workplace	1	30
GN0100212A	Work in a team environment	1	18
GN0100312A	Practice workplace cleanliness	1	18
GN0100412A	Practice occupational health and safety (OHS) procedures.	1	30
GN0300512A	Demonstrate work values	3	18
GN0300612A	Lead small team	3	18
GN0300712A	Practice negotiation skills	3	24
Total			156 hours

Sector Specific Competencies

Code	Unit of Competency	Level	No. of Hrs.
CON0100112A	Work in the Construction Sector	1	24
CON0100212A	Interpret Drawings and Specifications in Masonry Manuals	1	30
CON0100312A	Use Hand Tools and Power Tools for the Masonry	1	30
CON0200412A	Perform Measurement and Calculations in masonry	2	48
CON0200512A	Maintain tools and equipment	2	30
Total			162

Occupation Specific Competencies

Code	Unit of Competency	Level	No. of Hrs.
CONMAS0100112A	Prepare Masonry Mortar	1	39
CONMAS0100212A	Perform Paving Work	1	48
CONMAS0100312A	Perform Basic masonry works	1	45
CONMAS0100412A	Perform Plaster on masonry surface	1	48
CONMAS0200512A	Lay Brick and Block For Structure	2	18
CONMAS0200612A	Perform damp proof course	2	15
CONMAS0200712A	Perform Arch work	2	48
CONMAS0200812A	Construct decorative brick work	2	30
CONMAS0200912A	Perform Concreting work	2	24
CONMAS0201012A	Perform Plaster on Concrete Surface	2	36
CONMAS0201112A	Install brick cladding	2	21
CONMAS0301212A	Install pre-cast and fabricated components	3	60
CONMAS0301312A	Apply special cement finishes to concrete and masonry surfaces	3	45
CONMAS0301412A	Repair defective concrete and masonry surfaces	3	48
CONMAS0301512A	Perform waterproofing work	3	57
Total			582 hours
Grand Total			900 hours

**Course Structure for National Skills Certificate in Masonry
For Level -II**

Sector Specific Competencies

Code	Unit of Competency	Level	No. of Hrs
CON0200412A	Perform Measurement and Calculations in masonry	2	48
CON0200512A	Maintain tools and equipment	2	30
Total			78

Occupation Specific Competencies

Code	Unit of Competency	Level	No. of Hrs
CONMAS0200512A	Lay Brick and Block For Structure	2	18
CONMAS0200612A	Perform damp proof course	2	15
CONMAS0200712A	Perform Arch work	2	48
CONMAS0200812A	Construct decorative brick work	2	30
CONMAS0200912A	Perform Concreting work	2	24
CONMAS0201012A	Perform Plaster on Concrete Surface	2	36
CONMAS0201112A	Install brick cladding	2	21
Total			192
Grand Total			270 hrs.

Section 3. The Sector Specific Competencies

Unit of Competency	Perform Measurement and Calculations in masonry
Unit Code	CON0200412A
Unit Descriptor	This unit covers the knowledge skills and attitude required to perform measurements and calculations in masonry relating to activities in the construction sector. It includes the following steps: select measuring devices, obtain measurements, perform simple calculations and clean the work place.
Nominal Hours	48 hours

Elements of Competency	Performance Criteria Bold italicized words are detailed in the Range of Variables
1. Collect measuring devices	1.1. PPE (Personal protective equipment) and other safety devices are collected and used. 1.2. Work instructions are confirmed and applied. 1.3. Materials to be measured are identified and classified. 1.4. Appropriate measuring devices are selected and collected. 1.5. Specifications are obtained from relevant documents . 1.6. Tolerance and clearance limits are identified and adjusted.
2. Obtain measurements	2.1. Measurements are obtained using measuring devices. 2.2. Systems of measurements are identified and converted. 2.3. Results are confirmed and recorded.
3. Perform simple calculations	3.1. Simple calculations involving four basic operations are carried out. 3.2. Other operations are used to complete tasks. 3.3. Appropriate formulas for calculating quantities of materials are selected. 3.4. Calculations are performed and verified. 3.5. Material quantities are calculated. 3.6. Results are interpreted and communicated to authority.
4. Clean the work place	4.1. Cleaning materials are collected. 4.2. Measuring devices are cleaned, maintained and stored. 4.3 Waste materials are disposed at proper place.

Variables	Range (Included but not limited to):
1. Materials	Refers to all construction materials included but not limited to the following: 1.1. Construction Site Support (Dogging, Rigging, etc.) 1.2. Carpentry and Form Works 1.3. Masonry, Brick/Block Laying and Concreting 1.4. Surface Finishing, Tiling and Painting 1.5. Roofing 1.6. Plumbing 1.7. Residential Electrical Wiring and Cabling
2. Measuring devices	2.1. Set squares 2.2. Dial indicators 2.3. Micrometers 2.4. Slide calipers 2.5. Steel tape measure 2.6. Steel rule 2.7. Carpenter's square 2.8. Calculator 2.9. Vermeer's 2.10. Feeler gauges 2.11. Thermometers 2.12. protractors
3. PPE	3.1. Dust mask 3.2. Goggles 3.3. Gloves 3.4. Safety shoes 3.5. Aprons 3.6. Overalls 3.7. Helmet
4. Documents	4.1. Technical Manuals 4.2. Specifications 4.3. Sketches 4.4. Drawings
5. Measurements	5.1. Length 5.2. Width 5.3. Depth

	5.4. Height 5.5. Weight 5.6. Number 5.7. Mass 5.8. Diameter 5.9. Tolerance 5.10. Roundness 5.11. Angles 5.12. Flatness angle 5.13. Clearances
6. Four basic operations	6.1. Addition 6.2. Subtraction 6.3. Multiplication 6.4. Division
7. Other operations	7.1. Fractions 7.2. Percentages 7.3. Mixed numbers 7.4. Conversions 7.5. Scales 7.6. Trigonometric functions 7.7. Algebraic computations
8. Calculations	8.1. Area 8.2. Volume 8.3. Circumference 8.4. Clearance 8.5. Diameter 8.6. Scales 8.7. Ratio

Evidence Guide

1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Demonstrated knowledge in measurement and calculation. 1.2 Satisfied the requirements in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1. Types of Measuring Devices 2.2. Measurement and Calculation 2.3. Recording

	<p>2.4. Collection and storing materials.</p> <p>2.5. Fraction and Decimals</p> <p>2.6. Linear Measurement</p> <p>2.7. Unit Of Conversion and Conversion Factors</p> <p>2.8. Dimension</p> <p>2.9. Ratio And Proportion</p> <p>2.10. Trigonometric Function</p> <p>2.11. Algebraic Equation</p> <p>2.12. Allowances And Tolerances</p> <p>2.13. Presentation Of Data and Information</p> <p>2.14. Tolerances</p> <p>2.15. Care in the Use of Measuring Devices</p>
3. Underpinning Skills	<p>3.1. Selecting measuring devices</p> <p>3.2. Obtaining measurements</p> <p>3.3. Performing calculations</p> <p>3.4. Cleaning up</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource Implications	<p>The following resources should be provided</p> <p>5.1 Suitable ventilated work area/shop with facilities and accessories</p> <p>5.2 Easy access and scope of measurement</p> <p>5.3 Availability of quality measuring and calculating devices</p> <p>5.4 Information on construction materials appropriate to the relevant construction field</p>
6. Method of Assessment	<p>Competency should be assessed by</p> <p>6.1 Workplace observation</p> <p>6.2 Demonstration</p> <p>6.3 Oral Interview</p> <p>6.4 Written examinations</p> <p>6.5 Portfolio</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place after</p>

	completion of the module.
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Accreditation Requirements

Training providers should be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.

Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.

Unit of Competency	Maintain tools and equipment for masonry
Unit Code	CON0200512A
Unit Descriptor	This unit covers the knowledge, skills, and attitude required to Maintain tools and equipment. It includes check condition of tools and equipment performs basic preventive maintenance and store tools and equipment.
Nominal Hours	30 hours

Elements of Competency	Performance Criteria
	Bold italicized words are detailed in the Range of Variables
1. Check condition of tools and equipment	1.1 Materials, tools and equipment are identified. 1.2 Non-functional tools and equipment are segregated and labeled. 1.3 Safety of tools and equipment are observed. 1.4 Condition of PPE is checked.
2. Perform basic preventive maintenance	2.1 Appropriate lubricants are identified. 2.2 Tools and equipment are lubricated. 2.3 Measuring instruments are checked and Calibrated. 2.4 Tools are cleaned and lubricated. 2.5 Defective instruments, equipment and accessories are inspected and replaced. 2.6 Tools are inspected, repaired and replaced after use. 2.7 Work place is cleaned and kept in safe state in line.
3. Store tools and equipment	3.1 Inventory of tools, instruments and equipment are conducted and recorded. 3.2 Tools and equipment are stored safely in appropriate locations.

Range of Variables

Variables	Range (Included but not limited to):
1. Materials	1.1 Mobil /oil 1.2 Grease 1.3 Kerosene oil 1.4 Waste cotton 1.5 Hand wash 1.6 Soap
2. Tools and equipment	2.1 Tools Cutting tools - hacksaw, crosscut saw, rip saw Boring tools - auger, brace, grin let, hand drill Holding tools - vise grip, C-clamp, bench vise Threading tools - die and stock, taps 2.2 Measuring instruments/equipment- mortar box(Fera), steel tape, mortar bucket.
3. PPE	3.1 Goggles 3.2 Gloves 3.3 Safety shoes 3.4 Aprons/Coveralls
4. Forms	4.1 Maintenance schedule forms 4.2 Requisition slip 4.3 Inventory Form 4.4 Inspection Form 4.5 Procedures

Evidence Guide

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Selected and used processes, tools and equipment to carry out task 1.2 Identified functional and non-functional tools and equipment 1.3 Checked lubricated and calibrated tools, equipment and instruments. 1.4 Replaced defective tools, equipment and their accessories 1.5 Observed and applied handling of tools and equipment and safety work practices 1.6 Prepared and submitted inventory report. 1.7 Maintained workplace in accordance with OHS regulations 1.8 Stored tools and equipment safely in
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	appropriate locations.
2. Underpinning knowledge	<p>2.1 Safety Practices</p> <p>2.1.1 Use of PPE</p> <p>2.1.2 Handling of tools and equipment</p> <p>2.1.3 Good housekeeping</p> <p>2.2 Materials, Tools and Equipment</p> <p>2.2.1 Types and uses of lubricants</p> <p>2.2.2 Types and uses of cleaning materials</p> <p>2.2.3 Types and uses of measuring instruments and equipment</p> <p>2.3 Preventive Maintenance</p> <p>2.3.1 Methods and techniques</p> <p>2.3.2 Procedures</p>
3. Underpinning Skills	<p>3.1 Preparing maintenance materials, tools and equipment</p> <p>3.2 Proper handling of tools and equipment</p> <p>3.3 Performing preventive maintenance</p> <p>3.1 Following instructions</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource implications	<p>The following resources should be provided:</p> <p>5.1 Workplace</p> <p>5.2 Maintenance schedule</p> <p>5.3 Maintenance materials, tools and equipment relevant to the proposed activity/task</p>
6. Methods of assessment	<p>Competency should be assessed by</p> <p>6.1 Workplace observation</p> <p>6.2 Demonstration</p> <p>6.3 Oral Interview</p> <p>6.4 Written examinations</p> <p>6.5 Portfolio</p>
7. Context of assessment	<p>For certification competency should be assessed individually in the actual work place after completion of the module.</p>

Accreditation Requirements

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Section 4: The Occupation Specific Competencies

Unit of Competency	Lay Brick and Block for Structure
Unit Code	CONMAS0200512A
Unit Descriptor	This unit covers the knowledge, skills and attitude required to lay brick and block for structure It includes: establish location; Lay brick structure and block structure ; Complete work and curing and Clean the work place.
Nominal Hours	18 hour

Elements of Competency	Performance Criteria <i>Bold italicized</i> words are detailed in the Range of Variables
1. Establish location	1.1 Plans are read and interpreted. 1.2 PPE is collected and used. 1.3 Tools and equipment are selected and prepared. 1.4 Materials are selected and prepared. 1.5. Building lines are located. 1.6 Location of brick structure and block structure based on reference lines of building is established for proper alignment and dimension. 1.7 Horizontal and vertical guide for brick and block is installed. 1.8 Lay-out of brick and block structure is correctly marked.
2. Lay brick structure and block structure	2.1 Bricks and blocks are laid on the line at minimum allowance of 1/16 inch and reinforcing bar is installed. 2.2 Mortars are spread on the base & gaps of brick and block are filled. 2.3 Bricks and blocks are Positioned and laid. 2.4 Constant checking of plumb and level is done during brick and block laying. 2.5 Form-works are installed in accordance with building plan.
3. Complete work and curing	3.1 Final checks are made to ensure that work is accurate. 3.2 Curing is done properly. 3.3 Completed work is reported for final

	checking.
4. Clean the work place	4.1. Tools and equipment are cleaned and stored. 4.2. Work area is cleaned. 4.3. Waste materials are disposed in proper place.

Range of Variables

Variables	Range(Include but not limited to):
1. PPE	1.1 Safety shoes 1.2 Safety gloves 1.3 <i>Safety</i> helmet 1.4 Dust mask 1.5 Body harness as required 1.6 Safety belt 1.7 Proper clothes (long sleeves and long pants)
2. Tools and equipment	2.1 Measuring box 2.2 Trowel 2.3 Wooden peg 2.4 Nylon string 2.5 Steel tape or push-pull rule 2.6 Mason hammer 2.7 Plumb bob 2.8 Pencil 2.9 Hand saw 2.10 Manual bender 2.11 Tie wire 2.12 Steel square 2.13 Hacksaw 2.14 Level hose 2.15 Spirit level 2.16 Mortar bucket 2.17 Steel float 2.18 Sieves
3. Materials	3.1 String or nylon cord 3.2 Nails 3.3 Lumber(Patta)

	<p>3.4 Water</p> <p>3.5 Cement</p> <p>3.6 Sand</p> <p>3.7 Admixture</p>
4. Brick structures and block structures	<p>4.1 Stiffener columns</p> <p>4.2 Lintel beams</p> <p>4.3 Wall footing</p> <p>4.4 Walls (exterior, interior and parapet, etc.)</p> <p>4.5 Fireplace</p> <p>4.6 Chimneys</p> <p>4.7 Septic vaults</p>
5. Transport	<p>5.1 Trolley</p> <p>5.2 Rickshaw Van</p>
6. Final checks	<p>6.1 Plumb</p> <p>6.2 Levelness</p> <p>6.3 Squareness</p> <p>6.4 Flatness / evenness of surface</p>
7.Blocks	<p>7.1 Concrete block</p> <p>7.2 Ceramic block</p> <p>7.3 Mortar Block</p>

Evidence Guide

1. Critical aspects of competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Interpreted and identified plans.</p> <p>1.2 Prepared and selected materials, tools and equipment for job requirements</p> <p>1.3 Located brick/block structure for proper alignment, squareness and dimension.</p> <p>1.4 Performed the required plumbness, levelness and squareness of laid-out brick/block.</p>
2. Underpinning knowledge	<p>2.1 Plan interpretation</p> <p>2.2 PPE use</p> <p>2.3 Building lay-out</p> <p>2.4 Horizontal and vertical line setup</p> <p>2.5 Brick & block laying</p> <p>2.6 Mortar spreading system</p> <p>2.7 Form work installation</p>

3. Underpinning skills	<p>3.1 Interpreting Drawing and specifications</p> <p>3.2 Using materials, tools and equipment</p> <p>3.3 Performing laying of brick and blocks processes</p> <p>3.4 Curing of work</p> <p>3.5 Cleaning process.</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource Implications	<p>The following resources should be provided:</p> <p>5.1 Workplace location</p> <p>5.2 Tools and equipment</p> <p>5.3 Scaffolding and form works</p> <p>5.4 Drawings and specifications relevant to the task</p> <p>5.5 Basic PPE</p>
6. Methods of Assessment	<p>Competency should be assessed by</p> <p>6.1 Workplace observation</p> <p>6.2 Demonstration</p> <p>6.3 Oral Interview</p> <p>6.4 Written examinations</p> <p>6.5 Portfolio</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place after completion of the module.</p>

Accreditation Requirements

Training providers should be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.

Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.

Unit of Competency	Perform Damp Proof course
Unit Code	CONMAS0200612A
Unit Descriptor	This unit covers the knowledge, skills and attitude required to perform damp proof course. It includes: Prepare surface; lay DPC and Clean the work place.
Nominal Hours	15 hours

Elements Of Competency	Performance Criteria Bold italicized words are detailed in the Range of Variables
1. Prepare surface	1.1 PPE are collected and used. 1.2 Tools & Material are selected and collected. 1.3 DPC requirements are identified & collected. 1.4 Top surface is checked and cleaned to remove foreign matter. 1.5 Level points are fixed for proper leveling.
2. Lay DPC	2.1 Cement mortar are mixed according to standards ratio. 2.2 Cement sand screed are placed on foundation up to the marked level and allowed to get dried 2.3 DPC material mixed. 2.4 DPC material are applied over the cement screed surface. 2.5 Sand sprinkled has applied over the asphalt layer to finish the work
3. Clean the work place	3.1 Tools and equipment are cleaned and stored. 3.2 Work area is cleaned. 3.3 Waste materials are disposed in proper place.

Range of Variables

Variables	Range (Include but not limited to):
1. Personal safety (PPE)	1.1 Helmet 1.2 Gloves 1.3 Dusk mask 1.4 Safety glass 1.5 Safety shoe. 1.6 Apron
2. Tools	2.1 Steel tape(3m) 2.2 Buckets 2.3 Watering can 2.4 Sprit level 2.5 Water tube 2.6 Wooden floats 2.7 Masonry trowel 2.8 Pans 2.9 Paint brush
3. Materials	3.1 Cement 3.2 Water 3.3 Sand 3.4 Bituminous materials 3.5 Chips 3.6 Polythene

Evidence Guide

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Maintained evenness of the applied DPC layer 1.2 Maintained thickness of the DPC layer (20 mm) 1.3 Layed DPC layer to cover entire surface area. 1.4 Uniformity of sprinkled sand layer to cover the bitumen layer
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2. Underpinning knowledge	2.1 Mortar mix ratio related to DPC 2.2 The importance and characteristics of DPC 2.3 Asphalt materials 2.4 Effects of sand coat 2.5 Interpretation of technical and safety information chemicals/materials, which are used as covering in laying DPC
3. Underpinning Skills	3.1 Mixing of cement mortar. 3.2 Leveling and marking 3.3 Spreading cement sand evenly 3.4 Spreading sand blinding coat
4. Underpinning Attitude.	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 Implication	The following resources should be provided 5.1 Suitable ventilated work area/shop with facilities and accessories 5.2 Easy access and scope of measurement 5.3 Availability of quality measuring and calculating devices 5.4 Information on construction materials
6.1 Methods of Assessment	Competency should be assessed through- 6.1 Direct observation 6.2 Demonstration 6.3 Portfolio. 6.4 Oral question 6.5 Written test
7. Context of Assessment	For certification competency should be assessed individually in the actual work place after completion of the module.
<p>Accreditation Requirements</p> <p>Training providers should be accredited by Bangladesh Technical Education Board (BTEB), 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 any national</p>	

qualification.

Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.

Unit of Competency	Perform Arch work
Unit Code	CONMAS200712A
Unit Descriptor	This unit covers the knowledge, skills and attitude required to perform arch work. It includes: Prepare for work ; Set-out first course; construct wall to arch level; construct arch centre; cut and lay bricks and blocks to form arch and clean the work place.
Nominal Hours	48 hours

Elements Of Competency	Performance Criteria
	Bold italicized words are detailed in the Range of Variables
1. Prepare for work	<p>1.1. Personal Protective Equipment (PPE) are collected and used.</p> <p>1.2. Work instructions, including plans, specifications and operational details are obtained for preparation of formation level of brick and block laying tasks.</p> <p>1.3. Signage and barricade requirements are identified and implemented.</p> <p>1.4. Tools and equipment are selected and collected to carry out.</p> <p>1.5. Materials are identified, obtained, prepared and located ready for use.</p> <p>1.6. Required quantity of material is calculated in accordance with plan and design.</p>
2. Set-out first course	<p>2.1 Location and line of brick work and block work on wall are set out on concrete footing or slab according to drawings.</p> <p>2.2 Form work is prepared.</p> <p>2.3 Scaffolding is prepared as required</p> <p>2.4. Span of masonry arch is determined allowing plus 4mm length each side from centre of Arch.</p> <p>2.5. Arch spans are set out to locate for first course.</p>
3. Construct wall to arch level	<p>3.1. Mortar mix is prepared.</p> <p>3.2. Brick work is carried out.</p>

	<p>3.3. Gauge of abutting walls is maintained within standard tolerance at each course level.</p> <p>3.4. Plumb and alignment of vertical wall face are maintained.</p> <p>3.5. Bricks are cut according to shape of arch.</p> <p>3.6. Bricks and blocks are laid over length of wall by maintaining level.</p> <p>3.7. Abutment or piers are laid vertical up to springing line.</p> <p>3.8. Bricks and blocks are laid in stretcher bond to springing line of arch with perpendicular joints.</p>
4. Construct arch centre	<p>4.1. Arch centre is set out and curve is drawn up in accordance with plan and design.</p> <p>4.2. Materials is collected and cut to shape.</p> <p>4.3. Height of springing line is determined and height of crown of arch is selected to the standard tolerance.</p> <p>4.4. Supports are adjusted to ensure arch centre is level at right angles to wall face and level across springing line.</p> <p>4.5. Props, packers and wedges are located for easy removal.</p> <p>4.6. Position of central key brick or block is set for gauged arch, where tape used to mark gauge.</p>
5. Cut and lay bricks and blocks to form arch	<p>5.1 Bricks and blocks are cut and laid on centre to form arch.</p> <p>5.2. Joints are maintained to equal size and parallel on the extrados of arch.</p> <p>5.3. Size of wedge shape is maintained on face.</p> <p>5.4. Centreline of key brick and block wedge is maintained through vertical centre line of arch.</p> <p>5.5. Even joint thickness is maintained around extrados for cut brick and block work.</p> <p>5.6. Bricks are cut and laid to maintain even joints.</p> <p>5.7. Joints are stacked evenly according to depth and shape.</p>
6. Clean the work place	<p>6.1. Tools and equipment are cleaned and stored.</p> <p>6.2 Work area is cleaned.</p> <p>6.3 Waste materials are disposed in proper place.</p>

Range of Variables

Variables	Range (Include but not limited to):
1. P.P.E.	1.1 Safety shoes. 1.2 Safety gloves. 1.3 Safety helmet. 1.4 Body harness safety betas.
2. Tools and Equipment	2.1 Pencil 2.2 Scriber 2.3 Carpenters saw 2.4 Pointing trowel 2.5 Plum bob 2.6 Shovel 2.7 Pan 2.9 Pocket tape(3m) 2.10 Mason hammer 2.11 Hand saw 2.12 Measuring rule 2.13 Bolsters 2.14 Sieve 2.15 Buckets 2.16 Line pin 2.17 Masons squares 2.18 Packers & wedges 2.19 Spirit levels 2.20 String level 2.21 Adjustable metal props 2.22 Level hose
3. Materials	3.1 String or nylon cord 3.2 Sponge 3.3 Bricks and Block 3.4 Cement 3.5 Sand 3.6 Water 3.7 Timber 3.8 Nails

	3.9 Bamboo 3.10 Steel 3.11 Thread
4. Arch	4.1 Brick arches. 4.2 Stone arches. 4.3 Steel arches.
5.Tolerance	5.1 Brick arches ± 3 mm. 5.2 Stone arches ± 2 mm. 5.3 Steel arches ± 3 mm. 5.4 Ornamental arch ± 2 mm.
6. Brick	6.1 First class brick 6.2 2 nd class brick 6.3 3 rd class brick
7.Bond	7.1 English bond 7.2 Flemish bond 7.3 Header bond 7.4 Stretcher bond
8.Joints	8.1 "T" joint 8.2 "L" joint 8.3 Cross joint

Evidence Guide

1. Critical Aspects of Competency	Competency assessment requires evidence that the candidate: 1.1 Identified signage and barricade 1.2 Set out arch span and arch center 1.3 Mixed mortar 1.4 Located props, packers and wedges 1.5 Determined height of Springing line 1.6 Maintained size of wedge shape and even joint thickness
2. Underpinning knowledge	2. 1 Work instruction, plans and specification 2. 2 Brick and block laying 2. 3 Collection tools and materials 2. 4 Location and line setting 2. 5 Arch span and arch center 2. 6 Mortar mixing

	<p>2. 7 Props, packers and wedges location</p> <p>2. 8 Height of springing line determination</p> <p>2. 9 Size and shape of wedges setting</p> <p>2. 10 Even joint thickness maintaining</p>
3. Underpinning skills	<p>3.1 Collecting tools and materials</p> <p>3.2 Brick and block laying</p> <p>3.3 Location and line setting</p> <p>3.4 Arch span and arch center</p> <p>3.5 Preparing Mortar</p> <p>3.6 Locating props, packers and wedges</p> <p>3.7 Determining Height of springing line</p> <p>3.8 Setting Size and shape of wedges</p> <p>3.9 Maintaining even joint thickness</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4,5 Respect for rights of peers and seniors in workplace</p>
5. Resource Implication	<p>The following resources should be provided-</p> <p>5.1 Work place</p> <p>5.2 Tools and equipment appropriate to joint and connection process.</p>
6. Methods of Assessment	<p>Competency in this unit may be assessed through:</p> <p>1.1 Direct observation</p> <p>1.2 Oral Questions</p> <p>1.3 Written test</p> <p>1.4 Portfolio</p> <p>1.5 Demonstration</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place after completion of the module.</p>

Accreditation Requirements

Training providers should be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.

Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.

Unit Competency	Construct decorative brick work
Unit Code	CONMAS200812A
Unit Descriptor	This unit covers the knowledge, skills and attitude required to construct decorative brickwork. It includes: prepare work location; set out decorative brickwork; Lay bricks to form corbels and protrusions; Construct brickwork to acute and obtuse angled corners; Lay plinth bricks or squints to form plinth areas or sills; Install decorative capping; Construct decorative panel and Clean the work place.
Nominal Hours	30 hours

Elements Of Competency	Performance Criteria <i>Bold italicized</i> words are detailed in the Range of Variables
1. Prepare work location	<p>1.1. PPE (Personal protective equipment) and other safety devices are selected and used.</p> <p>1.2. Tools and equipment are selected and collected to carry out tasks</p> <p>1.3. Work instructions, including plans, specifications and operational details are obtained and applied from relevant information.</p> <p>1.4 Signage and barricade requirements are identified and implemented.</p> <p>1.5. Required quantity of material is calculated in accordance with plan and design allowing with quality requirements.</p> <p>1.6 Materials are identified, obtained, prepared and located ready for use.</p>
2. Set out decorative brickwork	<p>2.1 Locations of decorative brickwork are determined as per drawing.</p> <p>2.2 Details of structural feature for decorative brickwork are determined.</p> <p>2.3 Brickwork is set out according to location and dimensions as per drawings and specifications.</p> <p>2.4 Mortar is prepared with proper ratio.</p>

3. Lay bricks to form corbels and protrusions	<p>3.1. Corbelling design along with overhanging portion is checked.</p> <p>3.2. Bricks are laid to form corbels by maintaining bond and level of alignment of the work</p> <p>3.3 Bricks are laid to form protrusions in accordance with drawings and specifications of the building.</p> <p>3.4 Joints of brick work are raked to the correct depth.</p> <p>3.5 Brick work is brushed down and allow for drying.</p>
4. Construct brickwork to acute and obtuse angled corners	<p>4.1. Junction at corners is determined.</p> <p>4.2. Standard bricks are laid to line and level to form dogtooth and mitre junctions.</p> <p>4.3. Squints and standard bricks are laid by maintaining line and level of designed flush junctions.</p> <p>4.4. Bond and gauge are maintained.</p> <p>4.5 Joints of brickwork are raked to the correct depth.</p> <p>4.6 Brickwork is brushed down and allow for drying.</p>
5. Lay plinth bricks or squints to form plinth areas or sills	<p>5.1. Plinth bricks are laid to level and alignment to form protruding plinth.</p> <p>5.2. Plinth bricks or squints are laid to sill locations to form feature finish to level and alignment.</p>
6. Install decorative capping	<p>6.1. Bricks are cut and laid on edge mitre coping to 90° corner.</p> <p>6.2. Bricks are cut and laid on edge meter coping to 135° corner.</p>
7. Construct decorative panel	<p>7.1 Area for setting out is located and checked for plumb, level, clean and dry.</p> <p>7.2. Set out of panel is completed as per plan and specifications.</p> <p>7.3 Whole bricks are laid for conforming the setting out.</p> <p>7.4 Edges of starting and feather are cut and laid to confirm the set out.</p>
8. Clean the work place.	<p>8.1 Tools and equipment are cleaned and stored.</p> <p>8.2 Work area is cleaned</p>

	8.3 Waste materials are disposed in proper place
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Range of Variables

Variables	Range (Include but are not limited to):
1. PPE	1.1 Safety shoes 1.2 Safety Gloves 1.3 Safety helmet 1.4 Body harness/ Safety belt 1.5 Apron.
2. Tools & Equipment	2.1 Measuring tap (30m) 2.2 Masonry Trowel 2.3 Try square 2.4 Spirit level 2.5 Plumb bob 2.6 Water Tube 2.7 Cold chisel 2.8 Center pegs 2.9 Steel tap (3m) 2.10 Pointing trowel 2.11 Spirit level 2.12 Spade 2.13 Shovel 2.14 Pans 2.15 Buckets 2.16 Welting brush 2.17 Precast & prefabricated components
3. Materials	3.1 Cement 3.2 Water 3.3 Sand 3.4 Metal 3.5 Paper pin 3.6 Concrete repairing chemicals 3.7 Nylon string 3.8 Wire nails

	3.9 Scaffolding materials
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Evidence Guide

1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <ol style="list-style-type: none"> 1. Identified and implemented. 2. Determined locations of decorative brickwork as per drawing. 3. Determined details of structural feature for decorative brick work. 4. Set out brick work according to location and dimensions as per drawings and specifications. 5. Prepared mortar with proper ratio. 6. Laid bricks to form corbels by maintaining bond and level of alignment of the work 7. Laid Bricks to form protrusions in accordance with drawings and specifications of the building. 8. Raked Joints of brickwork to the correct depth. 9. Cut and laid Bricks on edge mitre coping to 90° corner. 10. Cut and laid bricks on edge meter coping to 135° corner. 11. Located Area for setting out and checked for plumb, level, clean and dry. 12. Completed Set out of panel as per plan and specifications. 13. Laid Whole bricks for conforming the setting out.
2. Underpinning knowledge	<ol style="list-style-type: none"> 2.1 Instruction, plans and specifications 2.2 Tools and materials uses 2.3 Location and line setting 2.3 Mortar mixing 2.4 Information collection and interpretation 2.5 Safety requirements 2.6 Tools, equipment and raw materials collection and preparation 2.7 Environmental and safety precaution 2.8 Decorative brick collection and setting 2.9 Corbels and protrusions design

	<p>2.10 Junction and corners bricks setting</p> <p>2.11 Plinth bricks and squints setting</p> <p>2.12 Capping setting</p> <p>2.13 Decorative Panel construction</p> <p>2.14 Joints raking and finishing</p>
3. Underpinning skills	<p>3.1 Uses PPE</p> <p>3.2 collection and preparation of tools, equipment and raw materials, environmental and safety precaution</p> <p>3.3 Collection and setting decorative brick</p> <p>3.4 Design of corbels and protrusions</p> <p>3.5 Setting Junction and corners bricks</p> <p>3.6 Setting plinth bricks and squints</p> <p>3.7 Setting Capping</p> <p>3.8 Construction decorative Panel</p> <p>3.9 Raking and finishing joints</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5. Resource implications	<p>The following resources should be provided:</p> <p>5.1 Adequate workplace</p> <p>5.2 Availability of quality tools and materials required.</p> <p>5.3 Relevant specifications and work instruction.</p> <p>5.4 Information on company standard operation procedures (SDP), occupational health and safety (OHS) and others policies.</p>
6. Methods of assessment	<p>Competency in this unit should be assessed through:</p> <ol style="list-style-type: none"> 1. Direct observation 2. Oral Questions 3. Written test 4. Portfolio 5. Demonstration
7. Context of assessment	<p>For certification competency should be assessed individually in the actual work place after</p>

	completion of the module.
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Accreditation Requirements

Training providers should be accredited by Bangladesh Technical Education Board (BTEB) , 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 any national qualification.

Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.

Unit of Competency	Perform Concreting work
Unit Code	CONMAS200912A
Unit Descriptor	<p>This unit covers the knowledge, skills and attitude required to perform concreting work.</p> <p>It includes: prepare to carry out concreting work; Collect tools, equipment and materials; Erect formwork; Fabricate reinforcement works; Coordinate batch, mix and transport concrete; Place concrete; Curing of concrete and Clean the work place.</p>
Nominal Hours	24 hours

Elements Of Competency	Performance Criteria <i>Bold italicized</i> words are detailed in the Range of Variables
1. Prepare concrete work	<p>1.1 Elevations, sections and detailed drawings are interpreted and information gathered related to concrete work.</p> <p>1.2 Materials, equipment and man hours are estimated for completion the job.</p> <p>1.3 Cement, sand, metal and water available are checked for concrete work.</p> <p>1.4 Samples is prepared for testing and sent to the laboratory.</p> <p>1.5 Tests are carried out at site to find out the quality of materials</p> <p>1.6 Quantity of materials is determined.</p>
2. Collect tools, equipment and materials	<p>2.1 PPE are selected and used.</p> <p>2.2 Tools, equipment and materials are selected and collected.</p>
3. Erect formwork	<p>3.1 Formwork for columns and lintels are made.</p> <p>3.2 Shutters are Prefabricated made of steel and timbers as required.</p> <p>3.3 Components are cleaned and stacked.</p>

4. Fabricate reinforcement works.	<p>4.1 Construction drawings, bar bending schedules are selected for matching the given requirements.</p> <p>4.2 Steel bars are cut.</p> <p>4.3 Steel bars are bent to given shapes.</p> <p>4.4 Bent bars are positioned and tied according to the plans.</p>
5. Coordinate batch, mix and transport concrete.	<p>5.1 Mixing location is identified and suitable place is located.</p> <p>5.2 Effect of sand bulking is rectified.</p> <p>5.3 Volume of water is obtained according to given water cement ratio.</p> <p>5.4 Sample of concrete is taken, test cubes are made and slump test is performed under direct supervision.</p> <p>5.5 Proper transporting method of concrete is used.</p> <p>5.6 Accelerators and retarders are used.</p>
6. Place concrete	<p>6.1 Shuttering is checked for strength, leaks and attended to corrections.</p> <p>6.2 Setting time of cement is identified.</p> <p>6.3 Concrete is placed in layers and vibrated to avoid air trapping</p> <p>6.4 Concrete surface is finished.</p>
7. Curing of concrete	<p>7.1 Curing materials are collected.</p> <p>8.2 Curing of concrete is completed.</p>
8. Clean the work place	<p>8.1 Tools and equipment are cleaned and stored.</p> <p>8.2 Work area is cleaned</p> <p>8.3 Waste materials are disposed in proper place</p>

Range of Variables

Variables	Range (Include but are not limited to):
1. PPE	1.1 Dust mask. 1.2 Goggles. 1.3 Safety shoes. 1.4 Apron. 1.5 Gloves. 1.6 Helmet 1.7 Safety belt
2. Tools and equipment	2.1 Measuring tap (30m) 2.2 Concrete mixer 2.3 Shovel 2.4 Concrete pans 2.5 Masonry Trowel 2.6 Chisel 2.7 Plumb bob 2.8 levels 2.9 Hack saw frame with blade 2.10 Steel tap (3m) 2.11 Spanners 2.12 Pointing trowel 2.13 Stamp test appraise 2.14 Sieves (different size) 2.15 Straight edge 2.16 Vibrator 2.17 Buckets 2.18 Hammer 2.19 Drill 2.20 Measurement gauge bag 2.21 Prefabricated shutters for columns 2.22 Hose pipe
3. Materials	3.1 Ordinary Portland Cement 3.2 Coarse Sand/Fine Sand 3.3 Coarse aggregate 3.4 Anchor bolts and nuts

	3.5 Mould oil 3.6 Bars of variable size 3.7 Admixture 3.8 Water 3.9 Cloth
4. Drawings	4.1 Electrical drawing 4.2 Structural plans 4.3 Architectural plans 4.4 Plumbing plan

Evidence Guide

1. Critical Aspects of Competency	Assessment required evidence that the candidate: 1.1 Interpreted elevation, Sections and drawing 1.2 Tested Materials 1.3 Made columns, beam, roof slab and lintels 1.4 Cut steel bars 1.5 Maintained ratio & quality of materials 1.6 Ensured Compactness 1.7 Erected fabricated shutter of steel and timber 1.8 Bent and cut reinforcement into proper shape 1.9 Rectified sand bulking 1.10 Checked and adjusted time setting of cement compactness
2. Underpinning Knowledge	2.1 Elevation, sections and drawings Interpretation 2.2 Tools, equipment and Materials estimating 2.3 Cement, sand, Brick chips and water checking 2.4 Materials testing and staging 2.5 Columns and lintel making 2.6 Pre-fabricated shutter making by steel and timber 2.7 Steel bar bending and cutting 2.8 Band bar positioning

	<p>2.9 Sand bulking</p> <p>2.10 Time setting of cement compactness</p>
3. Underpinning Skills	<p>3.1 Interpreting Elevation, sections and drawings</p> <p>3.2 Estimating Materials, equipment and man hours</p> <p>3.3 Checking Cement, sand, metal and water</p> <p>3.4 Checking, testing and staging Materials</p> <p>3.5 Making Columns and lintel</p> <p>3.6 Making prefabricated shutter by steel and timber</p> <p>3.7 Bending and cutting steel bar</p> <p>3.8 Positioning Band bar</p> <p>3.9 Bulking sand</p> <p>3.10 Setting time of cement compactness</p>
4. Underpinning Attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5.Resource Implications	<p>The following resources should be provided :</p> <p>5.1 Adequate work place</p> <p>5.2 Availability of quality tools and materials required</p> <p>5.2 Ensuring appropriate method and process</p>
6. Methods of assessment	<p>Competency should be assessed by</p> <p>6.1 Workplace observation</p> <p>6.2 Demonstration</p> <p>6.3 Oral Interview</p> <p>6.4 Written test</p> <p>6.5 Portfolio</p>
7.Context for assessment	<p>For certification competency should be assessed individually in the actual work place after completion of the module.</p>
<p>Accreditation Requirements</p> <p>Training providers should be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national</p>	

qualification.

Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.

Unit of Competency	Perform Plaster on Concrete Surface
Unit Code	CONMAS201012A
Unit Descriptor	This unit covers the knowledge, skills and attitude required to perform plaster on concrete surface. It includes: prepare concrete surfaces for plastering; perform plastering work; complete plastering work and curing and clean the work place.
Nominal Hours	36 hours

Elements Of Competency	Performance Criteria <i>Bold italicized</i> words are detailed in the Range of Variables
1. Prepare concrete surfaces for plastering	1.1 PPE is collected and used. 1.2 Plans and details are interpreted. 1.3 Materials, tools and equipment are selected and prepared. 1.4 Materials are properly staged at workplace and should be free from foreign matters. 1.5 Concrete surface preparation is performed according to plastering procedures.
2. Perform plastering work	2.1 Plastering surface are identified and maintained proper thickness, plumpness, levelness and alignment of structure. 2.2 Plastering of concrete is performed. 2.3 Distribution of mortar/coating is applied on the concrete surface evenly
3. Complete plastering work and curing	3.1 Final checks are made for ensuring that the plastering work is equal to whole surface. 3.2 Continuous curing is performed. 3.3 Tools, equipment and any surplus resources and materials are checked.
4. Clean the work place	4.1 Tools and equipment are cleaned. 4.2 Work area is cleaned 4.3 Waste materials are disposed in proper place

Range of Variables

Variables	Range (Include but not limited to):
1. PPE	1.1 Safety shoes 1.2 Safety belt / body harness 1.3 Safety helmet 1.4 Apron 1.5 Dust mask 1.6 Goggles 1.7 Hand gloves
2. Tools and equipment	2.1 Mason's hammer 2.2 Scaffolding 2.3 Steel tape / push-pull rule 2.4 Plumb bob 2.5 Leveling tools (leveling hose, spirit level) 2.6 Nails 2.7 Mortar box 2.8 Pointed trowel 2.9 Wooden float 2.10 Steel float 2.11 Shovel 2.12 Foam / paper 2.13 Straight edge / screed 2.14 Mason's brush 2.15 Claw hammer 2.15 Sieves
3. Materials	3.1 Cement 3.2 Sand 3.3 String or nylon cord 3.4 Concrete nails 3.5 Water 3.6 Admixture 3.7 Padlo
4. Final checks	4.1 Plumbness 4.2 Levelness 4.3 Squareness 4.4 Evenness or flatness of surface

Evidence Guide

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Interpreted and identified plans and drawings. 1.2 Performed concrete and masonry surface 1.3 Maintained thickness and plumpness 1.4 Performed curing
2. Underpinning knowledge	<ul style="list-style-type: none"> 2.1 Types and quality of materials , tools and equipment 2.2 Materials, tools and equipment collection 2.3 Materials checking and staging 2.4 Thickness, plumpness, levelness and alignment maintaining 2.5 Plastering work. 2.6 Plastering surface Curing 2.7 Thickness and alignment checking
3. Underpinning Skills	<ul style="list-style-type: none"> 3.1 Collecting materials, tools and equipment 3.2 Checking and staging materials 3.3 Maintaining thickness, plumpness, levelness and alignment 3.4 Performing Plaster work 3.5 Ensuring Curing 3.6 Checking thickness and alignment
4. Underpinning Attitude	<ul style="list-style-type: none"> 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 Implication	<ul style="list-style-type: none"> 5.1 Workplace location/ simulated workplace setting 5.2 Tools and equipment appropriate to construction processes 5.3 Plastering materials relevant to the proposed activity 5.4 Drawings, plans and specifications relevant to the task

6. Methods of Assessment	Competency in this unit should be assessed through: 6.1 Direct Observation 6.2 Demonstration 6.3 Oral question 6.4 Written test 5.5 Portfolio
6. Context of Assessment	For certification competency should be assessed individually in the actual work place after completion of the module.
<p>Accreditation Requirements</p> <p>Training providers should be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.</p>	

Unit Competency	Install Brick Cladding
Unit Code	CONMAS201112A
Unit Descriptor	This unit covers the knowledge, skills and attitude required to install brick cladding. It includes: collect tools and materials; prepare for brick cladding works; prepare cement mortar; set out for brick cladding work; perform brick cladding work and cleaning the work place.
Nominal Hours	21 hours

Elements Of Competency	Performance Criteria <i>Bold italicized</i> words are detailed in the Range of Variables
1. Collect tools and materials	1.1 Tools are collected for the cladding work. 1.2 Materials are collected and stacked at the site. 1.3 Scaffolding is put up to stock bricks at heights.
2. Prepare for brick cladding works	2.1 PPE are collected and used. 2.2 Plans and drawings are interpreted. 2.3 Materials are checked.
3. Prepare cement mortar	3.1 Cement mortar are prepared. 3.2 Quality of cement mortar is assured.
4. Set out for brick cladding work	4.1 Centre line of the brick or block is marked for brick cladding work. 4.2 Levels are marked using given reference points for getting set out. 4.3 Linear and angular measurements are marked as per drawing 4.4 Offset measurement are taken and checked according to drawing.
5. Perform brick cladding work	5.1 Bricks cladding base are soaked in wets for laying 5.2 Cement mortar are applied uniformly for bricks cladding work. 5.3 Closer and bats for brick cladding are used.

	5.4 Groves are filled up with cement mortars for better adhesion
6.Clean the work place	4.1 Tools and equipment are cleaned and stored. 4.2 Work area is cleaned 4.3 Waste materials are disposed in proper place

Range of Variables

Variables	Range (Include but not limited to):
1. PPE	1.1 Safety shoes 1.2 Safety gloves 1.3 Helmet 1.4 Apron 1.5 Musk
2. Plans	2.1 Electrical plan 2.2 Structural plan 2.3 Architectural plan 2.4 Plumbing plan
3. Tools and Equipment	2.1 Measuring tap (30m), 2.2 Masonry trowel 2.3 Try square 2.4 Sprit level 2.5 Plumb bob 2.6 Plastic tube 2.7 Cold chisel 2.8 Pointing trowel 2.9 Buckles 2.10 Shovel 2.11 Brick hammer
3. Material	3.1 Machine cut brick 3.2 Cement 3.3 Sand 3.4 water 3.5 Peg

	3.6 Adhesives
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Evidence Guide

1. Critical Aspects of Competency	<p>Assessment required evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Interpreted plans and drawings 1.2 Maintained ratio of sand, cement and water 1.3 Prepared Cement mortar 1.3 Marked centre line, angle and levels 1.4 Measured and checked angle and levels 1.5 Taken offset measurement 1.6 Filled up joint with cement mortars for better adhesion
2. Underpinning knowledge	<ul style="list-style-type: none"> 2.1 Types of tools and equipment 2.2 Types, specification and Quality materials 2.3 Reading and interpretation of plans, sketches and understanding the instructions 2.4 Ratio of sand, cement and water 2.5 Center line, angle and level marking 2.6 Offset measurement 2.7 Mortar preparation 2.8 Brick cladding 2.9 Joint filling
3. Underpinning Skills	<ul style="list-style-type: none"> 3.1 Interpreting drawings and instructions. 3.2 Collecting appropriate materials and tools 3.3 Preparing of materials and tools for the size of the works 3.4 Fixing of levels 3.5 Measuring angle and offset 3.6 Mixing of cement sand & water 3.7 Cladding of brick 3.8 Filling up of joints
4. Underpinning Attitude	<ul style="list-style-type: none"> 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 should be provided : 5.1 Adequate work place 5.2 Availability of quality tools and materials required 5.3 Ensuring appropriate method and process
6. Methods of Assessment	Competency should be assessed by 6.1 Workplace observation 6.2 Demonstration 6.3 Oral question 6.4 Written test 6.5 Portfolio
7. Context of Assessment	For certification competency should be assessed individually in the actual work place after completion of the module.
<p>Accreditation Requirements</p> <p>Training providers should be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency should meet the quality assurance requirements set by BTEB.</p>	

Annex 2: Bangladesh National Qualifications Framework

TVQF Level	Education Type			Current Qualification Structure	Job Classification
	Pre-Voc	VE	TE		
TVQF 6			Diploma	4-year Diploma	Supervisor/Middle Manager/Sub-Assistant Engineer
TVQF 5		**NSC-V		NSS Master	Highly-Skilled Worker/Supervisor
TVQF 4		**NSC-IV		NSS 1/HSC (Voc) Year 11/12	Skilled Worker
TVQF 3		**NSC-III		NSS 2/SSC (Voc) Year 10	Semi-Skilled Worker
TVQF 2		**NSC-II		NSS 3/SSC (Voc) Year 9	Basic Skilled Worker
TVQF 1		**NSC-I		NSS Basic/Basic Trade Course	Basic Worker
Pre-Voc 2	*NPVC-II			None	Pre-Vocational Trainee
Pre-Voc 1	*NPVC-I			None	Pre-Vocational Trainee

*NPVC – National Pre-Vocational Certificate

**NSC – National Skill Certificate

Annex 3: Qualification Level Descriptors

BTVQF Level	Knowledge	Skill	Responsibility	Job Class
6	Comprehensive actual and theoretical knowledge within a specific study area with an awareness of the limits of that knowledge.	Specialised and restricted range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems	Manage a team or teams in workplace activities where there is unpredictable change Identify and design learning programs to develop performance of team members	Supervisor/Middle-Level Manager/Sub Assistant Engineer
5	Very broad knowledge of the underlying, concepts, principles, and processes in a specific study area	Very broad range of cognitive and practical skills required to generate solutions to specific problems in one or more study areas.	Take overall responsibility for completion of tasks in work or study Apply past experiences in solving similar problems	Highly Skilled Worker/ Supervisor (NSC 4)
4	Broad knowledge of the underlying, concepts, principles, and processes in a specific study area	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	Take responsibility, within reason, for completion of tasks in work or study Apply past experiences in solving similar problems	Skilled Worker
3	Moderately broad knowledge in a specific study area.	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	Work or study under supervision with some autonomy	Semi Skilled worker
2	Basic underpinning knowledge in a specific study area.	Basic skills required to carry out simple tasks	Work or study under indirect supervision in a structured context	Medium Skilled Worker
1	Elementary understanding of the underpinning knowledge in a specific study area.	Limited range of skills required to carry out simple tasks	Work or study under direct supervision in a structured context	Basic Skilled Worker

BTVQF Level	Knowledge	Skill	Responsibility	Job Class
Pre-Voc 2	Limited general knowledge	Very limited range of skills and use of tools required to carry out simple tasks	Work or study under direct supervision in a well-defined, structured context.	Pre-Vocation Trainee (NPVC 2)
Pre-Voc 1	Extremely limited general knowledge	Minimal range of skills required to carry out simple tasks	Simple work or study exercises, under direct supervision in a clear, well defined structured context	Pre-Vocation Trainee (NPVC 1)

Annex 4: Key for Coding

Code	Description
Occupational Sector	
RMG	Ready-Made Garments
LEG	Light Engineering
CON	Construction
INF	Informal Sector
Occupation	
MAS	Mason
PLM	Plumbing
PNT	Painter
SFF	Scaffold and Form Fitter
TMS	Tiles and Mosaic Setter
ECN	Electrician
Competencies	
GN	Generic Competencies
CC	Common Competency
CC	Core competency

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