



Qualification Pack



Rural Mason

General/ Bamboo Structure

Compressed Stabilized Earth Block (CSEB)/ Random Rubble Masonry (RRB)

QP Code: CON/Q3603

Version: 4.0

NSQF Level: 3.5

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CON/Q3603: Rural Mason

Brief Job Description

A Rural Mason performs routine rural construction works with either bricks/blocks or bamboo and performs work such as earth work for foundation, layout marking and construction of foundations, walls, installation of sanitary fittings and fixtures in rural toilets, IPS flooring, reinforcement and shuttering work, manual concreting work, fixing of door and window frames and shutters, treatment of bamboo, construction of simple buildings using bamboo, seismic and wind protection measures, construction using CSEB and random rubble masonry work.

Personal Attributes

The individual should be physically fit to work in rural locations. The person should be able to handle relevant rural masonry tools and materials and work as per the applicable quality standards within a team.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CON/N3601: Mark layout for foundation, walls, soak pit/septic tank and monitor earthwork activities for rural construction](#)
2. [CON/N3608: Install sanitary fitting and fixtures in rural toilets](#)
3. [CON/N9001: Work according to personal health, safety and environment protocols at construction site](#)
4. [DGT/VSQ/N0101: Employability Skills \(30 Hours\)](#)

Electives (mandatory to select at least one):

Elective 1: General

1. [CON/N3602: Build brick / block masonry structures for rural construction](#)
2. [CON/N3604: Carry out IPS flooring in rural construction](#)
3. [CON/N3605: Carry out reinforcement steel works for R.C.C structures in rural construction](#)
4. [CON/N3606: Carry out shuttering works in rural construction](#)
5. [CON/N3607: Carry out manual concreting in rural construction](#)

Elective 2: Bamboo Structure



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1. [CON/N3621: Select, harvest and prepare the bamboo for the construction works](#)
2. [CON/N3622: Select, stack and perform visual quality checks on bamboo used for construction purpose](#)
3. [CON/N3623: Cut, shape, drill and join treated bamboo for making of mat, posts, joints, ties, beams and bracing used for building construction](#)
4. [CON/N3624: Construct simple rural buildings with treated bamboo](#)
5. [CON/N3625: Follow seismic and wind safety protection measures for bamboo buildings](#)

Options(Not mandatory):

Option 1: Compressed Stabilized Earth Block (CSEB)

1. [CON/N3626: Construct buildings using Compressed Stabilized Earth Block \(CSEB\)](#)

Option 2: Random Rubble Masonry (RRB)

1. [CON/N3603: Build structures using random rubble masonry for rural construction](#)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
Country	India
NSQF Level	3.5
Credits	26
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7112.0200, NCO-2015/7114.9900, NCO-2015/7126.0101



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Minimum Educational Qualification & Experience	11th grade pass OR 10th grade pass with 1 Year of experience Relevant Experience OR 8th grade pass with 3 Years of experience Relevant Experience OR Previous relevant Qualification of NSQF Level (Level 3- Assistant Mason) with 1.5 years of experience Relevant Experience
Minimum Level of Education for Training in School	Not Applicable
Pre-Requisite License or Training	NIL
Minimum Job Entry Age	18 Years
Last Reviewed On	NA
Next Review Date	30/04/2028
NSQC Approval Date	08/05/2025
Version	4.0
Reference code on NQR	QG-3.5-CO-03962-2025-V2-CSDCI
NQR Version	4.0



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CON/N3601: Mark layout for foundation, walls, soak pit/septic tank and monitor earthwork activities for rural construction

Description

This unit describes the skills and knowledge required to mark layout for foundation, walls, soak pit/septic tank and monitor earth work activities for rural construction

Scope

The scope covers the following :

- Carry out preparatory work for layout marking
- Mark the layout for walls & foundations/ footings, soak pit/ septic tank.
- Monitor excavation & preparation of base layer
- Monitor backfilling activities

Elements and Performance Criteria

Carry out preparatory work for layout marking

To be competent, the user/individual on the job must be able to:

- PC1.** read and interpret the sketches for foundation works, soak pits/septic tank
- PC2.** select required tools for the task and ensure they are in working condition
- PC3.** select appropriate Personal Protective Equipment (P.P.E.s) for the task
- PC4.** ensure work place is clear for marking the layout
- PC5.** set out the layouts as per sketches/drawings
- PC6.** identify and transfer required levels using water level tube

Mark the layout for walls & foundations/ footings, soak pit/ septic tank

To be competent, the user/individual on the job must be able to:

- PC7.** mark the center lines of the rooms by setting perpendiculars using 3-4-5 method and check right angle (90) at corners
- PC8.** set out 90 corners using builders square or 3-4-5 method and check right angle
- PC9.** Check the diagonals if they are equal
- PC10.** extend the center lines and marks the center points about 2m away from the outer edge of excavation
- PC11.** mark the width of excavation from the plan
- PC12.** mark the center line of the septic tank by setting perpendiculars using 3-4-5 method and check right angle (90) at corners as per applicability
- PC13.** mark the periphery of soak pits /septic tanks for excavation by identifying the center point

Monitor excavation & preparation of base layer

To be competent, the user/individual on the job must be able to:

- PC14.** check and ensure that excavation is carried out to the desired depth using appropriate tools
- PC15.** check and ensure desired slope of earth is maintained during digging activity



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- PC16.** provide necessary support to vertical side of excavated area to avoid soil collapse as per applicability
- PC17.** ensure earth is disposed from the excavated pit by using suitable tools and equipment such as spade, wheel barrows, pans etc
- PC18.** check for loose material, soil lumps, pebbles on achieving the desired earth level
- PC19.** ensure surface dressing work is carried out by disposing loose material, gravels, plant roots, sludge, muck or debris as per requirement to the appropriate locations
- PC20.** ensure compaction of base by ramming

Monitor backfilling activities

To be competent, the user/individual on the job must be able to:

- PC21.** check and remove gravels, oversized aggregates ,organic matter from soil prior to be use in backfilling as per site conditions
- PC22.** ensure earth is placed and spread maintaining uniform layers within tolerance limit of thickness
- PC23.** ensure water is sprinkled uniformly over the layer to be compacted as and when required as per site conditions
- PC24.** check and ensure ramming over the soil layer as per site conditions
- PC25.** Check and ensure re-filling and compaction of excavated trenches, pits surrounding the structures or at necessary location as per soil site conditions

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required masonry tools, equipment and materials
- KU3.** personal protection including the use of the related safety gears & safety equipment
- KU4.** tools and equipment required for layout marking and earthwork, their use and maintenance
- KU5.** how to use basic tools in the masonry trade such as: Spirit level, water level, plumb bob, line thread
- KU6.** how to use the 3-4-5 method for squaring corners
- KU7.** standard practices for layout and earthwork
- KU8.** layout sketches for foundation and soak pit/septic tank
- KU9.** types of foundation , importance and purpose of foundation, knowledge about depth and plinth height
- KU10.** importance and purpose of soak pit / septic tank, knowledge about their suitable location and depth
- KU11.** work space requirement in excavated area, base preparation and levelling

Generic Skills (GS)

User/individual on the job needs to know how to:



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- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and Organize required resources
- GS8.** complete work as per agreed time schedule and quality



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory work for layout marking</i>	5	15	-	-
PC1. read and interpret the sketches for foundation works, soak pits/septic tank	-	-	-	-
PC2. select required tools for the task and ensure they are in working condition	-	-	-	-
PC3. select appropriate Personal Protective Equipment (P.P.E.s) for the task	-	-	-	-
PC4. ensure work place is clear for marking the layout	-	-	-	-
PC5. set out the layouts as per sketches/drawings	-	-	-	-
PC6. identify and transfer required levels using water level tube	-	-	-	-
<i>Mark the layout for walls & foundations/ footings, soak pit/ septic tank</i>	5	15	-	-
PC7. mark the center lines of the rooms by setting perpendiculars using 3-4-5 method and check right angle (90) at corners	-	-	-	-
PC8. set out 90 corners using builders square or 3-4-5 method and check right angle	-	-	-	-
PC9. Check the diagonals if they are equal	-	-	-	-
PC10. extend the center lines and marks the center points about 2m away from the outer edge of excavation	-	-	-	-
PC11. mark the width of excavation from the plan	-	-	-	-
PC12. mark the center line of the septic tank by setting perpendiculars using 3-4-5method and check right angle (90)at corners as per applicability	-	-	-	-
PC13. mark the periphery of soak pits /septic tanks for excavation by identifying the center point	-	-	-	-
<i>Monitor excavation & preparation of base layer</i>	10	20	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. check and ensure that excavation is carried out to the desired depth using appropriate tools	-	-	-	-
PC15. check and ensure desired slope of earth is maintained during digging activity	-	-	-	-
PC16. provide necessary support to vertical side of excavated area to avoid soil collapse as per applicability	-	-	-	-
PC17. ensure earth is disposed from the excavated pit by using suitable tools and equipment such as spade, wheel barrows, pans etc	-	-	-	-
PC18. check for loose material, soil lumps, pebbles on achieving the desired earth level	-	-	-	-
PC19. ensure surface dressing work is carried out by disposing loose material, gravels, plant roots, sludge, muck or debris as per requirement to the appropriate locations	-	-	-	-
PC20. ensure compaction of base by ramming	-	-	-	-
<i>Monitor backfilling activities</i>	10	20	-	-
PC21. check and remove gravels, oversized aggregates ,organic matter from soil prior to be use in backfilling as per site conditions	-	-	-	-
PC22. ensure earth is placed and spread maintaining uniform layers within tolerance limit of thickness	-	-	-	-
PC23. ensure water is sprinkled uniformly over the layer to be compacted as and when required as per site conditions	-	-	-	-
PC24. check and ensure ramming over the soil layer as per site conditions	-	-	-	-
PC25. Check and ensure re-filling and compaction of excavated trenches, pits surrounding the structures or at necessary location as per soil site conditions	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N3601
NOS Name	Mark layout for foundation, walls, soak pit/septic tank and monitor earthwork activities for rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	3
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



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CON/N3608: Install sanitary fitting and fixtures in rural toilets

Description

This unit describes the skills and knowledge required to install sanitary fittings and fixtures in rural toilets

Scope

The scope covers the following :

- Carry out preparatory activities for installation of sanitary fittings and fixtures for rural toilets
- Carry out installation of sanitary fitting and fixtures for rural toilets
- Check gradient and perform test for leakage before commissioning of rural toilet

Elements and Performance Criteria

Carry out preparatory activities for installation of sanitary fittings and fixtures for rural toilets

To be competent, the user/individual on the job must be able to:

- PC1.** read and understand sketches of sanitary fittings and fixtures and their connection to soak pit/septic tank
- PC2.** select sanitary fixtures and carry out checks to ensure workability as per requirement
- PC3.** check toilet enclosure, bathing space, soak pits/septic tank are built as per drawings/sketches and necessary gradients
- PC4.** place and fix pre-cast concrete rings for soak pits as per applicability
- PC5.** locate and mark the position of pipe installations, connections, passage holes, and fixtures in structures, using measuring instruments such as rulers and levels
- PC6.** establish the sequence of pipe installations
- PC7.** assemble pipe sections, tubing and fittings, using couplings, clamps, screws, bolts, caulking tools, or cutting, threading and joining equipment

Carry out installation of sanitary fitting and fixtures for rural toilets

To be competent, the user/individual on the job must be able to:

- PC8.** cut openings in structures to accommodate pipes and pipe fittings, using hand tools
- PC9.** install pipe assemblies, fittings, and fixtures such as toilet pan using hand tools
- PC10.** maintaining necessary gradient for toilet floor
- PC11.** connect toilet with soak pit/septic tank and inspection chamber maintaining necessary gradient as per specification

Check gradient and perform test for leakage before commissioning of rural toilet

To be competent, the user/individual on the job must be able to:

- PC12.** test the joints and fixtures for proper functioning
- PC13.** check the overall system for proper functioning prior to commissioning by carrying out trial run
- PC14.** clear the work area after completion of work

Knowledge and Understanding (KU)



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The individual on the job needs to know and understand:

- KU1.** sketches for plumbing and sanitation system
- KU2.** units of measurement and basic principles of measurement
- KU3.** different types of materials (CI/GI/PVC pipes, etc.), basic sanitary fittings (taps, valves, clamps, elbows, etc.) and fixtures (toilet pans, traps, etc.)
- KU4.** techniques related to cutting, bending and joining of fittings and fixtures
- KU5.** personal protection including the use of related safety gears & equipment
- KU6.** various types of defects such as leakages, improper alignment, etc.
- KU7.** basic plumbing terminology and standard practices for plumbing work
- KU8.** standard size of relevant hand tools such as wrenches, plier, screwdriver, pipe cutter, pipe bender, threading tool, hacksaw, metal file, etc. and safety rules for handling and maintenance of tools
- KU9.** transferring levels using basic leveling devices
- KU10.** importance of appropriate disposal of wastes
- KU11.** Soak pits/ septic tank construction and working procedure

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and organize required resources
- GS8.** complete work as per agreed time schedule and quality



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory activities for installation of sanitary fittings and fixtures for rural toilets</i>	10	20	-	-
PC1. read and understand sketches of sanitary fittings and fixtures and their connection to soak pit/septic tank	-	-	-	-
PC2. select sanitary fixtures and carry out checks to ensure workability as per requirement	-	-	-	-
PC3. check toilet enclosure, bathing space, soak pits/septic tank are built as per drawings/sketches and necessary gradients	-	-	-	-
PC4. place and fix pre-cast concrete rings for soak pits as per applicability	-	-	-	-
PC5. locate and mark the position of pipe installations, connections, passage holes, and fixtures in structures, using measuring instruments such as rulers and levels	-	-	-	-
PC6. establish the sequence of pipe installations	-	-	-	-
PC7. assemble pipe sections, tubing and fittings, using couplings, clamps, screws, bolts, caulking tools, or cutting, threading and joining equipment	-	-	-	-
<i>Carry out installation of sanitary fitting and fixtures for rural toilets</i>	10	25	-	-
PC8. cut openings in structures to accommodate pipes and pipe fittings, using hand tools	-	-	-	-
PC9. install pipe assemblies, fittings, and fixtures such as toilet pan using hand tools	-	-	-	-
PC10. maintaining necessary gradient for toilet floor	-	-	-	-
PC11. connect toilet with soak pit/septic tank and inspection chamber maintaining necessary gradient as per specification	-	-	-	-
<i>Check gradient and perform test for leakage before commissioning of rural toilet</i>	10	25	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. test the joints and fixtures for proper functioning	-	-	-	-
PC13. check the overall system for proper functioning prior to commissioning by carrying out trial run	-	-	-	-
PC14. clear the work area after completion of work	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N3608
NOS Name	Install sanitary fitting and fixtures in rural toilets
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	3
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



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CON/N9001: Work according to personal health, safety and environment protocols at construction site

Description

This NOS covers the skill and knowledge required for an individual to work according to personal health, safety and environmental protocols at construction site

Scope

The scope covers the following :

- Follow safety norms as defined by organization
- Adopt healthy & safe work practices
- Implement good housekeeping and environment protection process and activities
- Follow infection control guidelines as per applicability

Elements and Performance Criteria

Follow safety norms as defined by the organization

To be competent, the user/individual on the job must be able to:

- PC1.** identify and report any hazards, risks or breaches in site safety to the appropriate authority
- PC2.** follow emergency and evacuation procedures in case of accidents, fires, natural calamities
- PC3.** follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable
- PC4.** follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site
- PC5.** select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline
- PC6.** identify near miss, unsafe condition and unsafe act

Adopt healthy & safe work practices

To be competent, the user/individual on the job must be able to:

- PC7.** use appropriate Personal Protective Equipment (PPE) as per work requirements for : Head Protection, Ear protection, Fall Protection ,Foot Protection, Face and Eye Protection, Hand and Body Protection , and Respiratory Protection (if required)
- PC8.** handle all required tools, tackles, materials and equipment safely
- PC9.** follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines
- PC10.** check and install all safety equipment as per standard guidelines
- PC11.** follow safety protocols and practices as laid down by site EHS department
- PC12.** obtain "height pass" clearance for working at heights

Implement good housekeeping practices

To be competent, the user/individual on the job must be able to:

- PC13.** collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature



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PC14. apply ergonomic principles wherever required

Follow infection control guidelines as per applicability

To be competent, the user/individual on the job must be able to:

PC15. follow recommended personal hygiene, workplace hygiene and sanitization practices

PC16. clean and disinfect all materials, tools and supplies before and after use

PC17. report immediately to concerned authorities regarding signs and symptoms of illness of self and others

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines
- KU2.** types of safety hazards at construction sites
- KU3.** basic ergonomic principles as per applicability
- KU4.** the procedure for responding to accidents and other emergencies at site
- KU5.** use of appropriate personal protective equipment based on various working conditions
- KU6.** importance of handling tools, equipment, and materials as per applicable norms
- KU7.** effect of construction material on health and environments as per applicability
- KU8.** various environmental protection methods as per applicability
- KU9.** storage of waste including non-combustible scrap material and debris, combustible scrap material and debris, general construction waste and trash (non-toxic, non-hazardous), any other hazardous wastes and any other flammable wastes at the appropriate location
- KU10.** how to keep the workplace neat and tidy so as to be safe
- KU11.** how to use hazardous material in a safe and appropriate manner as per applicability
- KU12.** types of fire
- KU13.** procedure of operating different types of fire extinguishers
- KU14.** safety relevant to tools, tackles, and equipment as per applicability
- KU15.** housekeeping activities relevant to task
- KU16.** ways of transmission of infection
- KU17.** ways to manage infectious risks at the workplace
- KU18.** different methods of cleaning, disinfection, sterilization, and sanitization
- KU19.** symptoms of infection like fever, cough, redness, swelling, and inflammation

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** write in at least one language, preferably in the local language of the site
- GS2.** fill safety formats for near miss, unsafe conditions and safety suggestions
- GS3.** read in one or more language, preferably in the local language of the site



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- GS4.** speak in one or more language, preferably in one of the local language of the site
- GS5.** listen to instructions/communication shared by site EHS and superiors regarding site safety, and conducting the toolbox talk
- GS6.** identify potential safety risks and report to the appropriate authority
- GS7.** assess and analyze areas which may affect health, safety and environment protocol on the site



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Follow safety norms as defined by the organization</i>	5	15	-	-
PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority	-	-	-	-
PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities	-	-	-	-
PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable	-	-	-	-
PC4. follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site	-	-	-	-
PC5. select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline	-	-	-	-
PC6. identify near miss, unsafe condition and unsafe act	-	-	-	-
<i>Adopt healthy & safe work practices</i>	15	35	-	-
PC7. use appropriate Personal Protective Equipment (PPE) as per work requirements for : Head Protection, Ear protection, Fall Protection ,Foot Protection, Face and Eye Protection, Hand and Body Protection , and Respiratory Protection (if required)	-	-	-	-
PC8. handle all required tools, tackles, materials and equipment safely	-	-	-	-
PC9. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines	-	-	-	-
PC10. check and install all safety equipment as per standard guidelines	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC11. follow safety protocols and practices as laid down by site EHS department	-	-	-	-
PC12. obtain "height pass" clearance for working at heights	-	-	-	-
<i>Implement good housekeeping practices</i>	5	15	-	-
PC13. collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature	-	-	-	-
PC14. apply ergonomic principles wherever required	-	-	-	-
<i>Follow infection control guidelines as per applicability</i>	5	5	-	-
PC15. follow recommended personal hygiene, workplace hygiene and sanitization practices	-	-	-	-
PC16. clean and disinfect all materials, tools and supplies before and after use	-	-	-	-
PC17. report immediately to concerned authorities regarding signs and symptoms of illness of self and others	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N9001
NOS Name	Work according to personal health, safety and environment protocols at construction site
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Generic Safety
NSQF Level	4
Credits	1
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



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DGT/VSQ/N0101: Employability Skills (30 Hours)

Description

This unit is about employability skills, Constitutional values, becoming a professional in the 21st Century, digital, financial, and legal literacy, diversity and Inclusion, English and communication skills, customer service, entrepreneurship, and apprenticeship, getting ready for jobs and career development.

Scope

The scope covers the following :

- Introduction to Employability Skills
- Constitutional values - Citizenship
- Becoming a Professional in the 21st Century
- Basic English Skills
- Communication Skills
- Diversity & Inclusion
- Financial and Legal Literacy
- Essential Digital Skills
- Entrepreneurship
- Customer Service
- Getting ready for Apprenticeship & Jobs

Elements and Performance Criteria

Introduction to Employability Skills

To be competent, the user/individual on the job must be able to:

PC1. understand the significance of employability skills in meeting the job requirements

Constitutional values - Citizenship

To be competent, the user/individual on the job must be able to:

PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices

Becoming a Professional in the 21st Century

To be competent, the user/individual on the job must be able to:

PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.

Basic English Skills

To be competent, the user/individual on the job must be able to:

PC4. speak with others using some basic English phrases or sentences

Communication Skills

To be competent, the user/individual on the job must be able to:

PC5. follow good manners while communicating with others

PC6. work with others in a team



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Diversity & Inclusion

To be competent, the user/individual on the job must be able to:

PC7. communicate and behave appropriately with all genders and PwD

PC8. report any issues related to sexual harassment

Financial and Legal Literacy

To be competent, the user/individual on the job must be able to:

PC9. use various financial products and services safely and securely

PC10. calculate income, expenses, savings etc.

PC11. approach the concerned authorities for any exploitation as per legal rights and laws

Essential Digital Skills

To be competent, the user/individual on the job must be able to:

PC12. operate digital devices and use its features and applications securely and safely

PC13. use internet and social media platforms securely and safely

Entrepreneurship

To be competent, the user/individual on the job must be able to:

PC14. identify and assess opportunities for potential business

PC15. identify sources for arranging money and associated financial and legal challenges

Customer Service

To be competent, the user/individual on the job must be able to:

PC16. identify different types of customers

PC17. identify customer needs and address them appropriately

PC18. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

To be competent, the user/individual on the job must be able to:

PC19. create a basic biodata

PC20. search for suitable jobs and apply

PC21. identify and register apprenticeship opportunities as per requirement

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills

KU2. various constitutional and personal values

KU3. different environmentally sustainable practices and their importance

KU4. Twenty first (21st) century skills and their importance

KU5. how to use basic spoken English language

KU6. Do and dont of effective communication

KU7. inclusivity and its importance

KU8. different types of disabilities and appropriate communication and behaviour towards PwD

KU9. different types of financial products and services



Qualification Pack

- KU10.** how to compute income and expenses
- KU11.** importance of maintaining safety and security in financial transactions
- KU12.** different legal rights and laws
- KU13.** how to operate digital devices and applications safely and securely
- KU14.** ways to identify business opportunities
- KU15.** types of customers and their needs
- KU16.** how to apply for a job and prepare for an interview
- KU17.** apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** communicate effectively using appropriate language
- GS2.** behave politely and appropriately with all
- GS3.** perform basic calculations
- GS4.** solve problems effectively
- GS5.** be careful and attentive at work
- GS6.** use time effectively
- GS7.** maintain hygiene and sanitisation to avoid infection



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
PC3. explain 21st Century Skills such as Self-Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC5. follow good manners while communicating with others	-	-	-	-
PC6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	3	4	-	-
PC9. use various financial products and services safely and securely	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. calculate income, expenses, savings etc.	-	-	-	-
PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
<i>Essential Digital Skills</i>	4	6	-	-
PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
PC13. use internet and social media platforms securely and safely	-	-	-	-
<i>Entrepreneurship</i>	3	5	-	-
PC14. identify and assess opportunities for potential business	-	-	-	-
PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
<i>Customer Service</i>	2	2	-	-
PC16. identify different types of customers	-	-	-	-
PC17. identify customer needs and address them appropriately	-	-	-	-
PC18. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
PC19. create a basic biodata	-	-	-	-
PC20. search for suitable jobs and apply	-	-	-	-
PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-
NOS Total	20	30	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0101
NOS Name	Employability Skills (30 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	2
Credits	1
Version	1.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3602: Build brick / block masonry structures for rural construction

Description

This unit describes the skills and knowledge required to build various masonry structures using brick / block and fix ready- to-install doors, windows and ventilators

Scope

The scope covers the following :

- Carry out preparatory activities for brick/block masonry work
- Check material used for brickwork / block work
- Lay brick / block for construction of load bearing / non-load bearing wall, columns, footings and soak pits / septic tanks
- Carry out pointing in brick masonry
- Fix ready-to-install doors, windows and ventilators.

Elements and Performance Criteria

Carry out preparatory activities for brick/block masonry work

To be competent, the user/individual on the job must be able to:

- PC1.** read and interpret the basic working drawings / sketches before the commencement of brick / block work
- PC2.** select appropriate Personal Protective Equipment (P.P.E.s) for the task
- PC3.** set out the layouts as per sketches/drawingsselect appropriate Personal Protective Equipment (P.P.E.s) for the task
- PC4.** identify and transfer required levels using appropriate tools
- PC5.** estimate the quantity of raw material required such as brick/block, cement and fine aggregate required

Check material used for brickwork/block work

To be competent, the user/individual on the job must be able to:

- PC6.** visual check for quality of bricks / blocks prior to use
- PC7.** ensure fine aggregate is sieved as per requirement
- PC8.** ensure proper stacking of bricks / blocks of required numbers as per requirement at the work place

Lay brick / block for construction of load bearing / non-load bearing wall, columns, footings and soak pits / septic tanks

To be competent, the user/individual on the job must be able to:

- PC9.** check and ensure the base surface is free of dust, dirt & debris prior to commencement of work
- PC10.** ensure removal of all loose concrete laitance and roughening of the surface prior to laying of brick/block
- PC11.** ensure soaking of brick/block and pre wetting of base surface prior to commencement of work



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- PC12.** select appropriate tools and equipment as per the tasks ensuring they are in working condition such as: different types of trowels (of the right blade size) masons hammer blocking chisel mashing hammer jointers
- PC13.** break bricks to required shape and size using appropriate tools following appropriate safety measures
- PC14.** lay and fix bricks / blocks for columns, walls, soak pits /septic tanks
- PC15.** check vertical and horizontal alignment using appropriate tools
- PC16.** maintain line and level of each course of brickwork using wooden / aluminum straight edge sections
- PC17.** set out 90 corners using builders square or 3-4-5 method and check right angle if required
- PC18.** ensure proper curing of constructed masonry structure

Carry out pointing in brick masonry

To be competent, the user/individual on the job must be able to:

- PC19.** perform raking of joints as specified prior to drying of bonding mortar
- PC20.** ensure that joints are cleaned and surface is wet prior to pointing
- PC21.** ensure lime/cement mortar for pointing is prepared as per specification
- PC22.** fill joints with appropriate mortar to obtain specified type of pointing
- PC23.** carry out flush/recessed pointing using appropriate tools and technique
- PC24.** ensure proper curing of pointing

Fix ready-toinstall doors, windows and ventilators

To be competent, the user/individual on the job must be able to:

- PC25.** mark, set out location of frames of doors, windows and ventilators
- PC26.** check and carry out proper alignment of the frame and hold in position with temporary support
- PC27.** check the holdfast position and grout it between bricks / blocks of wall
- PC28.** fill the gap between wall and door frame with non-shrink material/grout
- PC29.** fix wooden/metal panels for doors, windows and ventilators

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** type and size of raw materials ; their handling and storage
- KU3.** standard size of masonry tools and equipment, their use, care and maintenance such as measuring tape, trowels, floats, brushes, screed boards, straightedge, mortar boards and stands, shovels, hawks, joint rules, masons square, buckets, spade, volume box
- KU4.** safety rules and regulations for handling and storing required masonry tools, equipment and materials
- KU5.** personal protection including the use of related safety gears & equipment
- KU6.** sketches for building brick and block work structures
- KU7.** standard practices for masonry work



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- KU8.** how to use basic leveling tools in the masonry trade such as Spirit level, water level, plumb bob, line thread
- KU9.** how to determine vertical and horizontal alignment using appropriate tools
- KU10.** cement grade and mix proportion and its importance
- KU11.** basic knowledge of water cement ratio
- KU12.** knowledge of stretcher, header English bonds ,Flemish bond and rat trap bond
- KU13.** various techniques / procedures for cutting/chiseling/dressing different types of bricks to closure
- KU14.** laying and fixing of brick, block for wall, foundation, column, soak pit/ septic tank
- KU15.** method of curing of masonry structures
- KU16.** different mortar mix used for pointing
- KU17.** flush and recessed pointing in brick masonry and its application
- KU18.** various pointing and raking tools and method of pointing
- KU19.** standard size of door / window, type of materials and fittings used
- KU20.** how to align the frames and checking the holdfast position
- KU21.** how to anchor frames to walls and fill gap between wall and frames

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and organize required resources
- GS8.** complete work as per agreed time schedule and quality
- GS9.** optimize resources efficiently
- GS10.** minimize wastage in the workplace



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory activities for brick/block masonry work</i>	5	10	-	-
PC1. read and interpret the basic working drawings / sketches before the commencement of brick / block work	-	-	-	-
PC2. select appropriate Personal Protective Equipment (P.P.E.s) for the task	-	-	-	-
PC3. set out the layouts as per sketches/drawingsselect appropriate Personal Protective Equipment (P.P.E.s) for the task	-	-	-	-
PC4. identify and transfer required levels using appropriate tools	-	-	-	-
PC5. estimate the quantity of raw material required such as brick/block, cement and fine aggregate required	-	-	-	-
<i>Check material used for brickwork/block work</i>	5	10	-	-
PC6. visual check for quality of bricks / blocks prior to use	-	-	-	-
PC7. ensure fine aggregate is sieved as per requirement	-	-	-	-
PC8. ensure proper stacking of bricks / blocks of required numbers as per requirement at the work place	-	-	-	-
<i>Lay brick / block for construction of load bearing / non-load bearing wall, columns, footings and soak pits / septic tanks</i>	10	15	-	-
PC9. check and ensure the base surface is free of dust, dirt & debris prior to commencement of work	-	-	-	-
PC10. ensure removal of all loose concrete laitance and roughening of the surface prior to laying of brick/block	-	-	-	-
PC11. ensure soaking of brick/block and pre wetting of base surface prior to commencement of work	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. select appropriate tools and equipment as per the tasks ensuring they are in working condition such as: different types of trowels (of the right blade size) masons hammer blocking chisel mashing hammer jointers	-	-	-	-
PC13. break bricks to required shape and size using appropriate tools following appropriate safety measures	-	-	-	-
PC14. lay and fix bricks / blocks for columns, walls, soak pits /septic tanks	-	-	-	-
PC15. check vertical and horizontal alignment using appropriate tools	-	-	-	-
PC16. maintain line and level of each course of brickwork using wooden / aluminum straight edge sections	-	-	-	-
PC17. set out 90 corners using builders square or 3-4-5 method and check right angle if required	-	-	-	-
PC18. ensure proper curing of constructed masonry structure	-	-	-	-
<i>Carry out pointing in brick masonry</i>	5	20	-	-
PC19. perform raking of joints as specified prior to drying of bonding mortar	-	-	-	-
PC20. ensure that joints are cleaned and surface is wet prior to pointing	-	-	-	-
PC21. ensure lime/cement mortar for pointing is prepared as per specification	-	-	-	-
PC22. fill joints with appropriate mortar to obtain specified type of pointing	-	-	-	-
PC23. carry out flush/recessed pointing using appropriate tools and technique	-	-	-	-
PC24. ensure proper curing of pointing	-	-	-	-
<i>Fix ready-toinstall doors, windows and ventilators</i>	5	15	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. mark, set out location of frames of doors, windows and ventilators	-	-	-	-
PC26. check and carry out proper alignment of the frame and hold in position with temporary support	-	-	-	-
PC27. check the holdfast position and grout it between bricks / blocks of wall	-	-	-	-
PC28. fill the gap between wall and door frame with non-shrink material/grout	-	-	-	-
PC29. fix wooden/metal panels for doors, windows and ventilators	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3602
NOS Name	Build brick / block masonry structures for rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQF Clearance Date	08/05/2025



Qualification Pack

CON/N3604: Carry out IPS flooring in rural construction

Description

This unit describes the skills and knowledge required to work on IPS flooring

Scope

The scope covers the following :

- Carry out preparatory work prior to IPS flooring
- Carry out IPS flooring

Elements and Performance Criteria

Carry out preparatory work prior to IPS flooring

To be competent, the user/individual on the job must be able to:

- PC1.** inspect the work area prior to concreting, ensure leveling in case of any undulations observed on the surface prior to concreting
- PC2.** select appropriate Personal Protective Equipment (P.P.E.s) for the task
- PC3.** ensure surface is prepared appropriately and address any deviation in slope and alignment in PCC
- PC4.** check the grade of cement prior to use in case of manual mixing
- PC5.** ensure fine aggregate is sieved as per grade requirement
- PC6.** mark reference level on the wall & transfer this marking to all floor locations using appropriate tools at regular intervals for ensuring required slope for proper drainage
- PC7.** check that concrete is mixed in appropriate proportion
- PC8.** visually assess the concrete mix for usability and workability

Carry out IPS flooring

To be competent, the user/individual on the job must be able to:

- PC9.** fix the baton strip in cement mortar with their tops at appropriate level and according to slope
- PC10.** ensure panels are made as per specified size
- PC11.** pour concrete as per requirement up to approved floor level
- PC12.** level poured concrete to the specified levels maintaining required slope
- PC13.** remove excess cement slurry and any marks on the surface
- PC14.** level the concrete surface with a straight edge and to the required finish with a wooden float / trowel
- PC15.** cut groves on concrete at specified intervals for construction joints
- PC16.** spread cement punning over the IPS concrete for smooth finish surface and allow it to soak into the concrete, as per requirement
- PC17.** ensure curing of the finished floor surface for the specified time

Knowledge and Understanding (KU)



Qualification Pack

The individual on the job needs to know and understand:

- KU1.** storage and handling of the specific materials for this job work
- KU2.** standard practices for IPS flooring works
- KU3.** safety rules and regulations for handling & storing required masonry tools & materials
- KU4.** personal protection including the use of related safety gears & equipment
- KU5.** process to prepare the sub-base by watering and ramming
- KU6.** provide for adequate slope in PCC (Plain Cement Concrete) in a base course
- KU7.** how to make reference levels and transfer the markings to all locations where flooring is to be done
- KU8.** various type and grade of cement used, effect of water /cement ratio and type of aggregates
- KU9.** manual mixing of concrete and nominal mix proportions
- KU10.** sequence of concrete pouring and placing
- KU11.** how to avoid shrinkage cracks in concrete
- KU12.** cutting tools for providing joints
- KU13.** final troweling process before the concrete is hardened
- KU14.** dos and donts in the execution
- KU15.** basic work study (Practical aspects on executing works)
- KU16.** curing of the finished work

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** basic numeracy skills
- GS2.** communicate orally and effectively with co-workers & subordinates
- GS3.** decide on whether the workplace is safe for working
- GS4.** plan work and Organize required resources
- GS5.** complete work as per agreed time schedule and quality
- GS6.** optimize resources efficiently
- GS7.** minimize wastage in the workplace
- GS8.** read sketches for the task
- GS9.** read sign boards, and safety tags



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory work prior to IPS flooring</i>	15	35	-	-
PC1. inspect the work area prior to concreting, ensure leveling in case of any undulations observed on the surface prior to concreting	-	-	-	-
PC2. select appropriate Personal Protective Equipment (P.P.E.s) for the task	-	-	-	-
PC3. ensure surface is prepared appropriately and address any deviation in slope and alignment in PCC	-	-	-	-
PC4. check the grade of cement prior to use in case of manual mixing	-	-	-	-
PC5. ensure fine aggregate is sieved as per grade requirement	-	-	-	-
PC6. mark reference level on the wall & transfer this marking to all floor locations using appropriate tools at regular intervals for ensuring required slope for proper drainage	-	-	-	-
PC7. check that concrete is mixed in appropriate proportion	-	-	-	-
PC8. visually assess the concrete mix for usability and workability	-	-	-	-
<i>Carry out IPS flooring</i>	15	35	-	-
PC9. fix the baton strip in cement mortar with their tops at appropriate level and according to slope	-	-	-	-
PC10. ensure panels are made as per specified size	-	-	-	-
PC11. pour concrete as per requirement up to approved floor level	-	-	-	-
PC12. level poured concrete to the specified levels maintaining required slope	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. remove excess cement slurry and any marks on the surface	-	-	-	-
PC14. level the concrete surface with a straight edge and to the required finish with a wooden float / trowel	-	-	-	-
PC15. cut grooves on concrete at specified intervals for construction joints	-	-	-	-
PC16. spread cement punning over the IPS concrete for smooth finish surface and allow it to soak into the concrete, as per requirement	-	-	-	-
PC17. ensure curing of the finished floor surface for the specified time	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3604
NOS Name	Carry out IPS flooring in rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3605: Carry out reinforcement steel works for R.C.C structures in rural construction

Description

This unit describes the skills and knowledge required to carry out reinforcement steel works for footing, column, beam and slab in rural construction

Scope

The scope covers the following :

- Read and understand sketches relevant to R.C.C footing, column, beam and slab
- Use hand tools for cutting and bending of reinforcement steel bars
- Fabricate, place and fix reinforcement steel for R.C.C footing, column, beam and slab

Elements and Performance Criteria

Read sketches relevant to R.C.C footing, column, beam and slab

To be competent, the user/individual on the job must be able to:

- PC1.** read basic detail from the sketches / drawings
- PC2.** calculate cutting length of rebar from the sketches/drawing
- PC3.** calculate number of chairs, spacer bars requirement to be used
- PC4.** plan for cutting of re-bars as per requirement

Use hand/power tools for cutting and bending of reinforcement steel bars

To be competent, the user/individual on the job must be able to:

- PC5.** select appropriate personal protective equipment (P.P.E.s) for the task
- PC6.** select hand tools/power tools for cutting re-bars as per requirement
- PC7.** mark cutting length on rebar and cut rebar using hand/power tools
- PC8.** select hand tools for bending rebars according to diameter of rebar to be bend
- PC9.** mark length on rebar and bend re-bar as per the shape and dimensions given in the sketches including hooks
- PC10.** maintain correct body posture while cutting and bending rebars manually or mechanically
- PC11.** check for length, shape of rebars to ensure they are within the tolerance limit
- PC12.** stack re-bars after cutting and bending as per standards practices

Fabricate place and fix reinforcement steel for R.C.C footing, column, beam and slab

To be competent, the user/individual on the job must be able to:

- PC13.** select appropriate personal protective equipment (P.P.E.s) for the task
- PC14.** select re-bars for placement as per the drawing/sketches
- PC15.** follow correct method for insertion/ fixing of rebars for footing, column , beam and slab, place and fix on its position
- PC16.** maintain uniform spacing between the bars, stirrups, link rod as per the drawing/sketches
- PC17.** stagger the lap to avoid more than 50% of splicing



Qualification Pack

- PC18.** tie reinforcement with binding wires as per drawing with specified spacing
- PC19.** ensure that location and position of reinforcement and fixing ties to reinforcement are checked for accuracy
- PC20.** place cover blocks and spacers are placed to maintain appropriate covers & spacing
- PC21.** place and fix chairs at specified spacing to maintain correct thickness
- PC22.** check quality of reinforcement work with reference to spacing, placement, straightness of bar, rigidity of ties etc

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices for reinforcement work
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** maintenance of tools and equipment
- KU5.** use of measurement and marking tool
- KU6.** simple arithmetic calculation
- KU7.** unit weight of steel
- KU8.** different types of cover block and their uses
- KU9.** different types of steel rods, length and diameter
- KU10.** different types of binding wire, thickness and uses
- KU11.** prevention of reinforcement from rusting
- KU12.** use of chairs, spacer bar, hanger bars
- KU13.** how to read basic drawing/sketches for bar bending and fixing works
- KU14.** sequence for tying of reinforcement for in-situ, pre fabrication works
- KU15.** insertion and fixing process for slab(one way & two way slab), beam, column, footing, wall
- KU16.** lapping length and importance of lapping for different diameter of re-bars
- KU17.** importance of clear cover while carrying out reinforcement works
- KU18.** standard tolerance limits in reinforcement works

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and Organize required resources



Qualification Pack

- GS8.** complete work as per agreed time schedule and quality
- GS9.** minimize wastages
- GS10.** optimize resources



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Read sketches relevant to R.C.Footing, column, beam and slab</i>	10	20	-	-
PC1. read basic detail from the sketches / drawings	-	-	-	-
PC2. calculate cutting length of rebar from the sketches/drawing	-	-	-	-
PC3. calculate number of chairs, spacer bars requirement to be used	-	-	-	-
PC4. plan for cutting of re-bars as per requirement	-	-	-	-
<i>Use hand/power tools for cutting and bending of reinforcement steel bars</i>	10	25	-	-
PC5. select appropriate personal protective equipment (P.P.E.s) for the task	-	-	-	-
PC6. select hand tools/power tools for cutting re-bars as per requirement	-	-	-	-
PC7. mark cutting length on rebar and cut rebar using hand/power tools	-	-	-	-
PC8. select hand tools for bending rebars according to diameter of rebar to be bend	-	-	-	-
PC9. mark length on rebar and bend re-bar as per the shape and dimensions given in the sketches including hooks	-	-	-	-
PC10. maintain correct body posture while cutting and bending rebars manually or mechanically	-	-	-	-
PC11. check for length, shape of rebars to ensure they are within the tolerance limit	-	-	-	-
PC12. stack re-bars after cutting and bending as per standards practices	-	-	-	-
<i>Fabricate place and fix reinforcement steel for R.C.Footing, column, beam and slab</i>	10	25	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. select appropriate personal protective equipment (P.P.E.s) for the task	-	-	-	-
PC14. select re-bars for placement as per the drawing/sketches	-	-	-	-
PC15. follow correct method for insertion/ fixing of rebars for footing, column , beam and slab, place and fix on its position	-	-	-	-
PC16. maintain uniform spacing between the bars, stirrups, link rod as per the drawing/sketches	-	-	-	-
PC17. stagger the lap to avoid more than 50% of splicing	-	-	-	-
PC18. tie reinforcement with binding wires as per drawing with specified spacing	-	-	-	-
PC19. ensure that location and position of reinforcement and fixing ties to reinforcement are checked for accuracy	-	-	-	-
PC20. place cover blocks and spacers are placed to maintain appropriate covers & spacing	-	-	-	-
PC21. place and fix chairs at specified spacing to maintain correct thickness	-	-	-	-
PC22. check quality of reinforcement work with reference to spacing, placement, straightness of bar, rigidity of ties etc	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3605
NOS Name	Carry out reinforcement steel works for R.C.C structures in rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	2
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3606: Carry out shuttering works in rural construction

Description

This unit describes the skills and knowledge required to carry out shuttering works for footing, column, beam and slab in rural construction

Scope

The scope covers the following :

- Use hand tools for making wooden shutter board
- Carry out shuttering works in rural construction for R.C.C footing, column, beam and slab
- Carry out scaffolding works using bamboo/ballies or pipes and coupler for supporting rural construction activities

Elements and Performance Criteria

Use hand tool for making wooden shutter board

To be competent, the user/individual on the job must be able to:

- PC1.** select appropriate personal protective equipment (P.P.E.s) for the task
- PC2.** check that all fixtures, consumables and materials are available for shutter making
- PC3.** carry out visual check to ensure materials for making shutters such as timber, plywood etc. are of good quality
- PC4.** use measurement and marking tools for marking
- PC5.** select and use regular hand tools such as hand saw, chisel, jack hammer, nailing hammer, hand drill and other tools efficiently
- PC6.** make wooden shutter panels using different types of joints such as dovetail, tenon & mortise, lap joints as per requirement

Carry out shuttering works in rural construction for R.C.C footing, column, beam and slab

To be competent, the user/individual on the job must be able to:

- PC7.** clean the shutter panels before using for shuttering work
- PC8.** apply release agents to sheathing material
- PC9.** check and ensure all tools, material, components are available as per requirements
- PC10.** check that fixing and fasteners are available as per requirement
- PC11.** position and provide necessary support for footing, column, beam and slab shuttering
- PC12.** plug all openings and gaps using appropriate materials
- PC13.** ensure water tightness of form by providing form sheet or necessary packing material
- PC14.** position and fix props properly and check for plumb, position and spacing
- PC15.** ensure tightness of tie rods, supports, and bracings
- PC16.** check erected formwork for line, level, alignment and plumb within tolerance limit
- PC17.** check the dimensional accuracy and right angle and take necessary corrective measures if required
- PC18.** ensure the RCC structure has gained sufficient strength before dismantling



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- PC19.** dismantle formwork shutters sequentially as per standard practices
- PC20.** ensure that all the small components are stacked properly for further use
- PC21.** repair formwork material if required and ensure cleaning and proper stacking after dismantling

Carry out scaffolding works using bamboo/ballies or pipes and coupler for supporting rural construction activities

To be competent, the user/individual on the job must be able to:

- PC22.** level area where scaffold need to be erected and check for ground compactness if required
- PC23.** select appropriate material for scaffolding as per requirement
- PC24.** erect scaffold sequentially as per requirement using locally available material (bamboo/ballies or pipes and coupler)
- PC25.** check for stability, rigidity and necessary support to scaffold
- PC26.** fix walk boards , guard rails and other components on working platform
- PC27.** dismantle scaffold sequentially and stack material properly after removing for further use

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for shuttering works
- KU2.** reading of basic sketches / schematic working drawing that may be required for erecting and dismantling shuttering
- KU3.** basic principles of measurement, geometry and arithmetic calculation
- KU4.** linear conversion of units
- KU5.** different types of measurement and marking tools
- KU6.** selection, use of hand / power tools and their basic maintenance
- KU7.** standard size of all carpentry tools, materials and components, their selection and use
- KU8.** different type of shuttering material such as timber, plywood, wooden batten, GI sheets and other material
- KU9.** visual quality checks for shuttering material
- KU10.** knowledge and use of water level tube
- KU11.** different types of joints such as dovetail, tenon & mortise, lap joints
- KU12.** standard procedures for shuttering of footing, slab, beam and slab
- KU13.** how to provide support for shuttering of footing, slab, beam and slab
- KU14.** how to check for line, level and alignment of erected shutter boards
- KU15.** time for removing of shutters for footing, column, beam and slab
- KU16.** how to erect and dismantle staging (bamboo/ballies, pipes and coupler)

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task



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- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** communicate orally and effectively with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and organize required resource
- GS8.** complete work as per agreed time schedule and quality
- GS9.** optimize resources
- GS10.** minimize wastages



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Use hand tool for making wooden shutter board</i>	10	20	-	-
PC1. select appropriate personal protective equipment (P.P.E.s) for the task	-	-	-	-
PC2. check that all fixtures, consumables and materials are available for shutter making	-	-	-	-
PC3. carry out visual check to ensure materials for making shutters such as timber, plywood etc. are of good quality	-	-	-	-
PC4. use measurement and marking tools for marking	-	-	-	-
PC5. select and use regular hand tools such as hand saw, chisel, jack hammer, nailing hammer, hand drill and other tools efficiently	-	-	-	-
PC6. make wooden shutter panels using different types of joints such as dovetail, tenon & mortise, lap joints as per requirement	-	-	-	-
<i>Carry out shuttering works in rural construction for R.C.C footing, column, beam and slab</i>	10	25	-	-
PC7. clean the shutter panels before using for shuttering work	-	-	-	-
PC8. apply release agents to sheathing material	-	-	-	-
PC9. check and ensure all tools, material, components are available as per requirements	-	-	-	-
PC10. check that fixing and fasteners are available as per requirement	-	-	-	-
PC11. position and provide necessary support for footing, column, beam and slab shuttering	-	-	-	-
PC12. plug all openings and gaps using appropriate materials	-	-	-	-
PC13. ensure water tightness of form by providing form sheet or necessary packing material	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. position and fix props properly and check for plumb, position and spacing	-	-	-	-
PC15. ensure tightness of tie rods, supports, and bracings	-	-	-	-
PC16. check erected formwork for line, level, alignment and plumb within tolerance limit	-	-	-	-
PC17. check the dimensional accuracy and right angle and take necessary corrective measures if required	-	-	-	-
PC18. ensure the RCC structure has gained sufficient strength before dismantling	-	-	-	-
PC19. dismantle formwork shutters sequentially as per standard practices	-	-	-	-
PC20. ensure that all the small components are stacked properly for further use	-	-	-	-
PC21. repair formwork material if required and ensure cleaning and proper stacking after dismantling	-	-	-	-
<i>Carry out scaffolding works using bamboo/ballies or pipes and coupler for supporting rural construction activities</i>	10	25	-	-
PC22. level area where scaffold need to be erected and check for ground compactness if required	-	-	-	-
PC23. select appropriate material for scaffolding as per requirement	-	-	-	-
PC24. erect scaffold sequentially as per requirement using locally available material (bamboo/ballies or pipes and coupler)	-	-	-	-
PC25. check for stability, rigidity and necessary support to scaffold	-	-	-	-
PC26. fix walk boards , guard rails and other components on working platform	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. dismantle scaffold sequentially and stack material properly after removing for further use	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3606
NOS Name	Carry out shuttering works in rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3607: Carry out manual concreting in rural construction

Description

This unit describes the skills and knowledge to carry out manual concreting in rural construction

Scope

The scope covers the following :

- Carry out preparatory work before pouring of manual concrete
- Carry out pouring and compaction of concrete
- Finish and cure concrete

Elements and Performance Criteria

Carry out preparatory work before pouring of manual concrete

To be competent, the user/individual on the job must be able to:

- PC1.** ensure surface is prepared appropriately and address any deviation in slope / alignment or undulations in surface prior to concreting
- PC2.** ensure rectification of any gaps in formwork to avoid leakage
- PC3.** check for misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided
- PC4.** use potable water for concrete preparation
- PC5.** visually check the grade of cement and manufactures date prior to use
- PC6.** visually check quality of aggregate and ensure it is free from organic impurities
- PC7.** check and ensure concrete is mixed as per specification
- PC8.** visually assess the concrete mix for usability and workability

Carry out pouring and compaction of concrete

To be competent, the user/individual on the job must be able to:

- PC9.** ensure standard pouring height for concrete is maintained throughout pouring
- PC10.** ensure pouring of concrete takes place in specified layers
- PC11.** pour concrete to maintain specified levels & cover for steel reinforcement
- PC12.** use tamping rod/hand concrete vibrator for compaction of concrete

Finish and cure concrete

To be competent, the user/individual on the job must be able to:

- PC13.** spread the concrete as per requirements using appropriate tools and technique
- PC14.** push excess concrete towards the formwork for easy removal
- PC15.** level the edges and corners as per requirement using appropriate tools for semi-finished concrete
- PC16.** smoothen the surface using appropriate tools, to ensure a consistent and durable final finish
- PC17.** apply a final finish on the surface as per requirements
- PC18.** ensure cleaning and removal of spilled concrete is carried out after work



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PC19. ensure proper curing of concrete by marking and monitoring of the curing time

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard practices for concreting work
- KU2.** personal protection including the use of related safety gears & equipment
- KU3.** safety rules and regulations for handling and storing required concreting tools, equipment and materials
- KU4.** standard sizes of concreting tools such as measuring tape/rule, vibrator, shovels, rakes, screeding board / tools and tamping tools (hand, rolling), different types of floats; their use, upkeep and maintenance
- KU5.** precaution while working in wet concrete area
- KU6.** basic principles of measurement
- KU7.** basic properties of concrete including weight, slump & mix proportions
- KU8.** various type and grade of cement used, effect of water /cement ratio and type of aggreg
- KU9.** sequence of concrete pouring and placing
- KU10.** manual mixing of concrete and nominal mix proportions
- KU11.** cover to reinforcement with respect to size of reinforcement
- KU12.** how to avoid shrinkage cracks in concrete
- KU13.** construction and expansion joints
- KU14.** appropriate technique for pouring of concrete in the form of layers as per the specification
- KU15.** technique to avoid air pockets or voids while concreting
- KU16.** appropriate technique for screeding of concrete
- KU17.** appropriate technique for floating of concrete surface
- KU18.** appropriate technique and extent to which construction joints must be provided
- KU19.** importance of finishing concrete after initial setting of concrete/semi-finished stage
- KU20.** importance and use of releasing agents on the formwork
- KU21.** curing process as per the specification / based on type of concreting works
- KU22.** how to protect concrete surface from direct contact with sun and prevent damage
- KU23.** different type of defects in concrete

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** basic numeracy skills
- GS2.** read sketches for the task
- GS3.** read sign boards, and safety tags
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** communicate orally and effectively with co-workers & subordinates



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- GS6.** decide whether the workplace is safe for working
- GS7.** plan work and organize required resources
- GS8.** complete work as per agreed time schedule and quality
- GS9.** optimize resources efficiently
- GS10.** minimize wastage in the workplace



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory work before pouring of manual concrete</i>	10	20	-	-
PC1. ensure surface is prepared appropriately and address any deviation in slope / alignment or undulations in surface prior to concreting	-	-	-	-
PC2. ensure rectification of any gaps in formwork to avoid leakage	-	-	-	-
PC3. check for misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided	-	-	-	-
PC4. use potable water for concrete preparation	-	-	-	-
PC5. visually check the grade of cement and manufactures date prior to use	-	-	-	-
PC6. visually check quality of aggregate and ensure it is free from organic impurities	-	-	-	-
PC7. check and ensure concrete is mixed as per specification	-	-	-	-
PC8. visually assess the concrete mix for usability and workability	-	-	-	-
<i>Carry out pouring and compaction of concrete</i>	10	25	-	-
PC9. ensure standard pouring height for concrete is maintained throughout pouring	-	-	-	-
PC10. ensure pouring of concrete takes place in specified layers	-	-	-	-
PC11. pour concrete to maintain specified levels & cover for steel reinforcement	-	-	-	-
PC12. use tamping rod/hand concrete vibrator for compaction of concrete	-	-	-	-
<i>Finish and cure concrete</i>	10	25	-	-
PC13. spread the concrete as per requirements using appropriate tools and technique	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. push excess concrete towards the formwork for easy removal	-	-	-	-
PC15. level the edges and corners as per requirement using appropriate tools for semi-finished concrete	-	-	-	-
PC16. smoothen the surface using appropriate tools, to ensure a consistent and durable final finish	-	-	-	-
PC17. apply a final finish on the surface as per requirements	-	-	-	-
PC18. ensure cleaning and removal of spilled concrete is carried out after work	-	-	-	-
PC19. ensure proper curing of concrete by marking and monitoring of the curing time	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3607
NOS Name	Carry out manual concreting in rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3621: Select, harvest and prepare the bamboo for the construction works

Description

This unit describes the skills and knowledge required for selection, harvesting and treatment of bamboo used for construction works.

Scope

The scope covers the following :

- Carry out selection and harvesting of bamboo
- Perform treatment of bamboo

Elements and Performance Criteria

Carry out selection and harvesting of bamboo

To be competent, the user/individual on the job must be able to:

- PC1.** identify different types and species of bamboo
- PC2.** select the appropriate bamboo for the construction work based on physical description, length, diameters, gaps between rings (nodes), and wall thickness (not less than 12mm) of the bamboo.
- PC3.** ensure wall thickness of bamboo selected is not less than 12mm
- PC4.** identify recommended culm and clump for harvesting bamboo using 'horse foot technique
- PC5.** use jigs and tools for harvesting bamboo without damaging upcoming tender shoots

Perform treatment of bamboo

To be competent, the user/individual on the job must be able to:

- PC6.** perform preparatory activity prior to the treatment of bamboo such as cleaning of culms
- PC7.** set up the "Bamboo treatment plant" for in-situ treatment of bamboo as per applicability
- PC8.** carry out different methods for the treatment of bamboo such as soaking methods, injecting method, boiling method and/ or pressure treatment
- PC9.** prepare chemical-water solution in specified ratio for the treatment of the bamboo
- PC10.** check and prepare the pressure gauge for pressure treatment of the bamboo
- PC11.** attach the bamboo to the machine/ pump of the treatment plant as per the specifications
- PC12.** perform the treatment of the bamboo as per recommended pressure and procedures
- PC13.** carry out grading and storing of treated culm/ bamboo as per the specification

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials



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- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** various species of bamboo used for construction works
- KU5.** maturity age for bamboo for use in construction works
- KU6.** pros and cons of using bamboo as construction material
- KU7.** checks of straightness of bamboo
- KU8.** appropriate season for harvesting of bamboo
- KU9.** harvesting bamboo using horse foot technique, utilizing jigs & tools for harvesting bamboo
- KU10.** types of bamboo treatment adopted
- KU11.** knowledge on locally available bamboo based wall construction components
- KU12.** various methods of bamboo treatment CCB, boric and borax , alum, salt treatment and other traditional method i.e. cow urine, soaking, pressure treatment & sourcing of treatment media(chemicals)
- KU13.** relative merits and demerits of the various treatment processes
- KU14.** relative merits and demerits of the various treatment processes
- KU15.** brouchery treatment plant for in-situ treatment of bamboo members
- KU16.** heavy treatment plant-pressure treatment for bamboo members
- KU17.** environment aspect and bamboo treatment, including safe disposal of the waste chemicals
- KU18.** sorting, storing and stacking of bamboo as per use
- KU19.** planning and organizing of work, tool and accessories for use in bamboo construction

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and organize required resources
- GS8.** manage resources
- GS9.** complete work as per agreed time schedule and quality



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out selection and harvesting of bamboo</i>	15	35	-	-
PC1. identify different types and species of bamboo	-	-	-	-
PC2. select the appropriate bamboo for the construction work based on physical description, length, diameters, gaps between rings (nodes), and wall thickness (not less than 12mm) of the bamboo.	-	-	-	-
PC3. ensure wall thickness of bamboo selected is not less than 12mm	-	-	-	-
PC4. identify recommended culm and clump for harvesting bamboo using 'horse foot technique	-	-	-	-
PC5. use jigs and tools for harvesting bamboo without damaging upcoming tender shoots	-	-	-	-
<i>Perform treatment of bamboo</i>	15	35	-	-
PC6. perform preparatory activity prior to the treatment of bamboo such as cleaning of culms	-	-	-	-
PC7. set up the "Bamboo treatment plant" for in-situ treatment of bamboo as per applicability	-	-	-	-
PC8. carry out different methods for the treatment of bamboo such as soaking methods, injecting method, boiling method and/ or pressure treatment	-	-	-	-
PC9. prepare chemical-water solution in specified ratio for the treatment of the bamboo	-	-	-	-
PC10. check and prepare the pressure gauge for pressure treatment of the bamboo	-	-	-	-
PC11. attach the bamboo to the machine/ pump of the treatment plant as per the specifications	-	-	-	-
PC12. perform the treatment of the bamboo as per recommended pressure and procedures	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. carry out grading and storing of treated culm/ bamboo as per the specification	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3621
NOS Name	Select, harvest and prepare the bamboo for the construction works
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3622: Select, stack and perform visual quality checks on bamboo used for construction purpose

Description

This unit describes the skills and knowledge required for selection, stacking and performing visual quality checks of bamboo for use in construction.

Scope

The scope covers the following :

- Carry out selection, stacking and performing visual quality checks of treated bamboo for use in construction

Elements and Performance Criteria

Carry out selection, stacking and performing visual quality checks of treated bamboo for use in construction

To be competent, the user/individual on the job must be able to:

- PC1.** perform visual checks and confirm that bamboo is of recommended species and of required age
- PC2.** select bamboo for use in different parts of a structure
- PC3.** check and confirm straightness of bamboo members
- PC4.** check for maximum to minimum diameter of the members, wall thickness of bamboo, internode distance, internode distance to diameter ratio
- PC5.** perform visual checks and confirm that the treatment process is acceptable as per the instruction manual
- PC6.** ensure sorting, stacking and storage of treated bamboos members as per their use
- PC7.** carry out visual quality checks for shrinkage post component production
- PC8.** carry out visual quality checks on available types of bamboo/bamboo based mats to ensure they are in accordance with standards quality requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** method of sorting, storing and stacking of bamboo as per use
- KU5.** type of bamboo species used in construction works
- KU6.** maturity age for bamboo for use in construction works
- KU7.** pros and cons of using bamboo as construction material



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- KU8.** instruction manual for bamboo treatment
- KU9.** knowledge on locally available bamboo based wall construction components
- KU10.** planning and organizing of work, tool and accessories for use in bamboo construction
- KU11.** knowledge about the different steps to construction of a bamboo joint
- KU12.** check for straightness in the construction components

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and organize required resources
- GS8.** manage resources
- GS9.** complete work as per agreed time schedule and quality



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out selection, stacking and performing visual quality checks of treated bamboo for use in construction</i>	30	70	-	-
PC1. perform visual checks and confirm that bamboo is of recommended species and of required age	-	-	-	-
PC2. select bamboo for use in different parts of a structure	-	-	-	-
PC3. check and confirm straightness of bamboo members	-	-	-	-
PC4. check for maximum to minimum diameter of the members, wall thickness of bamboo, internode distance, internode distance to diameter ratio	-	-	-	-
PC5. perform visual checks f and confirm that the treatment process is acceptable as per the instruction manual	-	-	-	-
PC6. ensure sorting, stacking and storage of treated bamboos members as per their use	-	-	-	-
PC7. carry out visual quality checks for shrinkage post component production	-	-	-	-
PC8. carry out visual quality checks on available types of bamboo/bamboo based mats to ensure they are in accordance with standards quality requirements	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3622
NOS Name	Select, stack and perform visual quality checks on bamboo used for construction purpose
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3623: Cut, shape, drill and join treated bamboo for making of mat, posts, joints, ties, beams and bracing used for building construction

Description

This unit describes the skills and knowledge required for cutting, shaping drilling and jointing of treated bamboo members for making of mat, posts, joints, ties, beams and bracing used for building construction

Scope

The scope covers the following :

- Carry out cutting, shaping drilling and jointing of treated bamboo members for making of mat, posts, joints, ties, beams and bracing used for building construction

Elements and Performance Criteria

Carry out cutting, shaping drilling and jointing of treated bamboo members for making of mat, posts, joints, ties, beams and bracing used for building construction

To be competent, the user/individual on the job must be able to:

- PC1.** read and interpret the drawing relevant to bamboo construction works
- PC2.** list out the components required for all the members and label them as per specification
- PC3.** ensure the treated bamboo for any signs of damage is free from damages
- PC4.** cut the posts, horizontal members, diagonal bracings, etc. as per drawing and label them (joint numbers)
- PC5.** mark a template for truss making on the ground as per the drawings
- PC6.** cut the treated bamboo to size of components for rafters, ties, struts, wind bracings raking members and purlins- number the member ends
- PC7.** make 10mm diameter holes in the appropriate locations and numbers as per the drawing using hand auger or power drills

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** knowledge on locally available bamboo based wall construction components
- KU5.** pros and cons for using bamboo as construction material
- KU6.** planning and organizing of work, tool and accessories for use in bamboo construction
- KU7.** knowledge about pros and cons of using tools for drilling and tying bamboos
- KU8.** knowledge about the different steps to construction of a bamboo joint.
- KU9.** check for straightness in the construction components



Qualification Pack

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** read checklist of components
- GS5.** speak in one or more language, preferably one of the local language at the site
- GS6.** orally and effectively communicate with co-workers & subordinates
- GS7.** decide on whether the workplace is safe for working
- GS8.** plan work and organize required resources
- GS9.** manage resources
- GS10.** complete work as per agreed time schedule and quality



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out cutting, shaping drilling and jointing of treated bamboo members for making of mat, posts, joints, ties, beams and bracing used for building construction</i>	30	70	-	-
PC1. read and interpret the drawing relevant to bamboo construction works	-	-	-	-
PC2. list out the components required for all the members and label them as per specification	-	-	-	-
PC3. ensure the treated bamboo for any signs of damage is free from damages	-	-	-	-
PC4. cut the posts, horizontal members, diagonal bracings, etc. as per drawing and label them (joint numbers)	-	-	-	-
PC5. mark a template for truss making on the ground as per the drawings	-	-	-	-
PC6. cut the treated bamboo to size of components for rafters, ties, struts, wind bracings raking members and purlins- number the member ends	-	-	-	-
PC7. make 10mm diameter holes in the appropriate locations and numbers as per the drawing using hand auger or power drills	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3623
NOS Name	Cut, shape, drill and join treated bamboo for making of mat, posts, joints, ties, beams and bracing used for building construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	2
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3624: Construct simple rural buildings with treated bamboo

Description

This unit describes the skills and knowledge required for the construction of simple rural buildings with treated bamboo

Scope

The scope covers the following :

- Carry out preparatory works for construction of simple rural building.
- Carry out erection of superstructure with bamboo components.
- Carry out erection of roofing truss, purlins, ties, bracings etc.
- Fix roof cladding , CGI or bamboo sheets.

Elements and Performance Criteria

Carry out preparatory works for construction of simple rural building

To be competent, the user/individual on the job must be able to:

- PC1.** read and interpret the sketches of the building
- PC2.** select tools required for the task and ensure they are in working condition
- PC3.** set out the layouts as per sketches/drawings
- PC4.** ensure transfer of loading points as per the layouts using water level tubes, plumb bobs to check 90 degree.
- PC5.** ensure proper protection of bamboo members from moisture when in contact with ground
- PC6.** connect base of the bamboo member to a stone/concrete foundation/ top of toe wall as per the sketches
- PC7.** ensure appropriate protection of bamboo posts, ties and bracings

Carry out erection of superstructure with bamboo components

To be competent, the user/individual on the job must be able to:

- PC8.** plan and organise work resources for construction of superstructure
- PC9.** sort different components and stack them as per use
- PC10.** use appropriate Personal Protective Equipment (P.P.E.s) for the task
- PC11.** ensure work place is clear for undertaking the super-structure work
- PC12.** place and anchor the posts at base and tie them at roof, lintel and sill level
- PC13.** fix the bracings by fitting all joints with MS bolts (10mm) and tying with GI wire, nylon ropes or equivalent materials
- PC14.** confirm placement of door and window frames as per the drawing
- PC15.** carry out erection of simple bamboo mat walls or Ekra as per specification/ instruction
- PC16.** carry out plastering of the bamboo mats with cement stabilised mud /cement sand mortar, or plaster reinforced with chicken wire mesh as per applicability

Carry out erection of roofing truss, purlins, ties, bracings etc.

To be competent, the user/individual on the job must be able to:



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- PC17.** plan and organise the sequence work for erection of roof truss
- PC18.** identify the labelled components as per specifications
- PC19.** use PPE's for roof truss erection and follow precaution while working at height
- PC20.** place the truss on the vertical posts as per specifications/ drawings
- PC21.** fabricate trusses, based on the template, using the members cut to sizes as per specifications and joint numbering
- PC22.** connect all the joints using MS bolts and nuts with double washers and secure them by tying with GI wire, nylon rope or equivalent material
- PC23.** fix purlins and rafters simultaneously as the trusses are erected to ensure stability of the trusses in standing position.
- PC24.** fix all the roof framing components including all trusses ,purlins and wind bracing as per the drawing
- PC25.** bolt the joints with MS 10mm diameter bolt and tie with GI wires at all the locations where the purlins rest including the component joint.

Fix roof cladding, CGI or bamboo sheets

To be competent, the user/individual on the job must be able to:

- PC26.** perform visual checks for the quality of roofing sheets
- PC27.** use PPE's for roof cladding and follow precaution while working at height
- PC28.** fix the roofing sheets to the bamboo truss using J - Hooks
- PC29.** fix ridge cap, valley and hip covers
- PC30.** fix GI gutters at eaves end for collection of rainwater.

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** different ways to tie, screw and hammer bamboo members for a permanent construction.
- KU5.** process of checking horizontality and vertical straightness using water level tubes, plumb bobs and other methods used for checking 90 degree
- KU6.** knowledge on locally available bamboo based wall construction components
- KU7.** planning and organizing of work, tool and accessories for use in bamboo construction
- KU8.** knowledge about pros and cons of using tools for drilling and tying bamboos
- KU9.** knowledge about the different steps to construction of a bamboo joint
- KU10.** check for straightness in the construction components.
- KU11.** process of erection of superstructure
- KU12.** process of erection of bamboo roof truss
- KU13.** process of fixing of roof cladding, roof sheets on bamboo truss
- KU14.** roofing sheets used in bamboo buildings mostly GI or corrugated bamboo sheet



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Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** read checklist of components
- GS5.** speak in one or more language, preferably one of the local language at the site
- GS6.** orally and effectively communicate with co-workers & subordinates
- GS7.** decide on whether the workplace is safe for working
- GS8.** plan work and organize required resources
- GS9.** manage resources
- GS10.** complete work as per agreed time schedule and quality



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory works for construction of simple rural building</i>	5	15	-	-
PC1. read and interpret the sketches of the building	-	-	-	-
PC2. select tools required for the task and ensure they are in working condition	-	-	-	-
PC3. set out the layouts as per sketches/drawings	-	-	-	-
PC4. ensure transfer of loading points as per the layouts using water level tubes, plumb bobs to check 90 degree.	-	-	-	-
PC5. ensure proper protection of bamboo members from moisture when in contact with ground	-	-	-	-
PC6. connect base of the bamboo member to a stone/concrete foundation/ top of toe wall as per the sketches	-	-	-	-
PC7. ensure appropriate protection of bamboo posts, ties and bracings	-	-	-	-
<i>Carry out erection of superstructure with bamboo components</i>	10	20	-	-
PC8. plan and organise work resources for construction of superstructure	-	-	-	-
PC9. sort different components and stack them as per use	-	-	-	-
PC10. use appropriate Personal Protective Equipment (P.P.E.s) for the task	-	-	-	-
PC11. ensure work place is clear for undertaking the super-structure work	-	-	-	-
PC12. place and anchor the posts at base and tie them at roof, lintel and sill level	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. fix the bracings by fitting all joints with MS bolts (10mm) and tying with GI wire, nylon ropes or equivalent materials	-	-	-	-
PC14. confirm placement of door and window frames as per the drawing	-	-	-	-
PC15. carry out erection of simple bamboo mat walls or Ekra as per specification/ instruction	-	-	-	-
PC16. carry out plastering of the bamboo mats with cement stabilised mud /cement sand mortar, or plaster reinforced with chicken wire mesh as per applicability	-	-	-	-
<i>Carry out erection of roofing truss, purlins, ties, bracings etc.</i>	5	15	-	-
PC17. plan and organise the sequence work for erection of roof truss	-	-	-	-
PC18. identify the labelled components as per specifications	-	-	-	-
PC19. use PPE's for roof truss erection and follow precaution while working at height	-	-	-	-
PC20. place the truss on the vertical posts as per specifications/ drawings	-	-	-	-
PC21. fabricate trusses, based on the template, using the members cut to sizes as per specifications and joint numbering	-	-	-	-
PC22. connect all the joints using MS bolts and nuts with double washers and secure them by tying with GI wire, nylon rope or equivalent material	-	-	-	-
PC23. fix purlins and rafters simultaneously as the trusses are erected to ensure stability of the trusses in standing position.	-	-	-	-
PC24. fix all the roof framing components including all trusses ,purlins and wind bracing as per the drawing	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. bolt the joints with MS 10mm diameter bolt and tie with GI wires at all the locations where the purlins rest including the component joint.	-	-	-	-
<i>Fix roof cladding, CGI or bamboo sheets</i>	10	20	-	-
PC26. perform visual checks for the quality of roofing sheets	-	-	-	-
PC27. use PPE's for roof cladding and follow precaution while working at height	-	-	-	-
PC28. fix the roofing sheets to the bamboo truss using J - Hooks	-	-	-	-
PC29. fix ridge cap, valley and hip covers	-	-	-	-
PC30. fix GI gutters at eaves end for collection of rainwater.	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3624
NOS Name	Construct simple rural buildings with treated bamboo
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3625: Follow seismic and wind safety protection measures for bamboo buildings

Description

This unit describes the skills and knowledge required for following the seismic and wind safety protection measures for bamboo buildings

Scope

The scope covers the following :

- Carry out the seismic and wind safety protection measures in bamboo buildings

Elements and Performance Criteria

Preparatory works for construction of simple rural building

To be competent, the user/individual on the job must be able to:

- PC1.** place the seismic and wind bracing members at the specified location and as per recommended orientation in the super structure
- PC2.** carry out specified placement of the diagonal bracing members in the roof structure and carry out a recommended jointing
- PC3.** carry out winding of GI or equivalent ropes at joints to avoid stress concentration during seismic and high winds
- PC4.** fix J hook fitting to avoid high wind suction of CGI sheets
- PC5.** fix metal arresters to avoid lifting of roofing sheets in very high wind areas

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** sorting, storing and stacking of bamboo as per use
- KU5.** pros and cons of using bamboo as construction material
- KU6.** pros and cons of using bamboo as construction material
- KU7.** maturity age for bamboo for use in construction works
- KU8.** instruction manual for bamboo treatment
- KU9.** knowledge on locally available bamboo based wall construction components
- KU10.** planning and organizing of work, tool and accessories for use in bamboo construction
- KU11.** knowledge about pros and cons of using tools for drilling and tying bamboos
- KU12.** knowledge about the different steps to construction of a bamboo joint
- KU13.** check for straightness in the construction components



Qualification Pack

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** read checklist of components
- GS5.** speak in one or more language, preferably one of the local language at the site
- GS6.** orally and effectively communicate with co-workers & subordinates
- GS7.** decide on whether the workplace is safe for working
- GS8.** plan work and organize required resources
- GS9.** manage resources
- GS10.** complete work as per agreed time schedule and quality



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Preparatory works for construction of simple rural building</i>	30	70	-	-
PC1. place the seismic and wind bracing members at the specified location and as per recommended orientation in the super structure	-	-	-	-
PC2. carry out specified placement of the diagonal bracing members in the roof structure and carry out a recommended jointing	-	-	-	-
PC3. carry out winding of GI or equivalent ropes at joints to avoid stress concentration during seismic and high winds	-	-	-	-
PC4. fix J hook fitting to avoid high wind suction of CGI sheets	-	-	-	-
PC5. fix metal arresters to avoid lifting of roofing sheets in very high wind areas	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3625
NOS Name	Follow seismic and wind safety protection measures for bamboo buildings
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	1
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3626: Construct buildings using Compressed Stabilized Earth Block (CSEB)

Description

This unit describes the skills and knowledge required for construction of building using Compressed Stabilized Earth Block (CSEB)

Scope

The scope covers the following :

- Carry out preparatory activities for masonry work
- Carry out visual checks on CSEB and test soil types to prepare stabilized sand-mud mortar for carrying out masonry, pointing and plastering work
- Lay CSEB for construction of load bearing / non-load bearing wall, columns.
- Carry out fixing of door and window frames in CSEB masonry wall of different block sizes
- Carry out pointing in CSEB masonry of different block sizes

Elements and Performance Criteria

Carry out preparatory activities for masonry work

To be competent, the user/individual on the job must be able to:

- PC1.** read and interpret the sketches for super-structure works
- PC2.** select required tools for the task and ensure they are in working condition
- PC3.** select appropriate Personal Protective Equipment (P.P.E.s) for the task
- PC4.** ensure work place is clear for undertaking the super-structure work
- PC5.** select and secure flat areas to stack CSEB blocks.
- PC6.** carry out preparation of working platform for mortar mixing
- PC7.** lay the zero course(without mortar) of CSEB masonry as per sketches/drawings
- PC8.** visually check the CSEB for defect such as breaking joints
- PC9.** check horizontal and vertical straightness using water level tubes, plum bobs and other methods
- PC10.** select and prepare/procure appropriate tools for testing of soil
- PC11.** secure sources for sand, mud and water supply

Carry out visual checks on CSEB and test soil types to prepare stabilized sand-mud mortar for carrying out masonry, pointing and plastering work

To be competent, the user/individual on the job must be able to:

- PC12.** select appropriate soil and sand for preparation of stabilized sand-mud mortar
- PC13.** conduct field tests and in select cases, may be laboratory tests
- PC14.** procure sand and soil of required quantities
- PC15.** perform visual checks on the CSEB for strength, soundness, moisture absorption prior to use
- PC16.** screen selected soil and sand before use



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PC17. select appropriate tools and equipment as per the tasks ensuring they are in working condition

Lay CSEB for construction of load bearing / non-load bearing wall, columns in stretcher and English bond for different block sizes

To be competent, the user/individual on the job must be able to:

PC18. estimate the quantity of CSEB and mortar material required for English and stretcher bond-full blocks, half and 3/4th blocks

PC19. perform visual checks for quality of CSEB prior to use

PC20. ensure fine aggregate and mud are sieved as per specification/instruction

PC21. ensure proper stacking of CSEB of required numbers as per requirement at the work place

PC22. ensure soaking of CSEB prior to commencement of work

PC23. break blocks to required shape and size using appropriate tools following appropriate safety measures

PC24. lay and fix CSEB blocks for walls both load bearing and non-load bearing wall masonry for columns and walls in English (up to 1&1/2 bricks wall)and stretcher bond for different block sizes

PC25. construct T, L, Crossing, opening ends in CSEB of different sizes

PC26. provide vertical reinforcement at corners and in opening jambs and horizontal bands as per sketches for seismic protection

PC27. check vertical and horizontal alignment using appropriate tools

PC28. maintain line and level of each course of CSEB work using wooden / aluminum straight edge sections

PC29. set out 90° corners using builder's square or 3-4-5 method and check right angles of corner, T, crossing

PC30. ensure adequate curing of constructed masonry structure

Carry out fixing of door and window frames in CSEB masonry wall of different block sizes

To be competent, the user/individual on the job must be able to:

PC31. mark, set out location of frames of doors, windows and ventilators

PC32. check and carry out proper alignment of the frame and hold in position with temporary support

PC33. check the holdfast position and grout it (1:1.5:3 CC) between CSEB blocks in wall

PC34. fill the gap between wall and door frame with non-shrink material/grout fix wooden/metal panels for doors, windows and ventilators

Carry out pointing in CSEB masonry of different block sizes

To be competent, the user/individual on the job must be able to:

PC35. ensure that joints are cleaned and surface is wet prior to pointing

PC36. ensure lime/cement-sand-mud mortar for pointing is prepared as per specification (10% stabilization)

PC37. fill joints with cement/lime stabilized mortar (10% stabilization) to obtain specified type of pointing

PC38. carry out flush pointing using recommended tools and technique

PC39. ensure specified curing of pointing works



Qualification Pack

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** safety rules and regulations for handling and storing required tools, equipment and materials
- KU3.** personal protection including the use of related safety gears & equipment
- KU4.** various tools required for work: Different types of Trowels (of the right blade size), Masons Hammer, Blocking Chisel, Mashing Hammer, Jointers, Measuring tape, Level and level pipe, Wire net for screening
- KU5.** the mix of cement/lime for different soil conditions
- KU6.** check on CSEB for strength, soundness, moisture absorption before use
- KU7.** procedure for storage of the raw materials, soil cement, lime and water
- KU8.** procedure for laying CSEB in English and stretcher bond
- KU9.** procedure for construction of T, L, Crossing, opening ends in CSEB of different sizes
- KU10.** process of reinforcing T, L, Crossing, opening ends in CSEB in different seismic zones
- KU11.** zone specific seismic reinforcements as per drawing: Vertical reinforcement at corners and in opening jambs & horizontal bands, PB, SB, LB & RB- applicability in zone V, IV and III
- KU12.** process of fixing of doors ,windows and ventilators in CSEB wall
- KU13.** mortar used for pointing in CSEB masonry
- KU14.** process of pointing in CSEB masonry
- KU15.** process of curing in CSEB masonry

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** basic numeracy skills
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** orally and effectively communicate with co-workers & subordinates
- GS5.** decide on whether the workplace is safe for working
- GS6.** plan work and organize required resources
- GS7.** manage resources
- GS8.** complete work as per agreed time schedule and quality



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory activities for masonry work</i>	5	20	-	-
PC1. read and interpret the sketches for super-structure works	-	-	-	-
PC2. select required tools for the task and ensure they are in working condition	-	-	-	-
PC3. select appropriate Personal Protective Equipment (P.P.E.s) for the task	-	-	-	-
PC4. ensure work place is clear for undertaking the super-structure work	-	-	-	-
PC5. select and secure flat areas to stack CSEB blocks.	-	-	-	-
PC6. carry out preparation of working platform for mortar mixing	-	-	-	-
PC7. lay the zero course(without mortar) of CSEB masonry as per sketches/drawings	-	-	-	-
PC8. visually check the CSEB for defect such as breaking joints	-	-	-	-
PC9. check horizontal and vertical straightness using water level tubes, plum bobs and other methods	-	-	-	-
PC10. select and prepare/procure appropriate tools for testing of soil	-	-	-	-
PC11. secure sources for sand, mud and water supply	-	-	-	-
<i>Carry out visual checks on CSEB and test soil types to prepare stabilized sand-mud mortar for carrying out masonry, pointing and plastering work</i>	5	10	-	-
PC12. select appropriate soil and sand for preparation of stabilized sand-mud mortar	-	-	-	-
PC13. conduct field tests and in select cases, may be laboratory tests	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. procure sand and soil of required quantities	-	-	-	-
PC15. perform visual checks on the CSEB for strength, soundness, moisture absorption prior to use	-	-	-	-
PC16. screen selected soil and sand before use	-	-	-	-
PC17. select appropriate tools and equipment as per the tasks ensuring they are in working condition	-	-	-	-
<i>Lay CSEB for construction of load bearing / non-load bearing wall, columns in stretcher and English bond for different block sizes</i>	10	15	-	-
PC18. estimate the quantity of CSEB and mortar material required for English and stretcher bond-full blocks, half and 3/4th blocks	-	-	-	-
PC19. perform visual checks for quality of CSEB prior to use	-	-	-	-
PC20. ensure fine aggregate and mud are sieved as per specification/instruction	-	-	-	-
PC21. ensure proper stacking of CSEB of required numbers as per requirement at the work place	-	-	-	-
PC22. ensure soaking of CSEB prior to commencement of work	-	-	-	-
PC23. break blocks to required shape and size using appropriate tools following appropriate safety measures	-	-	-	-
PC24. lay and fix CSEB blocks for walls both load bearing and non-load bearing wall masonry for columns and walls in English (up to 1&1/2 bricks wall)and stretcher bond for different block sizes	-	-	-	-
PC25. construct T, L, Crossing, opening ends in CSEB of different sizes	-	-	-	-
PC26. provide vertical reinforcement at corners and in opening jambs and horizontal bands as per sketches for seismic protection	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC27. check vertical and horizontal alignment using appropriate tools	-	-	-	-
PC28. maintain line and level of each course of CSEB work using wooden / aluminum straight edge sections	-	-	-	-
PC29. set out 90° corners using builder's square or 3-4-5 method and check right angles of corner, T, crossing	-	-	-	-
PC30. ensure adequate curing of constructed masonry structure	-	-	-	-
<i>Carry out fixing of door and window frames in CSEB masonry wall of different block sizes</i>	5	15	-	-
PC31. mark, set out location of frames of doors, windows and ventilators	-	-	-	-
PC32. check and carry out proper alignment of the frame and hold in position with temporary support	-	-	-	-
PC33. check the holdfast position and grout it (1:1.5:3 CC) between CSEB blocks in wall	-	-	-	-
PC34. fill the gap between wall and door frame with non-shrink material/grout fix wooden/metal panels for doors, windows and ventilators	-	-	-	-
<i>Carry out pointing in CSEB masonry of different block sizes</i>	5	10	-	-
PC35. ensure that joints are cleaned and surface is wet prior to pointing	-	-	-	-
PC36. ensure lime/cement-sand-mud mortar for pointing is prepared as per specification (10% stabilization)	-	-	-	-
PC37. fill joints with cement/lime stabilized mortar (10% stabilization) to obtain specified type of pointing	-	-	-	-
PC38. carry out flush pointing using recommended tools and technique	-	-	-	-
PC39. ensure specified curing of pointing works	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N3626
NOS Name	Construct buildings using Compressed Stabilized Earth Block (CSEB)
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	3
Version	3.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025



Qualification Pack

CON/N3603: Build structures using random rubble masonry for rural construction

Description

This unit describes the skills and knowledge required to build structures using random rubble in rural construction

Scope

The scope covers the following :

- Carry out preparatory work for rubble masonry
- Lay out coursed and un-coursed Random Rubble Masonry with undressed or hammer dressed stones
- Carry out flush /raised pointing in stone masonry

Elements and Performance Criteria

Carry out preparatory work for Rubble Masonry

To be competent, the user/individual on the job must be able to:

- PC1.** ensure that the correct tools, and tackles are selected for use in the rubble Masonry
- PC2.** select appropriate personal protective equipment (P.P.E) for the task
- PC3.** roughly estimate amount of materials required to complete a rubble masonry work
- PC4.** ensure that the sub-base is prepared properly and surface is cleaned before laying the stone
- PC5.** identify and transfer required levels using appropriate tools prior to rubble masonry work

Lay out coursed and un coursed Random Rubble Masonry with undressed or hammer dressed stones

To be competent, the user/individual on the job must be able to:

- PC6.** mix cement /lime/mud mortar for rubble masonry in specified ratio
- PC7.** check for workability and proportion of cement/lime/ mud mortar
- PC8.** prepare the sides, edges, bed of stone to ensure proper bonding of stones
- PC9.** ensure proper wetting of stones prior to laying
- PC10.** work with both undressed and hammer dressed stones as per the requirement
- PC11.** lay stones to build wall of un-course random rubble or course random rubble as per drawing/sketch
- PC12.** use through stones or bond stones at specified intervals
- PC13.** use large stones at the corners and at jambs to increase the strength
- PC14.** check horizontal and vertical alignment using appropriate tools
- PC15.** set out 90 corners using builders square or 3-4-5 method and check right angle if required
- PC16.** ensure proper curing of rubble masonry structure

Carry out flush/raised pointing in stone masonry

To be competent, the user/individual on the job must be able to:

- PC17.** perform raking of joints as specified prior to drying of bonding mortar
- PC18.** ensure that joints are cleaned and surface is wet prior to pointing



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- PC19.** ensure lime/cement mortar for pointing is prepared as per specification
- PC20.** fill joints with appropriate mortar to obtain specified type of pointing
- PC21.** carry out flush/raised pointing as per specification using appropriate tools and technique
- PC22.** ensure proper curing of pointing

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** basic principles of measurement
- KU2.** standard size of random rubble masonry tools and equipment, their use, care and maintenance such as Measuring tape, trowels, floats, brushes, screed boards, straightedge, mortar boards and stands, shovels, hawks, joint rules, masons square, buckets, spade, volume box, scrapers, rammer
- KU3.** safety rules and regulations for handling and storing required masonry tools, equipment and materials
- KU4.** personal protection including the use of related safety gears & equipment
- KU5.** sketches for building brick and block work structures
- KU6.** standard practices for random rubble masonry work
- KU7.** reference levels on the wall and its importance
- KU8.** different types mortar requirements for the rubble masonry works as per the specification and aesthetic requirements
- KU9.** various techniques / procedures to work with undressed and hammer dressed stones used for un-course and course random rubble masonry
- KU10.** importance and purpose of using through/bond stones or their alternates
- KU11.** appropriate horizontal and vertical distance for providing bond stones
- KU12.** different mortar mix used for pointing
- KU13.** flushed and Raised types of pointing in stone masonry and its application
- KU14.** various pointing and raking tools and method of pointing

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** read sketches for the task
- GS2.** read sign boards, and safety tags
- GS3.** basic numeracy skills
- GS4.** speak in one or more language, preferably one of the local language at the site
- GS5.** orally and effectively communicate with co-workers & subordinates
- GS6.** decide on whether the workplace is safe for working
- GS7.** plan work and Organize required resources
- GS8.** complete work as per agreed time schedule and quality
- GS9.** optimize resources efficiently



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GS10. minimize wastage in the workplace



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out preparatory work for Rubble Masonry</i>	10	20	-	-
PC1. ensure that the correct tools, and tackles are selected for use in the rubble Masonry	-	-	-	-
PC2. select appropriate personal protective equipment (P.P.E) for the task	-	-	-	-
PC3. roughly estimate amount of materials required to complete a rubble masonry work	-	-	-	-
PC4. ensure that the sub-base is prepared properly and surface is cleaned before laying the stone	-	-	-	-
PC5. identify and transfer required levels using appropriate tools prior to rubble masonry work	-	-	-	-
<i>Lay out coursed and un coursed Random Rubble Masonry with undressed or hammer dressed stones</i>	10	25	-	-
PC6. mix cement /lime/mud mortar for rubble masonry in specified ratio	-	-	-	-
PC7. check for workability and proportion of cement/lime/ mud mortar	-	-	-	-
PC8. prepare the sides, edges, bed of stone to ensure proper bonding of stones	-	-	-	-
PC9. ensure proper wetting of stones prior to laying	-	-	-	-
PC10. work with both undressed and hammer dressed stones as per the requirement	-	-	-	-
PC11. lay stones to build wall of un-course random rubble or course random rubble as per drawing/sketch	-	-	-	-
PC12. use through stones or bond stones at specified intervals	-	-	-	-
PC13. use large stones at the corners and at jambs to increase the strength	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. check horizontal and vertical alignment using appropriate tools	-	-	-	-
PC15. set out 90 corners using builders square or 3-4-5 method and check right angle if required	-	-	-	-
PC16. ensure proper curing of rubble masonry structure	-	-	-	-
<i>Carry out flush/raised pointing in stone masonry</i>	10	25	-	-
PC17. perform raking of joints as specified prior to drying of bonding mortar	-	-	-	-
PC18. ensure that joints are cleaned and surface is wet prior to pointing	-	-	-	-
PC19. ensure lime/cement mortar for pointing is prepared as per specification	-	-	-	-
PC20. fill joints with appropriate mortar to obtain specified type of pointing	-	-	-	-
PC21. carry out flush/raised pointing as per specification using appropriate tools and technique	-	-	-	-
PC22. ensure proper curing of pointing	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N3603
NOS Name	Build structures using random rubble masonry for rural construction
Sector	Construction
Sub-Sector	Rural Infrastructure construction
Occupation	Masonry - Rural
NSQF Level	3.5
Credits	3
Version	4.0
Last Reviewed Date	08/05/2025
Next Review Date	30/04/2028
NSQC Clearance Date	08/05/2025

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by CSDCI. Each Performance Criteria (PC)/ Elements will be assigned marks proportional to its importance in NOS.
2. CSDCI will also lay down proportion of marks for Theory and Skills Practical for each PC/ Elements. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by CSDCI.
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below:
 - a) Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
 - b) The passing percentage for the QP will be 70%. To pass the Qualification Pack.
 - c) The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome
 - d) The trainee shall be provided with a chance to repeat the test to correct his procedures in case of



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improper performance, with a deduction of marks for each iteration.

e) After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.

f) In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack within the specified time frame set by CSDCI.

g) The candidates shall undergo On job training (OJT), and will learn at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by CSDCI. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor of company under which candidates undergo on job training.

Minimum Aggregate Passing % at QP Level : 70

(Please note: Every Trainee should score a minimum aggregate passing percentage as specified above, to successfully clear the Qualification Pack assessment.)

Assessment Weightage

Compulsory NOS

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N3601.Mark layout for foundation, walls, soak pit/septic tank and monitor earthwork activities for rural construction	30	70	-	-	100	15
CON/N3608.Install sanitary fitting and fixtures in rural toilets	30	70	-	-	100	15
CON/N9001.Work according to personal health, safety and environment protocols at construction site	30	70	-	-	100	10
DGT/VSQ/N0101.Employability Skills (30 Hours)	20	30	-	-	50	10
Total	110	240	-	-	350	50



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Elective: 1 General

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N3602.Build brick / block masonry structures for rural construction	30	70	-	-	100	10
CON/N3604.Carry out IPS flooring in rural construction	30	70	-	-	100	10
CON/N3605.Carry out reinforcement steel works for R.C.C structures in rural construction	30	70	-	-	100	10
CON/N3606.Carry out shuttering works in rural construction	30	70	-	-	100	10
CON/N3607.Carry out manual concreting in rural construction	30	70	-	-	100	10
Total	150	350	-	-	500	50

Elective: 2 Bamboo Structure

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N3621.Select, harvest and prepare the bamboo for the construction works	30	70	-	-	100	10
CON/N3622.Select, stack and perform visual quality checks on bamboo used for construction purpose	30	70	-	-	100	10
CON/N3623.Cut, shape, drill and join treated bamboo for making of mat, posts, joints, ties, beams and bracing used for building construction	30	70	-	-	100	10



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National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N3624. Construct simple rural buildings with treated bamboo	30	70	-	-	100	10
CON/N3625. Follow seismic and wind safety protection measures for bamboo buildings	30	70	-	-	100	10
Total	150	350	-	-	500	50

Optional: 1 Compressed Stabilized Earth Block (CSEB)

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N3626. Construct buildings using Compressed Stabilized Earth Block (CSEB)	30	70	-	-	100	10
Total	30	70	-	-	100	10

Optional: 2 Random Rubble Masonry (RRB)

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N3603. Build structures using random rubble masonry for rural construction	30	70	-	-	100	10
Total	30	70	-	-	100	10



Qualification Pack

Acronyms

NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
QP	Qualifications Pack
TVET	Technical and Vocational Education and Training



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Glossary

Sector	Sector is a conglomeration of different business operations having similar business and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.
Sub-sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Occupation	Occupation is a set of job roles, which perform similar/ related set of functions in an industry.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organisation.
Occupational Standards (OS)	OS specify the standards of performance an individual must achieve when carrying out a function in the workplace, together with the Knowledge and Understanding (KU) they need to meet that standard consistently. Occupational Standards are applicable both in the Indian and global contexts.
Performance Criteria (PC)	Performance Criteria (PC) are statements that together specify the standard of performance required when carrying out a task.
National Occupational Standards (NOS)	NOS are occupational standards which apply uniquely in the Indian context.
Qualifications Pack (QP)	QP comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A QP is assigned a unique qualifications pack code.
Unit Code	Unit code is a unique identifier for an Occupational Standard, which is denoted by an 'N'
Unit Title	Unit title gives a clear overall statement about what the incumbent should be able to do.
Description	Description gives a short summary of the unit content. This would be helpful to anyone searching on a database to verify that this is the appropriate OS they are looking for.
Scope	Scope is a set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on quality of performance required.



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Knowledge and Understanding (KU)	<p>Knowledge and Understanding (KU) are statements which together specify the technical, generic, professional and organisational specific knowledge that an individual needs in order to perform to the required standard.</p>
Organisational Context	<p>Organisational context includes the way the organisation is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.</p>
Technical Knowledge	<p>Technical knowledge is the specific knowledge needed to accomplish specific designated responsibilities.</p>
Core Skills/ Generic Skills (GS)	<p>Core skills or Generic Skills (GS) are a group of skills that are the key to learning and working in today's world. These skills are typically needed in any work environment in today's world. These skills are typically needed in any work environment. In the context of the OS, these include communication related skills that are applicable to most job roles.</p>
Electives	<p>Electives are NOS/set of NOS that are identified by the sector as contributive to specialization in a job role. There may be multiple electives within a QP for each specialized job role. Trainees must select at least one elective for the successful completion of a QP with Electives.</p>
Options	<p>Options are NOS/set of NOS that are identified by the sector as additional skills. There may be multiple options within a QP. It is not mandatory to select any of the options to complete a QP with Options.</p>