



Qualification Pack



Shuttering Carpenter (Elective: System Formwork / Conventional Formwork)

Electives: System/ Conventional

QP Code: CON/Q3001

Version: 2.0

NSQF Level: 4

Construction Skill Development Council of India || CPB 103 & 104 (1st Floor), Block 4B, DLF Corporate Park, Phase III, MG Road



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CON/Q3001: Shuttering Carpenter (Elective: System Formwork / Conventional Formwork)

Brief Job Description

Shuttering Carpenter (System/ Conventional) is responsible for making shutters and assembling system/ conventional formwork for R.C.C structures such as columns, beams, slabs, walls, foundations and other similar structures

Personal Attributes

The shuttering carpenter (system/ conventional) is expected to be physically fit to work across various locations with varied environmental conditions. The person should be organized, diligent, methodical, safety-conscious, and a prompt decision-maker. In addition to being a team player, the individual should have good communication skills.

Applicable National Occupational Standards (NOS)

Compulsory NOS:

1. [CON/N0302: Make wooden shutters used in shuttering carpentry](#)
2. [CON/N0304: Carry out quality check for shuttering works](#)
3. [CON/N8001: Work effectively in a team to deliver desired results at the workplace](#)
4. [CON/N8002: Plan and organize work to meet expected outcomes](#)
5. [CON/N9001: Work according to personal health, safety and environment protocols at construction site](#)
6. [DGT/VSQ/N0102: Employability Skills \(60 Hours\)](#)

Electives (mandatory to select at least one):

Elective 1: System

This individual performs shuttering for different RCC structural element using system formwork as per drawing

1. [CON/N0303: Assemble and dismantle system formwork for R.C.C structures](#)

Elective 2: Conventional

This individual makes wooden shutter boards and carries out shuttering works for R.C.C structures using



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conventional formworks

1. [CON/N0315: Assemble and dismantle conventional shuttering / formwork for RCC structures](#)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Shuttering Carpentry
Country	India
NSQF Level	4
Credits	21
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7115.0300
Minimum Educational Qualification & Experience	11th grade pass OR Completed 1st year of 3-year diploma (after 10th) and pursuing regular diploma OR 10th grade pass plus 1-year NTC/ NAC OR 8th grade pass plus 2-year NTC plus 1 Year NAC OR 10th grade pass with 2 Years of experience relevant experience OR 10th grade pass and pursuing continuous schooling OR 5th grade pass OR No formal education prescribed
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NIL
Minimum Job Entry Age	18 Years
Last Reviewed On	NA



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Next Review Date	31/03/2025
NSQC Approval Date	31/03/2022
Version	2.0
Reference code on NQR	2022/CON/CSDCI/06620
NQR Version	1



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CON/N0302: Make wooden shutters used in shuttering carpentry

Description

This unit describes the skills and knowledge required to make wooden shutters used in shuttering carpentry

Scope

The scope covers the following :

- Cutting, sizing, and planing of timber and plywood using appropriate tools.
- Make wooden shutter panel board.

Elements and Performance Criteria

Cutting, sizing, and planing of timber and plywood using appropriate tools

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

- PC1.** use regular hand tools such as hand saw, chisel, jack hammer, nailing hammer, hand drill and other tools efficiently
- PC2.** use power tools and machines such as circular saw, hand drill machine, table mounted saw, planing machine and power drilling machine for cutting, sizing and planing of timber and plywood
- PC3.** follow ergonomic principles while operating the tools and machines
- PC4.** store and maintain all the relevant tools and machines

Make wooden shutter panel board

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

- PC5.** carry out visual check to ensure that timber, plywood are as per quality and requirements for making shutters
- PC6.** prepare "cutting plan" for cutting of the plywood as per the sketches / schematic working drawing
- PC7.** check that all fixtures, consumables and materials are available for shutter making
- PC8.** measure and mark the plywood/ timber using appropriate tools as per requirement
- PC9.** measure and mark form sheathing and stiffeners according to instructions and sketches
- PC10.** cut form sheathing material (plywood) and stiffeners (timber) within the tolerance limit and as per instructions / specifications
- PC11.** make wooden shutter panels using suitable joints as per specifications
- PC12.** smooth corners and edges of panels using appropriate tools
- PC13.** carry out nailing work as per standard practice ensuring rigidity of joints
- PC14.** ensure that shutter board dimensions are as per sketch

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



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- KU1.** standard procedure for shuttering works
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment, and materials required for relevant works in accordance with organizational norms
- KU3.** importance of personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** service request procedures for tools, materials and equipments
- KU5.** procedure for maintenance of tools and equipment
- KU6.** basic sketches / schematic working drawing relevant to making shutters, frames and moulds
- KU7.** basic principles of measurement, geometry and arithmetic calculation
- KU8.** linear conversion of units
- KU9.** units of measurements
- KU10.** different types of plywood and timber with their specifications and quality checks, as per requirements
- KU11.** how to select & use different carpentry tools and appropriate materials
- KU12.** standard size of all carpentry tools, materials and components
- KU13.** how to mark and lay out form sheathing and stiffeners as per requirements
- KU14.** appropriate methodology for cutting of form sheathing and stiffeners
- KU15.** how to carry out visual checks for plywood and timber
- KU16.** different types of joints such as dovetail, tennon & mortise, lap joints
- KU17.** use of the measurement and marking tools relevant to formwork carpentry
- KU18.** electrical safety while using power tools for making shutters
- KU19.** handling of hand / power tools and basic maintenance of tools

Generic Skills (GS)

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

- GS1.** write in one or more language, preferably in the local language of the site
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Cutting, sizing, and planing of timber and plywood using appropriate tools</i>	12	28	-	-
PC1. use regular hand tools such as hand saw, chisel, jack hammer, nailing hammer, hand drill and other tools efficiently	-	-	-	-
PC2. use power tools and machines such as circular saw, hand drill machine, table mounted saw, planing machine and power drilling machine for cutting, sizing and planing of timber and plywood	-	-	-	-
PC3. follow ergonomic principles while operating the tools and machines	-	-	-	-
PC4. store and maintain all the relevant tools and machines	-	-	-	-
<i>Make wooden shutter panel board</i>	18	42	-	-
PC5. carry out visual check to ensure that timber, plywood are as per quality and requirements for making shutters	-	-	-	-
PC6. prepare "cutting plan" for cutting of the plywood as per the sketches / schematic working drawing	-	-	-	-
PC7. check that all fixtures, consumables and materials are available for shutter making	-	-	-	-
PC8. measure and mark the plywood/ timber using appropriate tools as per requirement	-	-	-	-
PC9. measure and mark form sheathing and stiffeners according to instructions and sketches	-	-	-	-
PC10. cut form sheathing material (plywood) and stiffeners (timber) within the tolerance limit and as per instructions / specifications	-	-	-	-
PC11. make wooden shutter panels using suitable joints as per specifications	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC12. smooth corners and edges of panels using appropriate tools	-	-	-	-
PC13. carry out nailing work as per standard practice ensuring rigidity of joints	-	-	-	-
PC14. ensure that shutter board dimensions are as per sketch	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0302
NOS Name	Make wooden shutters used in shuttering carpentry
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Scaffolding
NSQF Level	4
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	31/03/2026
NSQC Clearance Date	31/03/2022



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CON/N0304: Carry out quality check for shuttering works

Description

This unit describes the skills and knowledge required to carry out quality checks for the shuttering works

Scope

The scope covers the following :

- Ensure the quality of shuttering works for proper functioning

Elements and Performance Criteria

Ensure the quality of shuttering works for proper functioning

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

- PC1.** examine the fixed shutters with respect to the survey layouts/ drawings
- PC2.** inspect if the release agent has been applied
- PC3.** check if the cover of reinforcement steel is as per the specifications
- PC4.** inspect joints of plywood and timber
- PC5.** check diagonal dimensions for its accuracy and take corrective action if a twist is observed
- PC6.** repair the damaged formwork boards / plates/ other components
- PC7.** ensure the water tightness of the whole shuttering / formwork system before concreting work
- PC8.** check plumb to ensure verticality is within tolerance limit
- PC9.** check dimensions according to sketches / instructions to ensure that they are within tolerance limit
- PC10.** check props for verticality, position and spacing in case of load bearing support
- PC11.** check lines and levels according to sketches / instructions to ensure that they are within tolerance limit
- PC12.** inspect the formwork supports for its stability
- PC13.** obtain approvals for the erected formwork from superiors and rectify errors if any

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for shuttering works
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment, and materials required for relevant works in accordance with organizational norms
- KU3.** importance of personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** service request procedures for tools, materials and equipments
- KU5.** procedure for maintenance of tools and equipment



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- KU6.** basic sketches / schematic working drawing relevant for erecting and dismantling system formwork
- KU7.** basic principles of measurement, geometry and arithmetic calculation
- KU8.** major types of system formwork (Cuplock, DOKA, PERI, Mivan, Aluform) and their appropriate applications
- KU9.** how to check for line, level and alignment
- KU10.** importance of quality checks in shuttering works
- KU11.** maximum tolerance limits for key quality checks for shuttering works as per IS / International codes
- KU12.** how to carry out rectification of shuttering works
- KU13.** basics and fundamentals of reinforcement works
- KU14.** basics and fundamentals of concreting works
- KU15.** materials and components used in shuttering works
- KU16.** suitability of release agent applied

Generic Skills (GS)

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

- GS1.** write in one or more language, preferably the local language at the site
- GS2.** read sketches, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Ensure the quality of shuttering works for proper functioning</i>	30	70	-	-
PC1. examine the fixed shutters with respect to the survey layouts/ drawings	-	-	-	-
PC2. inspect if the release agent has been applied	-	-	-	-
PC3. check if the cover of reinforcement steel is as per the specifications	-	-	-	-
PC4. inspect joints of plywood and timber	-	-	-	-
PC5. check diagonal dimensions for its accuracy and take corrective action if a twist is observed	-	-	-	-
PC6. repair the damaged formwork boards / plates/ other components	-	-	-	-
PC7. ensure the water tightness of the whole shuttering / formwork system before concreting work	-	-	-	-
PC8. check plumb to ensure verticality is within tolerance limit	-	-	-	-
PC9. check dimensions according to sketches / instructions to ensure that they are within tolerance limit	-	-	-	-
PC10. check props for verticality, position and spacing in case of load bearing support	-	-	-	-
PC11. check lines and levels according to sketches / instructions to ensure that they are within tolerance limit	-	-	-	-
PC12. inspect the formwork supports for its stability	-	-	-	-
PC13. obtain approvals for the erected formwork from superiors and rectify errors if any	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0304
NOS Name	Carry out quality check for shuttering works
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Scaffolding
NSQF Level	4
Credits	2
Version	3.0
Last Reviewed Date	NA
Next Review Date	31/03/2026
NSQC Clearance Date	31/03/2022



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CON/N8001: Work effectively in a team to deliver desired results at the workplace

Description

This unit describes the skills and knowledge required to work effectively within a team to achieve the desired results

Scope

The scope covers the following :

- Interact and communicate in an effective manner
- Support co-workers to execute the project requirements
- Practice inclusion

Elements and Performance Criteria

Interact and communicate in an effective manner

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

- PC1.** pass on work related information/ requirement clearly to the team members
- PC2.** inform co-workers and superiors about any kind of deviations from work
- PC3.** report any unresolved problem to the supervisor immediately
- PC4.** obtain instructions from superiors and respond on the same
- PC5.** communicate to team members/subordinates for appropriate work technique and method
- PC6.** seek clarification and advice as per the requirement

Support co-workers to execute the project requirements

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

- PC7.** hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams
- PC8.** work together with co-workers in a synchronized manner

Practice inclusion

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

- PC9.** maintain cultural inclusivity at work place
- PC10.** maintain disability friendly work practices
- PC11.** follow gender neutral practices at workplace
- PC12.** address discriminatory and offensive behaviour in a professional manner as per organizational policy

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** own roles and responsibilities



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- KU2.** importance of effective communication
- KU3.** the consequence of poor teamwork on project outcomes, timelines, safety at the construction site, etc.
- KU4.** different modes of communication used at workplace
- KU5.** importance of creating healthy and cooperative work environment among the gangs of workers
- KU6.** different activities within the work area where interaction with other workers is required
- KU7.** applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co-workers might need as per the requirement
- KU8.** importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timeliness, safety, risks at the construction project site
- KU9.** importance and need of supporting co-workers facing problems for the smooth functioning of work
- KU10.** the fundamental concept of gender equality
- KU11.** how to recognise and be sensitive to issues of disability, culture and gender
- KU12.** legislation, policies, and procedures relating to gender sensitivity and cultural diversity including their impact on the area of operation

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.** read the communication regarding work completion, materials used, tools and tackles used, the resource required, etc,
- GS3.** speak in one or more languages, preferably in one of the local language of the site
- GS4.** listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes
- GS5.** communicate orally and effectively with co-workers considering their educational and social background
- GS6.** decide on what information is to be shared with co-workers within the team or to the interfacing gang of workers
- GS7.** plan work and organize the required resources in coordination with team members
- GS8.** complete all assigned task in coordination with team members
- GS9.** take initiative in resolving issues among co-workers or report the same to superiors
- GS10.** ensure best ways of coordination among team members
- GS11.** evaluate the complexity of task and determine if any guidance is required from superiors



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Interact and communicate in an effective manner</i>	18	42	-	-
PC1. pass on work related information/ requirement clearly to the team members	-	-	-	-
PC2. inform co-workers and superiors about any kind of deviations from work	-	-	-	-
PC3. report any unresolved problem to the supervisor immediately	-	-	-	-
PC4. obtain instructions from superiors and respond on the same	-	-	-	-
PC5. communicate to team members/subordinates for appropriate work technique and method	-	-	-	-
PC6. seek clarification and advice as per the requirement	-	-	-	-
<i>Support co-workers to execute the project requirements</i>	6	14	-	-
PC7. hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams	-	-	-	-
PC8. work together with co-workers in a synchronized manner	-	-	-	-
<i>Practice inclusion</i>	6	14	-	-
PC9. maintain cultural inclusivity at work place	-	-	-	-
PC10. maintain disability friendly work practices	-	-	-	-
PC11. follow gender neutral practices at workplace	-	-	-	-
PC12. address discriminatory and offensive behaviour in a professional manner as per organizational policy	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N8001
NOS Name	Work effectively in a team to deliver desired results at the workplace
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Generic 2
NSQF Level	4
Credits	1
Version	10.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



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CON/N8002: Plan and organize work to meet expected outcomes

Description

This unit describes the knowledge and the skills required for an individual to plan and organize own work in order to meet expected outcome

Scope

The scope covers the following :

- Plan and prepare for work
- Organise required resources as per work plan
- Complete work as per the plan

Elements and Performance Criteria

Plan and prepare for work

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

- PC1.** identify the targets and timelines set by superiors
- PC2.** determine the work requirements corresponding to task(drawings/schedules/instructions/methodology), safety, tools and equipment prior to commencement of task
- PC3.** plan the work by analyzing the required outcomes, work procedures, allotted time, resource availability and known priorities
- PC4.** prepare the work areas in coordination with team members
- PC5.** plan for waste collection and disposal prior to and after completion of work

Organise required resources as per work plan

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

- PC6.** arrange the required manpower prior to commencement of work
- PC7.** organize the required materials, tools and tackles required for the task

Complete work as per the plan

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

- PC8.** engage allocated manpower in an appropriate manner
- PC9.** employ correct tools, tackles and equipment for the desired work
- PC10.** provide guidance to the subordinates to obtain desired outcome
- PC11.** use resources in an optimum manner to avoid any unnecessary wastage
- PC12.** use tools, tackles and equipment carefully to avoid damage
- PC13.** ensure the work processes adopted are in line with the specified standards and instructions
- PC14.** complete the work with the allocated resources within specified time
- PC15.** clean and organise the workplace after completion of task

Knowledge and Understanding (KU)



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The individual on the job needs to know and understand:

- KU1.** importance of proper housekeeping including safe waste disposal
- KU2.** policies, procedures and work targets set by superiors
- KU3.** how to identify work activities that need to be planned and organized
- KU4.** how to determine the task requirements
- KU5.** how to determine the quality requirements related to the task
- KU6.** how to undertake all aspect of planning and organizing the task, including interpretation of task, reading drawing/schedules, arranging resources, reporting problems etc.
- KU7.** how to implement the planned activities
- KU8.** how to use available resources in a judicious and appropriate manner to minimize wastages or damage

Generic Skills (GS)

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

- GS1.** write in one or more language, preferably the local language at the site
- GS2.** read communication from co-workers, superiors and notices from other departments as per requirement of the level
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** follow communication shared by co-workers regarding standard work processes, resources available, timelines, etc.
- GS5.** communicate effectively with co-workers and subordinates
- GS6.** decide on what sequence is to be adopted for execution of work
- GS7.** plan and organize the materials, tools, tackles and equipment required to execute the work
- GS8.** complete all assigned task with proper planning and organizing
- GS9.** analyze areas of work which could result in a delay of work, wastage of material or damage to tools and tackles
- GS10.** evaluate potential solutions to minimize avoidable delays and wastages at the construction site



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Plan and prepare for work</i>	9	21	-	-
PC1. identify the targets and timelines set by superiors	-	-	-	-
PC2. determine the work requirements corresponding to task(drawings/schedules/instructions/methodology), safety, tools and equipment prior to commencement of task	-	-	-	-
PC3. plan the work by analyzing the required outcomes, work procedures, allotted time, resource availability and known priorities	-	-	-	-
PC4. prepare the work areas in coordination with team members	-	-	-	-
PC5. plan for waste collection and disposal prior to and after completion of work	-	-	-	-
<i>Organise required resources as per work plan</i>	6	14	-	-
PC6. arrange the required manpower prior to commencement of work	-	-	-	-
PC7. organize the required materials, tools and tackles required for the task	-	-	-	-
<i>Complete work as per the plan</i>	15	35	-	-
PC8. engage allocated manpower in an appropriate manner	-	-	-	-
PC9. employ correct tools, tackles and equipment for the desired work	-	-	-	-
PC10. provide guidance to the subordinates to obtain desired outcome	-	-	-	-
PC11. use resources in an optimum manner to avoid any unnecessary wastage	-	-	-	-
PC12. use tools, tackles and equipment carefully to avoid damage	-	-	-	-
PC13. ensure the work processes adopted are in line with the specified standards and instructions	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. complete the work with the allocated resources within specified time	-	-	-	-
PC15. clean and organise the workplace after completion of task	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N8002
NOS Name	Plan and organize work to meet expected outcomes
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Generic 2
NSQF Level	4
Credits	1
Version	7.0
Last Reviewed Date	NA
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023



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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>	6	14	-	-
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>	6	14	-	-
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>	3	7	-	-
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	8.0
Last Reviewed Date	NA
Next Review Date	19/07/2023
NSQC Clearance Date	19/01/2023



Qualification Pack

DGT/VSQ/N0102: Employability Skills (60 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
- Career Development & Goal Setting
- 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.** identify employability skills required for jobs in various industries
- PC2.** identify and explore learning and employability portals

Constitutional values - Citizenship

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

- PC3.** recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.
- PC4.** follow environmentally sustainable practices

Becoming a Professional in the 21st Century

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

- PC5.** recognize the significance of 21st Century Skills for employment
- PC6.** practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life

Basic English Skills

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



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- PC7.** use basic English for everyday conversation in different contexts, in person and over the telephone
- PC8.** read and understand routine information, notes, instructions, mails, letters etc. written in English
- PC9.** write short messages, notes, letters, e-mails etc. in English

Career Development & Goal Setting

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

- PC10.** understand the difference between job and career
- PC11.** prepare a career development plan with short- and long-term goals, based on aptitude

Communication Skills

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

- PC12.** follow verbal and non-verbal communication etiquette and active listening techniques in various settings
- PC13.** work collaboratively with others in a team

Diversity & Inclusion

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

- PC14.** communicate and behave appropriately with all genders and PwD
- PC15.** escalate any issues related to sexual harassment at workplace according to POSH Act

Financial and Legal Literacy

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

- PC16.** select financial institutions, products and services as per requirement
- PC17.** carry out offline and online financial transactions, safely and securely
- PC18.** identify common components of salary and compute income, expenses, taxes, investments etc
- PC19.** identify relevant rights and laws and use legal aids to fight against legal exploitation

Essential Digital Skills

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

- PC20.** operate digital devices and carry out basic internet operations securely and safely
- PC21.** use e-mail and social media platforms and virtual collaboration tools to work effectively
- PC22.** use basic features of word processor, spreadsheets, and presentations

Entrepreneurship

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

- PC23.** identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research
- PC24.** develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion
- PC25.** identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity

Customer Service

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

- PC26.** identify different types of customers
- PC27.** identify and respond to customer requests and needs in a professional manner.



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PC28. follow appropriate hygiene and grooming standards

Getting ready for apprenticeship & Jobs

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

PC29. create a professional Curriculum vitae (Résumé)

PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively

PC31. apply to identified job openings using offline /online methods as per requirement

PC32. answer questions politely, with clarity and confidence, during recruitment and selection

PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

KU1. need for employability skills and different learning and employability related portals

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 English language for effective verbal (face to face and telephonic) and written communication in formal and informal set up

KU6. importance of career development and setting long- and short-term goals

KU7. about effective communication

KU8. POSH Act

KU9. Gender sensitivity and inclusivity

KU10. different types of financial institutes, products, and services

KU11. how to compute income and expenditure

KU12. importance of maintaining safety and security in offline and online financial transactions

KU13. different legal rights and laws

KU14. different types of digital devices and the procedure to operate them safely and securely

KU15. how to create and operate an e- mail account and use applications such as word processors, spreadsheets etc.

KU16. how to identify business opportunities

KU17. types and needs of customers

KU18. how to apply for a job and prepare for an interview

KU19. apprenticeship scheme and the process of registering on apprenticeship portal

Generic Skills (GS)

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

GS1. read and write different types of documents/instructions/correspondence

GS2. communicate effectively using appropriate language in formal and informal settings



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- GS3.** behave politely and appropriately with all
- GS4.** how to work in a virtual mode
- GS5.** perform calculations efficiently
- GS6.** solve problems effectively
- GS7.** pay attention to details
- GS8.** manage time efficiently
- GS9.** maintain hygiene and sanitization to avoid infection



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Introduction to Employability Skills</i>	1	1	-	-
PC1. identify employability skills required for jobs in various industries	-	-	-	-
PC2. identify and explore learning and employability portals	-	-	-	-
<i>Constitutional values - Citizenship</i>	1	1	-	-
PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
PC4. follow environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	2	4	-	-
PC5. recognize the significance of 21st Century Skills for employment	-	-	-	-
PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-	-
PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC10. understand the difference between job and career	-	-	-	-
PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC13. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC14. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC16. select financial institutions, products and services as per requirement	-	-	-	-
PC17. carry out offline and online financial transactions, safely and securely	-	-	-	-
PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-	-
PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Entrepreneurship</i>	2	3	-	-
PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC26. identify different types of customers	-	-	-	-
PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC28. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC29. create a professional Curriculum vitae (Résumé)	-	-	-	-
PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-	-
PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-	-
PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-
PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-	-
NOS Total	20	30	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	DGT/VSQ/N0102
NOS Name	Employability Skills (60 Hours)
Sector	Cross Sectoral
Sub-Sector	Professional Skills
Occupation	Employability
NSQF Level	4
Credits	2
Version	1.0
Last Reviewed Date	31/08/2023
Next Review Date	31/08/2026
NSQC Clearance Date	31/08/2023



Qualification Pack

CON/N0303: Assemble and dismantle system formwork for R.C.C structures

Description

This unit describes the skills and knowledge required to assemble and dismantle system formwork for RCC structures

Scope

The scope covers the following :

- Assemble system formwork for RCC structures
- Dismantle system formwork

Elements and Performance Criteria

Assemble system formwork for RCC structures

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

- PC1.** clean the shutter panels before using for shuttering work
- PC2.** check the supporting base prior to erection of system formwork
- PC3.** check and ensure all tools, material, components are available as per requirements
- PC4.** check that fixing of fasteners is as per system used and as per the requirements
- PC5.** apply release agents to sheathing material as per specifications and instructions
- PC6.** place and fix kicker for column, walls and check its position with respect to line, alignment, and necessary grid dimension
- PC7.** position and set out formwork manually or by mechanical means as per instructions/drawing and requirement
- PC8.** use appropriate methods/ tools for levelling of the formwork such as water level pipe, dumpy level, auto level or laser levelling machine
- PC9.** position and provide necessary support to the formwork using props or other appropriate components based on system used
- PC10.** check for block-outs and cast-in services at specified locations
- PC11.** plug all openings and gaps using foam sheet and adhesive tape or other appropriate materials
- PC12.** ensure water tightness of form by providing form sheet or necessary packing material
- PC13.** position and fix props properly and check for plumb, position and spacing as specified or instructed
- PC14.** provide horizontal or vertical construction joints in case of structural element such as beam , column, slab as per standard practices
- PC15.** ensure tightness of tie rods, supports, and bracings
- PC16.** check that line, level, alignment and plumb of the erected formwork is within tolerance limit
- PC17.** check the linear or angular dimensions for accuracy and take necessary corrective measures if required



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Dismantle system formwork

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

- PC18.** plan sequence of dismantling procedure as per standard practice and system used
- PC19.** remove bracing and all other supports provided to the formwork sequentially and safely as instructed
- PC20.** remove sheathing material sequentially using proper tools and tackles to avoid damage to structure or sheathing materials
- PC21.** dismantle formwork shutters manually or by mechanical means as per requirement
- PC22.** repair, clean and stack all the formwork materials/ components after dismantling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for shuttering works
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment, and materials required for relevant works in accordance with organizational norms
- KU3.** importance of personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** service request procedures for tools, materials and equipment as per organizational norms
- KU5.** procedure for maintenance of tools and equipment
- KU6.** basic principles of measurement, geometry and arithmetic calculation
- KU7.** linear conversion of units
- KU8.** units of measurements
- KU9.** different types of measurements and marking tools
- KU10.** how to select and use different types of formwork tools
- KU11.** standard size of all formwork tools, material and components
- KU12.** use of water level tube for leveling work
- KU13.** major types of system formwork such as Cuplock, DOKA, PERI, Mivan, Aluform and other similar system and their appropriate applications
- KU14.** how to erect and brace major types of formwork as per site requirements
- KU15.** properties and application of release agents
- KU16.** how to check for line, level and alignment

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.** read sketches/routine work drawings, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site



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- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace
- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble system formwork for RCC structures</i>	21	49	-	-
PC1. clean the shutter panels before using for shuttering work	-	-	-	-
PC2. check the supporting base prior to erection of system formwork	-	-	-	-
PC3. check and ensure all tools, material, components are available as per requirements	-	-	-	-
PC4. check that fixing of fasteners is as per system used and as per the requirements	-	-	-	-
PC5. apply release agents to sheathing material as per specifications and instructions	-	-	-	-
PC6. place and fix kicker for column, walls and check its position with respect to line, alignment, and necessary grid dimension	-	-	-	-
PC7. position and set out formwork manually or by mechanical means as per instructions/drawing and requirement	-	-	-	-
PC8. use appropriate methods/ tools for levelling of the formwork such as water level pipe, dumpy level, auto level or laser levelling machine	-	-	-	-
PC9. position and provide necessary support to the formwork using props or other appropriate components based on system used	-	-	-	-
PC10. check for block-outs and cast-in services at specified locations	-	-	-	-
PC11. plug all openings and gaps using foam sheet and adhesive tape or other appropriate materials	-	-	-	-
PC12. ensure water tightness of form by providing form sheet or necessary packing material	-	-	-	-
PC13. position and fix props properly and check for plumb, position and spacing as specified or instructed	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. provide horizontal or vertical construction joints in case of structural element such as beam , column, slab as per standard practices	-	-	-	-
PC15. ensure tightness of tie rods, supports, and bracings	-	-	-	-
PC16. check that line, level, alignment and plumb of the erected formwork is within tolerance limit	-	-	-	-
PC17. check the linear or angular dimensions for accuracy and take necessary corrective measures if required	-	-	-	-
<i>Dismantle system formwork</i>	9	21	-	-
PC18. plan sequence of dismantling procedure as per standard practice and system used	-	-	-	-
PC19. remove bracing and all other supports provided to the formwork sequentially and safely as instructed	-	-	-	-
PC20. remove sheathing material sequentially using proper tools and tackles to avoid damage to structure or sheathing materials	-	-	-	-
PC21. dismantle formwork shutters manually or by mechanical means as per requirement	-	-	-	-
PC22. repair, clean and stack all the formwork materials/ components after dismantling	-	-	-	-
NOS Total	30	70	-	-



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National Occupational Standards (NOS) Parameters

NOS Code	CON/N0303
NOS Name	Assemble and dismantle system formwork for R.C.C structures
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Scaffolding
NSQF Level	4
Credits	6
Version	3.0
Last Reviewed Date	NA
Next Review Date	31/03/2026
NSQF Clearance Date	31/03/2022



Qualification Pack

CON/N0315: Assemble and dismantle conventional shuttering / formwork for RCC structures

Description

This unit describes the skills and knowledge required to assemble and dismantle conventional shuttering / formwork for RCC structures

Scope

The scope covers the following :

- Assemble conventional shuttering / formwork for R.C.C structures
- Dismantle conventional formwork

Elements and Performance Criteria

Assemble conventional shuttering / formwork for R.C.C structures

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

- PC1.** clean shutter panels prior to use
- PC2.** check suitability of supporting base prior to erection of conventional formwork
- PC3.** check that all tools, materials, components and fixtures are available as per requirements
- PC4.** identify critical areas of the formwork and perform "Dry-mock up" for them as per the given instructions
- PC5.** apply release agents to sheathing material as per specifications and instruction
- PC6.** apply necessary soldier and walling
- PC7.** position and strike box-outs and bolt boxes, grout checks, level controls, angle fillets and features
- PC8.** use appropriate methods/ tools for levelling the formwork such as water level pipe, dumpy level, auto level or laser levelling machine
- PC9.** position and provide necessary support using runner pieces , timber , props, tie systems appropriately
- PC10.** brace formwork support as per requirements and specifications
- PC11.** ensure water tightness of form by providing form sheet or appropriate packing material
- PC12.** check for proper fixing of tie rods, supports, bracings after erection
- PC13.** plug all openings and gaps using foam sheet and adhesive tape
- PC14.** check erected formwork for line, level, alignment within tolerance limit and provided supports
- PC15.** check the linear and angular dimension for the accuracy and take necessary corrective action if required

Dismantle conventional formwork

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

- PC16.** plan sequence of dismantling procedure for the conventional formwork as per standard practice



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- PC17.** remove bracing and all other supports sequentially and safely as instructed
- PC18.** dismantle formwork shutters manually or by mechanical means as per the requirements
- PC19.** repair, clean and stack all the formwork materials/ components after dismantling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedure for shuttering works
- KU2.** safety rules and regulations for handling and storing relevant tools, equipment, and materials required for relevant works in accordance with organizational norms
- KU3.** importance of personal protection including the use of related safety gears & equipment in accordance with organizational norms
- KU4.** service request procedures for tools, materials and equipment as per organizational norms
- KU5.** procedure for maintenance of tools and equipment
- KU6.** basic principles of measurement, geometry and arithmetic calculations
- KU7.** units of measurements and conversion of units
- KU8.** how to select & use different carpentry tools and materials
- KU9.** standard size of all carpentry tools, materials and components
- KU10.** how to erect and brace formwork
- KU11.** different types of material used in conventional shuttering , their selection and use
- KU12.** how to erect conventional staging using bamboo, ballies, pipe & coupler
- KU13.** different types of pipes, coupler, tying thread and other fixtures used in conventional staging works
- KU14.** how to tie different types of knots and use of knots for connection between bamboos and ballies
- KU15.** properties and application of release agents
- KU16.** how to check for plumb, level and alignment
- KU17.** how to work with timber and non-timber based sheet materials for conventional formwork
- KU18.** how to position or attach tie systems, soldiers and walling
- KU19.** maximum tolerance limits for shuttering of various types of structures

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.** read sketches/routine work drawings, instructions provided for the work, and various signboards, safety rules, safety tags, exit route information in one or more languages, preferably in the local language of the site
- GS3.** speak in one or more language, preferably one of the local language at the site
- GS4.** communicate orally and effectively with team members
- GS5.** analyze the safety aspect of the workplace



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- GS6.** plan work and organize required resource effectively
- GS7.** complete work as per agreed time schedule and quality parameters
- GS8.** resolve any conflict within the teammates
- GS9.** evaluate the complexity of the tasks
- GS10.** identify any violation of safety norms during the work



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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble conventional shuttering / formwork for R.C.C structures</i>	21	49	-	-
PC1. clean shutter panels prior to use	-	-	-	-
PC2. check suitability of supporting base prior to erection of conventional formwork	-	-	-	-
PC3. check that all tools, materials, components and fixtures are available as per requirements	-	-	-	-
PC4. identify critical areas of the formwork and perform "Dry-mock up" for them as per the given instructions	-	-	-	-
PC5. apply release agents to sheathing material as per specifications and instruction	-	-	-	-
PC6. apply necessary soldier and walling	-	-	-	-
PC7. position and strike box-outs and bolt boxes, grout checks, level controls, angle fillets and features	-	-	-	-
PC8. use appropriate methods/ tools for levelling the formwork such as water level pipe, dumpy level, auto level or laser levelling machine	-	-	-	-
PC9. position and provide necessary support using runner pieces , timber , props, tie systems appropriately	-	-	-	-
PC10. brace formwork support as per requirements and specifications	-	-	-	-
PC11. ensure water tightness of form by providing form sheet or appropriate packing material	-	-	-	-
PC12. check for proper fixing of tie rods, supports, bracings after erection	-	-	-	-
PC13. plug all openings and gaps using foam sheet and adhesive tape	-	-	-	-



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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. check erected formwork for line, level, alignment within tolerance limit and provided supports	-	-	-	-
PC15. check the linear and angular dimension for the accuracy and take necessary corrective action if required	-	-	-	-
<i>Dismantle conventional formwork</i>	9	21	-	-
PC16. plan sequence of dismantling procedure for the conventional formwork as per standard practice	-	-	-	-
PC17. remove bracing and all other supports sequentially and safely as instructed	-	-	-	-
PC18. dismantle formwork shutters manually or by mechanical means as per the requirements	-	-	-	-
PC19. repair, clean and stack all the formwork materials/ components after dismantling	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0315
NOS Name	Assemble and dismantle conventional shuttering / formwork for RCC structures
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Scaffolding
NSQF Level	4
Credits	6
Version	3.0
Last Reviewed Date	NA
Next Review Date	31/03/2026
NSQC Clearance Date	31/03/2022

Assessment Guidelines and Assessment Weightage

Assessment Guidelines

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC)/ Element will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC/ Element.
2. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on assessment criteria.
5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.
6. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.



Qualification Pack

7. The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8. After the certain number of iterations as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
9. 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 timeframe set by SSC.
10. Minimum duration of Assessment of each QP shall be of 4hrs/trainee.

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/N0302.Make wooden shutters used in shuttering carpentry	30	70	0	0	100	20
CON/N0304.Carry out quality check for shuttering works	30	70	0	0	100	15
CON/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	-	-	100	10
CON/N8002.Plan and organize work to meet expected outcomes	30	70	-	-	100	10
CON/N9001.Work according to personal health, safety and environment protocols at construction site	30	70	-	-	100	10
DGT/VSQ/N0102.Employability Skills (60 Hours)	20	30	0	0	50	5
Total	170	380	0	0	550	70



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Elective: 1 System

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0303.Assemble and dismantle system formwork for R.C.C structures	30	70	0	0	100	30
Total	30	70	-	-	100	30

Elective: 2 Conventional

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0315.Assemble and dismantle conventional shuttering / formwork for RCC structures	30	70	0	0	100	30
Total	30	70	-	-	100	30



Qualification Pack

Acronyms

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



Qualification Pack

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.



Qualification Pack

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>