



Chargehand Shuttering Carpenter (Elective: System Formwork/ Conventional Formwork)

Electives: System Formwork/ Conventional Formwork

QP Code: CON/Q3002

Version: 1.0

NSQF Level: 4



Qualification Pack

Construction Skill Development Council of India || CPB 103 & 104 (1st Floor), Block 4B, DLF Corporate Park, Phase III, MG Road
Gurgaon-122002



Qualification Pack

Contents

CON/Q3002: Chargehand Shuttering Carpenter (Elective: System Formwork/ Conventional Formwork)	
.....	4
<i>Brief Job Description</i>	4
Applicable National Occupational Standards (NOS)	4
<i>Compulsory NOS</i>	4
<i>Elective 1: System Formwork</i>	4
<i>Elective 2: Conventional Formwork</i>	4
<i>Qualification Pack (QP) Parameters</i>	5
CON/N8001: Work effectively in a team to deliver desired results at the workplace	6
CON/N8002: Plan and organize work to meet expected outcomes	10
CON/N9001: Work according to personal health, safety and environment protocols at construction site	15
CON/N0316: Assemble and dismantle system formwork for complex RCC structure	21
CON/N0317: Assemble and dismantle system formwork for pre-cast segments and form finished R.C.C structures	27
CON/N0318: Erect and dismantle jump form system	34
CON/N0319: Erect and dismantle conventional formwork for heavy civil construction works	39
Assessment Guidelines and Weightage	45
<i>Assessment Guidelines</i>	45
<i>Assessment Weightage</i>	46
Acronyms	48
Glossary	49



Qualification Pack

CON/Q3002: Chargehand Shuttering Carpenter (Elective: System Formwork/ Conventional Formwork)

Brief Job Description

Chargehand shuttering carpenter is responsible for assembling and dismantling formwork for complex and critical works including staircase, landing, ramps, inclined structures, curved or circular structures, moulds/frames for Pre-cast segments, form finished R.C.C structures and jump form system and conventional shuttering

Personal Attributes

The chargehand shuttering carpenter 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/N8001: Work effectively in a team to deliver desired results at the workplace](#)
2. [CON/N8002: Plan and organize work to meet expected outcomes](#)
3. [CON/N9001: Work according to personal health, safety and environment protocols at construction site](#)

Electives (mandatory to select at least one):

Elective 1: System Formwork

This person performs the assembling and dismantling of system formwork for complex and critical works

1. [CON/N0316: Assemble and dismantle system formwork for complex RCC structure](#)
2. [CON/N0317: Assemble and dismantle system formwork for pre-cast segments and form finished R.C.C structures](#)
3. [CON/N0318: Erect and dismantle jump form system](#)

Elective 2: Conventional Formwork

This person performs erection and dismantling of conventional formwork for heavy civil construction works



Qualification Pack

1. [CON/N0319: Erect and dismantle conventional formwork for heavy civil construction works](#)

Qualification Pack (QP) Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Shuttering Carpentry
Country	India
NSQF Level	4
Aligned to NCO/ISCO/ISIC Code	NCO-2015/9313.99
Minimum Educational Qualification & Experience	8th Class (ITI (2 years)) with 2 Years of experience in same occupation OR 10th Class with 2 Years of experience in same occupation OR Certificate-NSQF (level 3) with 2 Years of experience in same occupation
Minimum Level of Education for Training in School	
Pre-Requisite License or Training	NIL
Minimum Job Entry Age	18 Years
Last Reviewed On	31/03/2022
Next Review Date	31/03/2025
NSQC Approval Date	31/03/2022
Version	1.0
Reference code on NQR	2022/CON/CSDCI/05608
NQR Version	1.0



Qualification Pack

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



Qualification Pack

- 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



Qualification Pack

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	-	-



Qualification Pack

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	TBD
Version	6.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

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)



Qualification Pack

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



Qualification Pack

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	-	-	-	-



Qualification Pack

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	-	-



Qualification Pack

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	TBD
Version	5.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

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



Qualification Pack

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



Qualification Pack

- 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



Qualification Pack

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	-	-	-	-



Qualification Pack

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	-	-



Qualification Pack

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	TBD
Version	6.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

CON/N0316: Assemble and dismantle system formwork for complex RCC structure

Description

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

Scope

The scope covers the following :

- Assemble system formwork for complex RCC structures (Staircase, landing, ramps, inclined structures, curved or circular structures)
- Dismantle system formwork for complex RCC structures

Elements and Performance Criteria

Assemble system formwork for complex RCC structures (Staircase, landing, ramps, inclined structures, curved or circular structures)

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

- PC1.** interpret the drawings, schedules, and work method statements
- PC2.** check that different types of plywood and timbers are compliant with the required specifications
- PC3.** check the availability of all the required tools, materials, and components
- PC4.** check for the completion of the preparatory works such as marking, staging, etc.
- PC5.** check the availability of the required fixings and fasteners based on the system formwork used
- PC6.** set up formwork manually or mechanically as per instructions/ specification
- PC7.** check that profile of the shutter panels is as per the required shape of the structure
- PC8.** use appropriate methods/ tools such as water level pipe, dumpy level, auto level or laser levelling machine for levelling of the formwork
- PC9.** provide the necessary support to the formwork using props or other appropriate components based on the type of system used
- PC10.** plug all openings and gaps using foam sheet and adhesive tape or other appropriate materials
- PC11.** check working platform for safety
- PC12.** check that the erected formwork's line, level, and alignment are within the tolerance limits
- PC13.** check the dimensional accuracy and right angle for the shutters and take corrective measures as per requirement
- PC14.** obtain approval from the seniors upon checking and verification of the completed shuttering works and take suggested corrective actions as per requirement

Dismantle system formwork for complex RCC structures

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



Qualification Pack

- PC15.** follow dismantling procedure /standard practice as per system used
- PC16.** dismantle system formwork ensuring stripping time as per IS (Indian standard)/international code for different types of structures
- PC17.** remove bracing and all other support sequentially and safely as instructed
- PC18.** remove sheathing material sequentially using proper tools and tackles to avoid damage to structure or sheathing materials
- PC19.** remove formwork shutters manually or by mechanical means as per requirement, basis shutter size
- PC20.** ensure that all the small components are staked properly for further use
- PC21.** replace/repair formwork material if required and ensure cleaning and proper staking after dismantling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for shuttering and formwork for in situ and pre cast construction
- KU2.** safety rules and regulation for handling and storing relevant carpentry tools, equipment and materials
- KU3.** importance of personal protection including the use of relevant safety gears & equipment
- KU4.** service request procedures for tools, materials and equipment
- KU5.** procedure for layout of formwork as per drawing for complex structure such as staircase, landing, ramps, inclined structures, curved or circular structures)
- KU6.** how to read plan, elevation and sectional drawing relevant to task
- KU7.** basic principles of measurement, conversion of units , basic geometric and arithmetic calculation
- KU8.** different types of measurements and marking tools
- KU9.** how to select and use different types of formwork tools
- KU10.** standard size of all formwork tools, material and components
- KU11.** use of water level tube
- KU12.** major types of system formwork and their appropriate applications
- KU13.** how to erect and brace major types of formwork as per site requirements
- KU14.** properties and application of release agents
- KU15.** standard tolerance of shuttering works
- KU16.** checklist for shuttering work
- KU17.** how to check for line, level and alignment requirement
- KU18.** preventive and corrective action to ensure formwork meets the required standard of quality
- KU19.** manufacturer's specification/ instructions for erecting and dismantling formwork
- KU20.** how to physically/ visually check for level, compaction of ground surface
- KU21.** use of tools and equipments required in earthworks
- KU22.** standard practices for housekeeping sequence and prioritizing of activities
- KU23.** basics of reinforcement work



Qualification Pack

KU24. basics of concreting works

KU25. basics of scaffolding works

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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble system formwork for complex RCC structures (Staircase, landing, ramps, inclined structures, curved or circular structures)</i>	23	52	-	-
PC1. interpret the drawings, schedules, and work method statements	-	-	-	-
PC2. check that different types of plywood and timbers are compliant with the required specifications	-	-	-	-
PC3. check the availability of all the required tools, materials, and components	-	-	-	-
PC4. check for the completion of the preparatory works such as marking, staging, etc.	-	-	-	-
PC5. check the availability of the required fixings and fasteners based on the system formwork used	-	-	-	-
PC6. set up formwork manually or mechanically as per instructions/ specification	-	-	-	-
PC7. check that profile of the shutter panels is as per the required shape of the structure	-	-	-	-
PC8. use appropriate methods/ tools such as water level pipe, dumpy level, auto level or laser levelling machine for levelling of the formwork	-	-	-	-
PC9. provide the necessary support to the formwork using props or other appropriate components based on the type of system used	-	-	-	-
PC10. plug all openings and gaps using foam sheet and adhesive tape or other appropriate materials	-	-	-	-
PC11. check working platform for safety	-	-	-	-
PC12. check that the erected formwork's line, level, and alignment are within the tolerance limits	-	-	-	-
PC13. check the dimensional accuracy and right angle for the shutters and take corrective measures as per requirement	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. obtain approval from the seniors upon checking and verification of the completed shuttering works and take suggested corrective actions as per requirement	-	-	-	-
<i>Dismantle system formwork for complex RCC structures</i>	7	18	-	-
PC15. follow dismantling procedure /standard practice as per system used	-	-	-	-
PC16. dismantle system formwork ensuring stripping time as per IS (Indian standard)/international code for different types of structures	-	-	-	-
PC17. remove bracing and all other support sequentially and safely as instructed	-	-	-	-
PC18. remove sheathing material sequentially using proper tools and tackles to avoid damage to structure or sheathing materials	-	-	-	-
PC19. remove formwork shutters manually or by mechanical means as per requirement, basis shutter size	-	-	-	-
PC20. ensure that all the small components are staked properly for further use	-	-	-	-
PC21. replace/repair formwork material if required and ensure cleaning and proper staking after dismantling	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0316
NOS Name	Assemble and dismantle system formwork for complex RCC structure
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Shuttering Carpentry
NSQF Level	4
Credits	TBD
Version	3.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

CON/N0317: Assemble and dismantle system formwork for pre-cast segments and form finished R.C.C structures

Description

This unit describes the skills and knowledge required to assemble and dismantle system formwork for pre-cast segments and form finished R.C.C structures.

Scope

The scope covers the following :

- Assemble and dismantle moulds/frames for pre-cast segments
- Assemble and dismantle system formwork for form finished structures

Elements and Performance Criteria

Assemble and dismantle moulds/frames for pre-cast segments

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

- PC1.** read assembly drawings and work method statements
- PC2.** interpret sketches related to fixing sequence and method for assembling moulds and frames
- PC3.** check the availability of materials, tools, details and method statement before assembling moulds or frames for pre-cast work
- PC4.** position, assemble, prop and secure shutter panels as per approved workshop drawing and profile requirement
- PC5.** apply release agent uniformly as per instructed method
- PC6.** fix all other accessories of external vibration for compacting concrete, if required
- PC7.** check for proper alignment and geometric accuracy of shutters
- PC8.** fix block out and cast-in-services as per marking and design requirement and check their positions after fixing
- PC9.** check the assembly for rigidity
- PC10.** ensure joints are water tight by providing form sheets or necessary packing material
- PC11.** fix build-in components , void formers, box-outs and confirm their positions as per drawings
- PC12.** report to superior for completion and checking of shuttering and carry out suggested rework
- PC13.** dismantle moulds/frames sequentially
- PC14.** use proper tools and tackles to ensure structure or sheathing material is not damaged

Assemble and dismantle system formwork for form finished structures

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

- PC15.** check the availability of all tools, materials, components as per requirement
- PC16.** check that forms are free from spillages, rust marks and stains
- PC17.** check that formwork panels are of same size and forms a regular pattern
- PC18.** check that holes left by formwork ties and components in concrete surfaces are in line horizontally and vertically and form a regular pattern



Qualification Pack

- PC19.** check that chamfers are provided for all external angles of 90 degree
- PC20.** check that joints between formwork panels are tightly sealed with foamed rubber strips
- PC21.** ensure that gap between the panels is not greater than 1 mm and the sealing strips does not protrude from the surface of the formwork panels
- PC22.** apply release agent uniformly as per instructed method or as per form finished requirement
- PC23.** position and set out formwork manually or by mechanical means as per instructions and requirement
- PC24.** check that profiling of shutters panels conforms to the required shape of structure
- PC25.** position and provide necessary support using props or other appropriate components based on system used
- PC26.** check for proper alignment and geometric accuracy of forms
- PC27.** fix build-in components, void formers and box-outs in positions as per drawings
- PC28.** check the assembly for rigidity and ensure joints between formwork panel, stop ends and adjoining concrete are tight and do not permit grout loss
- PC29.** report to superior for completion and checking of shuttering and carry out suggested rework
- PC30.** dismantle moulds/frames sequentially
- PC31.** use proper tools and tackles to ensure structure or sheathing material is not damaged

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for shuttering and formwork for in situ and pre cast construction
- 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
- KU5.** procedure for assembling and dismantling moulds/frames for precast structures
- KU6.** how to read plan, elevation and sectional drawing relevant to task
- KU7.** basic principles of measurement, conversion of units, basic geometric and arithmetic calculation
- KU8.** use of different types of measurements and marking tools
- KU9.** standard size of all formwork tools, material and components
- KU10.** use of consumables
- KU11.** properties and application of release agents required for precast & form finished structures
- KU12.** how to use different types of hand tools for fixing moulds/frames and form finished shutters
- KU13.** importance of preventing grout loss caused by leakage
- KU14.** standard tolerance of shuttering works
- KU15.** checklist for shuttering work
- KU16.** how to check for line, level and alignment requirement
- KU17.** importance of finishing in case of form finish concrete



Qualification Pack

- KU18.** preparation of shutters for form finish concrete structure
- KU19.** types of material used for making shutters for form finished concrete
- KU20.** stripping time as per IS/International code

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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble and dismantle moulds/frames for pre-cast segments</i>	15	35	-	-
PC1. read assembly drawings and work method statements	-	-	-	-
PC2. interpret sketches related to fixing sequence and method for assembling moulds and frames	-	-	-	-
PC3. check the availability of materials, tools, details and method statement before assembling moulds or frames for pre-cast work	-	-	-	-
PC4. position, assemble, prop and secure shutter panels as per approved workshop drawing and profile requirement	-	-	-	-
PC5. apply release agent uniformly as per instructed method	-	-	-	-
PC6. fix all other accessories of external vibration for compacting concrete, if required	-	-	-	-
PC7. check for proper alignment and geometric accuracy of shutters	-	-	-	-
PC8. fix block out and cast-in-services as per marking and design requirement and check their positions after fixing	-	-	-	-
PC9. check the assembly for rigidity	-	-	-	-
PC10. ensure joints are water tight by providing form sheets or necessary packing material	-	-	-	-
PC11. fix build-in components , void formers, box-outs and confirm their positions as per drawings	-	-	-	-
PC12. report to superior for completion and checking of shuttering and carry out suggested rework	-	-	-	-
PC13. dismantle moulds/frames sequentially	-	-	-	-
PC14. use proper tools and tackles to ensure structure or sheathing material is not damaged	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Assemble and dismantle system formwork for form finished structures</i>	15	35	-	-
PC15. check the availability of all tools, materials, components as per requirement	-	-	-	-
PC16. check that forms are free from spillages, rust marks and stains	-	-	-	-
PC17. check that formwork panels are of same size and forms a regular pattern	-	-	-	-
PC18. check that holes left by formwork ties and components in concrete surfaces are in line horizontally and vertically and form a regular pattern	-	-	-	-
PC19. check that chamfers are provided for all external angles of 90 degree	-	-	-	-
PC20. check that joints between formwork panels are tightly sealed with foamed rubber strips	-	-	-	-
PC21. ensure that gap between the panels is not greater than 1 mm and the sealing strips does not protrude from the surface of the formwork panels	-	-	-	-
PC22. apply release agent uniformly as per instructed method or as per form finished requirement	-	-	-	-
PC23. position and set out formwork manually or by mechanical means as per instructions and requirement	-	-	-	-
PC24. check that profiling of shutters panels conforms to the required shape of structure	-	-	-	-
PC25. position and provide necessary support using props or other appropriate components based on system used	-	-	-	-
PC26. check for proper alignment and geometric accuracy of forms	-	-	-	-
PC27. fix build-in components, void formers and box-outs in positions as per drawings	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC28. check the assembly for rigidity and ensure joints between formwork panel, stop ends and adjoining concrete are tight and do not permit grout loss	-	-	-	-
PC29. report to superior for completion and checking of shuttering and carry out suggested rework	-	-	-	-
PC30. dismantle moulds/frames sequentially	-	-	-	-
PC31. use proper tools and tackles to ensure structure or sheathing material is not damaged	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0317
NOS Name	Assemble and dismantle system formwork for pre-cast segments and form finished R.C.C structures
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Shuttering Carpentry
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

CON/N0318: Erect and dismantle jump form system

Description

This unit describes the skills and knowledge required to erect and dismantle jump form system

Scope

The scope covers the following :

- Set out and assemble jump form system
- De-shutter and jump/move the formwork system to the next level

Elements and Performance Criteria

Set out and assemble jump form system

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

- PC1.** interpret assembling drawings and work method statement of the jump formwork system
- PC2.** check the availability of all tools, materials, and components as per requirement
- PC3.** check the starters/ fixing marks/ set out points for the installation of jump formwork system as per the instruction of superior
- PC4.** set out jump form system as per drawing
- PC5.** erect, fix, and align the shutters at the specified location as per structural drawing/ layout
- PC6.** install shear key as per manufacturer's specification
- PC7.** fix platforms and assembly into core formworks as per manufacturer's specification
- PC8.** install hydraulic system, power units and accessories as per manufacturer's specifications and standards, for lifting purpose
- PC9.** install penetration, block-out and cast-in services as per drawings
- PC10.** check that wall form shutter, working platform, lifting arrangement and other accessories are installed as per manufacturer's specifications
- PC11.** report to superiors for completion of work and checking of shuttering for their approval and allowing concreting team for concrete casting

De-shutter and jump/move the formwork system to the next level

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

- PC12.** carry out the de-shuttering and move the whole jump formwork setup to next level using cranes or hydraulics
- PC13.** install the form shutters and other components as per the system of the jump formwork
- PC14.** install trailing screens and working platforms at required levels
- PC15.** dismantle jump form system after the concreting, at all required levels are completed, as per manufacturer's specifications and standard practices

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:



Qualification Pack

- KU1.** standard procedure for erecting and dismantling jump form system
- 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
- KU5.** types of Jump form system/ specialized formwork system such as slip form, jump form system
- KU6.** schematic installation & working drawing
- KU7.** preparatory works for installation of Jump form system
- KU8.** profiling of formwork as per required shape of structure
- KU9.** how to check plumb and take corrective action
- KU10.** use of fixtures, connection
- KU11.** use of tools, tackles, components & equipment for installation of Jump form system
- KU12.** use of anchor cones, ties, sleeves
- KU13.** manufacturers instructions/specification for Jump form system
- KU14.** preventive and corrective action to ensure formwork meets the required standards of quality
- KU15.** types and application of advance formwork system and their applications for basic and complex structures
- KU16.** types of cranes and hydraulic jacks used for lifting of Jump form system
- KU17.** basics of reinforcement works
- KU18.** basics of concreting works
- KU19.** weight of different components, assembled panels

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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Set out and assemble jump form system</i>	21	49	-	-
PC1. interpret assembling drawings and work method statement of the jump formwork system	-	-	-	-
PC2. check the availability of all tools, materials, and components as per requirement	-	-	-	-
PC3. check the starters/ fixing marks/ set out points for the installation of jump formwork system as per the instruction of superior	-	-	-	-
PC4. set out jump form system as per drawing	-	-	-	-
PC5. erect, fix, and align the shutters at the specified location as per structural drawing/ layout	-	-	-	-
PC6. install shear key as per manufacturer's specification	-	-	-	-
PC7. fix platforms and assembly into core formworks as per manufacturer's specification	-	-	-	-
PC8. install hydraulic system, power units and accessories as per manufacturer's specifications and standards, for lifting purpose	-	-	-	-
PC9. install penetration, block-out and cast-in services as per drawings	-	-	-	-
PC10. check that wall form shutter, working platform, lifting arrangement and other accessories are installed as per manufacturer's specifications	-	-	-	-
PC11. report to superiors for completion of work and checking of shuttering for their approval and allowing concreting team for concrete casting	-	-	-	-
<i>De-shutter and jump/move the formwork system to the next level</i>	9	21	-	-
PC12. carry out the de-shuttering and move the whole jump formwork setup to next level using cranes or hydraulics	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC13. install the form shutters and other components as per the system of the jump formwork	-	-	-	-
PC14. install trailing screens and working platforms at required levels	-	-	-	-
PC15. dismantle jump form system after the concreting, at all required levels are completed, as per manufacturer's specifications and standard practices	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0318
NOS Name	Erect and dismantle jump form system
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Shuttering Carpentry
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
NSQC Clearance Date	31/03/2022



Qualification Pack

CON/N0319: Erect and dismantle conventional formwork for heavy civil construction works

Description

This unit describes the skills and knowledge required to erect and dismantle conventional formwork for heavy civil construction works

Scope

The scope covers the following :

- Erect staging using steel trestles
- Carry out shuttering work using steel beams, channel sections/ truss and steel shuttering sheets
- Dismantle formwork in a safe manner

Elements and Performance Criteria

Erect staging using steel trestles

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

- PC1.** interpret drawings, schedule, and work method statements
- PC2.** ensure all tools, materials, components are available as per requirements
- PC3.** identify different types of plywood and timber with their specifications and suitable checks
- PC4.** check to ensure that all preparatory works prior to staging erection such as marking, staging are completed
- PC5.** check that fixing & fasteners are available as per requirement and are fit for use
- PC6.** prepare RCC base/ check base and bolting for erection of trestles
- PC7.** check and confirm suitability/stability of the foundation/structure on which the staging is to be erected
- PC8.** place, position and fix trestle at marked location manually/mechanically as per drawings/working instructions
- PC9.** fix trestle at marked location by providing suitable bolting
- PC10.** check plumb for first level of erection of trestles
- PC11.** place and fix trestle as per marking and fixing method as provided in drawing and provide necessary support
- PC12.** provide horizontal and diagonal bracing by welding or bolting with steel section or any other suitable method as instructed
- PC13.** check for line, level and alignment and support of erected staging

Carry out shuttering work using steel beams, channel sections/ truss and steel shuttering sheets

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

- PC14.** place and position steel beam/channel section/ truss as Primary beam for shuttering with the help of crane and fix by tack welding or by bolting
- PC15.** place and position steel beam/channel section/ truss as secondary beam for shuttering with the help of crane and fix by tack welding or by bolting



Qualification Pack

- PC16.** place and fix steel shuttering sheets/ sheeting material as per drawing and working instructions
- PC17.** check for line, level and alignment and support of staging and shuttering
- PC18.** check for dimensional accuracy of shuttering works
- PC19.** complete work within the allocated time , with quality and safety
- PC20.** report to superior for completion and checking of shuttering and carry out suggested rework

Dismantle formwork in a safe manner

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

- PC21.** follow dismantling procedure as per working instructions and standard practices
- PC22.** dismantle trestle staging ensuring stripping time as per IS/International code for different types of structures and as per applicability
- PC23.** remove wedge from bottom of shuttering sheets
- PC24.** remove shuttering sheets, channel sections, steel beams, steel truss and other support sequentially and safely as per working instructions
- PC25.** lower down shuttering materials manually/ mechanically with the help of crane as per applicability
- PC26.** dismantle trestle staging by cutting tack welding/unscrewing bolts and nuts
- PC27.** ensure that all the small components are stacked properly for further use
- PC28.** replace damaged material and components if required and ensure cleaning and proper stacking after dismantling

Knowledge and Understanding (KU)

The individual on the job needs to know and understand:

- KU1.** standard procedures for shuttering and formwork for in-situ and pre-cast construction
- KU2.** safety rules and regulation for handling and storing relevant carpentry tools, equipment and materials
- KU3.** importance of personal protection including the use of relevant safety gears and equipment
- KU4.** service request procedures for tools, materials and equipment as per organizational norms
- KU5.** how to follow proper sequence for dismantling and stacking of form work materials
- KU6.** how to provide facilities like IPs, hooks in the permanent structures for lowering staging and shuttering materials
- KU7.** how to barricade the area properly while carrying out the dismantling operation
- KU8.** adequate safety measures for fire protection while cutting the material and also while working in restricted location
- KU9.** how to use standard tools and tackles for carrying out the dismantling operation
- KU10.** procedure for layout of formwork as per drawing for heavy civil construction works
- KU11.** how to read plan, elevation and sectional drawing relevant to task
- KU12.** basic principles of measurement, conversion of units , basic geometric and arithmetic calculation
- KU13.** different types of measurements and marking tools
- KU14.** how to select and use different types of formwork tools



Qualification Pack

- KU15.** standard size of all formwork tools, material and components
- KU16.** use of water level tube
- KU17.** how to erect and brace steel trestles
- KU18.** procedure for tack welding and bolting
- KU19.** properties and application of release agents
- KU20.** standard tolerance of shuttering works
- KU21.** checklist for shuttering work
- KU22.** how to check for line, level and alignment requirement
- KU23.** preventive and corrective action to ensure formwork meets the required standards of quality
- KU24.** how to physically/ visually check for level, compaction of ground surface
- KU25.** basics of reinforcement work
- KU26.** basics of concreting works
- KU27.** basics of scaffolding works

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



Qualification Pack

Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Erect staging using steel trestles</i>	12	28	-	-
PC1. interpret drawings, schedule, and work method statements	-	-	-	-
PC2. ensure all tools, materials, components are available as per requirements	-	-	-	-
PC3. identify different types of plywood and timber with their specifications and suitable checks	-	-	-	-
PC4. check to ensure that all preparatory works prior to staging erection such as marking, staging are completed	-	-	-	-
PC5. check that fixing & fasteners are available as per requirement and are fit for use	-	-	-	-
PC6. prepare RCC base/ check base and bolting for erection of trestles	-	-	-	-
PC7. check and confirm suitability/stability of the foundation/structure on which the staging is to be erected	-	-	-	-
PC8. place, position and fix trestle at marked location manually/mechanically as per drawings/working instructions	-	-	-	-
PC9. fix trestle at marked location by providing suitable bolting	-	-	-	-
PC10. check plumb for first level of erection of trestles	-	-	-	-
PC11. place and fix trestle as per marking and fixing method as provided in drawing and provide necessary support	-	-	-	-
PC12. provide horizontal and diagonal bracing by welding or bolting with steel section or any other suitable method as instructed	-	-	-	-
PC13. check for line, level and alignment and support of erected staging	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Carry out shuttering work using steel beams, channel sections/ truss and steel shuttering sheets</i>	12	28	-	-
PC14. place and position steel beam/channel section/ truss as Primary beam for shuttering with the help of crane and fix by tack welding or by bolting	-	-	-	-
PC15. place and position steel beam/channel section/ truss as secondary beam for shuttering with the help of crane and fix by tack welding or by bolting	-	-	-	-
PC16. place and fix steel shuttering sheets/ sheeting material as per drawing and working instructions	-	-	-	-
PC17. check for line, level and alignment and support of staging and shuttering	-	-	-	-
PC18. check for dimensional accuracy of shuttering works	-	-	-	-
PC19. complete work within the allocated time , with quality and safety	-	-	-	-
PC20. report to superior for completion and checking of shuttering and carry out suggested rework	-	-	-	-
<i>Dismantle formwork in a safe manner</i>	6	14	-	-
PC21. follow dismantling procedure as per working instructions and standard practices	-	-	-	-
PC22. dismantle trestle staging ensuring stripping time as per IS/International code for different types of structures and as per applicability	-	-	-	-
PC23. remove wedge from bottom of shuttering sheets	-	-	-	-
PC24. remove shuttering sheets, channel sections, steel beams, steel truss and other support sequentially and safely as per working instructions	-	-	-	-



Qualification Pack

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC25. lower down shuttering materials manually/ mechanically with the help of crane as per applicability	-	-	-	-
PC26. dismantle trestle staging by cutting tack welding/unscrewing bolts and nuts	-	-	-	-
PC27. ensure that all the small components are stacked properly for further use	-	-	-	-
PC28. replace damaged material and components if required and ensure cleaning and proper stacking after dismantling	-	-	-	-
NOS Total	30	70	-	-



Qualification Pack

National Occupational Standards (NOS) Parameters

NOS Code	CON/N0319
NOS Name	Erect and dismantle conventional formwork for heavy civil construction works
Sector	Construction
Sub-Sector	Real Estate and Infrastructure construction
Occupation	Shuttering Carpentry
NSQF Level	4
Credits	TBD
Version	2.0
Last Reviewed Date	31/03/2022
Next Review Date	31/03/2025
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

- 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.
- 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.
- 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.
- 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/N8001.Work effectively in a team to deliver desired results at the workplace	30	70	-	-	100	5
CON/N8002.Plan and organize work to meet expected outcomes	30	70	-	-	100	5
CON/N9001.Work according to personal health, safety and environment protocols at construction site	30	70	-	-	100	15
Total	90	210	-	-	300	25

Elective: 1 System Formwork



Qualification Pack

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0316.Assemble & dismantle system formwork for complex RCC structure	30	70	-	-	100	30
CON/N0317.Assemble & dismantle system formwork for Pre-cast segments & form finished R.C.C structures	30	70	-	-	100	20
CON/N0318.Erect & dismantle jump form system	30	70	-	-	100	25
Total	90	210	-	-	300	75

Elective: 2 Conventional Formwork

National Occupational Standards	Theory Marks	Practical Marks	Project Marks	Viva Marks	Total Marks	Weightage
CON/N0319.Erect & dismantle conventional formwork for heavy civil construction works	30	70	-	-	100	75
Total	30	70	-	-	100	75



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>