

QUALIFICATIONS PACK- OCCUPATIONAL STANDARDS FOR CONSTRUCTION INDUSTRY

What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding



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Introduction

Qualifications Pack – Shuttering Carpenter - System

SECTOR: CONSTRUCTION

SUB-SECTOR: Real Estate and Infrastructure Construction

OCCUPATION: SHUTTERING CARPENTRY

REFERENCE ID: CON/Q0304

ALIGNED TO: NCO-2004/9313.90

This job role performs shuttering for different RCC structural element using system formwork as per drawing.

Brief Job Description: Shuttering Carpenter – System is responsible for making shutters and assembling system formwork for R.C.C structures such as columns, beams, slabs, walls, foundations and other similar structures. The individual should have good knowledge of safe working practices.

Personal Attributes: The individual is expected to be physically fit and should be able to work across various location and height withstanding extreme condition while working. The individual should be organized, diligent, methodical, and able to implement and maintain safety practices. The individual should have independent ability to take quick decisions and have good communication skills and shall be able to work within a team to handle various carpentry tools and materials and work responsibly for own work within the defined limit.

Job Details	Qualifications Pack Code	CON/Q0304		
	Job Role	Shuttering Carpenter – System		
	Credits(NSQF)	TBD	Version number	1.0
	Sector	Construction	Drafted on	07/03/2015
	Sub Sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
	Occupation	Shuttering Carpentry	Next review date	23/03/2017
	NSQC Clearance on	19/05/2015		

Job Role	Shuttering Carpenter – System
Role Description	Responsible for making wooden shutter board and carries out shuttering for column, beam, slab, wall, foundation and other similar structures using system formwork.
NSQF Level	4
Minimum Educational Qualifications*	Preferably 5 th standard
Maximum Educational Qualifications*	N.A
Training (Suggested but not mandatory)	Recommended training period of 8 to 12 weeks as per QP of Shuttering Carpenter – System Normal literacy of reading, writing and understanding
Minimum Job Entry Age	18 years
Experience	Desirable: <ol style="list-style-type: none"> 1. Non trained worker : 5 years site experience in same occupation 2. Trained worker : 2 years site experience as a certified Assistant shuttering carpenter
Applicable National Occupational Standards (NOS)	Compulsory: <ol style="list-style-type: none"> 1. CON/N0302: Make wooden shutters used in shuttering carpentry 2. CON/N0303: Assemble and dismantle system formwork for RCC structures 3. CON/N0304: Carry out quality checks for shuttering works 4. CON/N8001: Work effectively in a team to deliver desired results at the workplace 5. CON/N8002: Plan and organize work to meet expected outcomes

	<p>6. CON/N9001: Work according to personal health, safety and environment protocol at construction site</p> <p>Optional:</p> <p>N.A</p>
Performance Criteria	As described in the relevant OS units

Definitions

Keywords / Terms	Description
Sector	Sector is 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 organization.
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 they need to meet the standard consistently. Occupational Standards are applicable both in the Indian contexts.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack (QP)	Qualifications Pack comprises the set of OS, together with the educational, training and other criteria required to perform a job role. A Qualification Pack is assigned a unique qualification pack code
Qualification Pack Code	Qualification Pack Code is a unique reference code that identifies a qualifications pack.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context.
Scope	Scope is the 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 the quality of performance required.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard
Organizational Context	Organizational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Core Skills / Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working 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.

Acronyms

Keywords /Terms	Description
CON	Construction
NSQF	National Skill Qualifications Framework
QP	Qualification Pack
OS	Occupational Standards
TBD	To Be Decided

CON/N0302

Make wooden shutters used in shuttering carpentry

National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman for making shutters used in shuttering carpentry.

CON/N0302

Make wooden shutters used in shuttering carpentry

National Occupational Standard

Unit Code	CON/N0302
Unit Title (Task)	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	<p>The scope covers the following:</p> <ul style="list-style-type: none"> • Use hand and power tools for cutting, sizing and planning of timber and plywood • Make wooden shutter panel board
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Use hand and power tools for cutting, sizing and planning of timber and plywood	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. select and use regular hand tools such as hand saw, chisel, jack hammer, nailing hammer, hand drill and other tools efficiently</p> <p>PC2. select and use power tools such as circular saw, hand drill machine, table mounted saw, planning machine and power drilling machine for cutting, sizing and planning of timber and plywood efficiently</p> <p>PC3. maintain correct body posture while operating the machine</p> <p>PC4. maintain, handle, store and upkeep all relevant tools and their basic maintenance</p>
Make wooden shutter panel board	<p>PC5. carry out visual check to ensure that timber, plywood are as per quality and requirements for making shutters</p> <p>PC6. check that all fixtures, consumables and materials are available for shutter making</p> <p>PC7. make use of measurement and marking tools for marking on plywood and timber</p> <p>PC8. measure and mark form sheathing and stiffeners according to instructions and sketches</p> <p>PC9. cut form sheathing material (plywood) and stiffeners (timber) within the tolerance limit and as per instructions / specification</p> <p>PC10. make wooden shutter panels using different types of joints such as dovetail, tennon & mortise, lap joints as per instructions and specifications</p> <p>PC11. smooth corners and edges of panels using appropriate tools</p> <p>PC12. carry out nailing work as per standard practice ensuring rigidity of joints</p> <p>PC13. check and ensure that shutter board dimension is as per sketch</p> <p>PC14. repair already prepared shutters by nailing and strengthening</p>
Knowledge and Understanding (K)	

CON/N0302

Make wooden shutters used in shuttering carpentry

A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: KA1. standard procedure for shuttering works KA2. safety rules and regulation for handling and storing relevant carpentry tools, equipment and materials KA3. personal protection including the use of relevant safety gears & equipments KA4. service request procedures for tools, materials and equipments						
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. basic sketches / schematic working drawing relevant to making shutters, frames and moulds KB2. basic principles of measurement, geometry and arithmetic calculation KB3. linear conversion of units KB4. units of measurements KB5. different types of timber used in shuttering works KB6. how to select & use different carpentry tools and appropriate materials KB7. standard size of all carpentry tools, materials and components KB8. how to mark and lay out form sheathing and stiffeners as per requirements KB9. appropriate methodology for cutting of form sheathing and stiffeners KB10. how to carry out visual check for visual quality of plywood & timber KB11. different types of joints such as dovetail, tennon & mortise, lap joints KB12. use of the measurement and marking tools relevant to formwork carpentry KB13. electrical safety while using power tools for making shutters KB14. handling of hand / power tools and basic maintenance of tools						
Skills (S)							
A. Core Skills/ Generic Skills	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr style="background-color: #e1eef6;"> <td style="text-align: center;">Writing Skills</td> </tr> <tr> <td> The user/ individual on the job needs to know and understand how to: SA1. write in one or more language, preferably the local language at the site </td> </tr> <tr style="background-color: #e1eef6;"> <td style="text-align: center;">Reading Skills</td> </tr> <tr> <td> The user/ individual on the job needs to know and understand how to: SA2. read one or more language, preferably the local language at the site SA3. read /sketches/routine working drawing or instructions provided for the work SA4. read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace </td> </tr> <tr style="background-color: #e1eef6;"> <td style="text-align: center;">Oral Communication (Listening and Speaking skills)</td> </tr> <tr> <td> The user/ individual on the job needs to know and understand how to: SA1. speak in one or more language, preferably one of the local language at site SA2. listen and follow instructions given by the superior </td> </tr> </table>	Writing Skills	The user/ individual on the job needs to know and understand how to: SA1. write in one or more language, preferably the local language at the site	Reading Skills	The user/ individual on the job needs to know and understand how to: SA2. read one or more language, preferably the local language at the site SA3. read /sketches/routine working drawing or instructions provided for the work SA4. read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace	Oral Communication (Listening and Speaking skills)	The user/ individual on the job needs to know and understand how to: SA1. speak in one or more language, preferably one of the local language at site SA2. listen and follow instructions given by the superior
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CON/N0302

Make wooden shutters used in shuttering carpentry

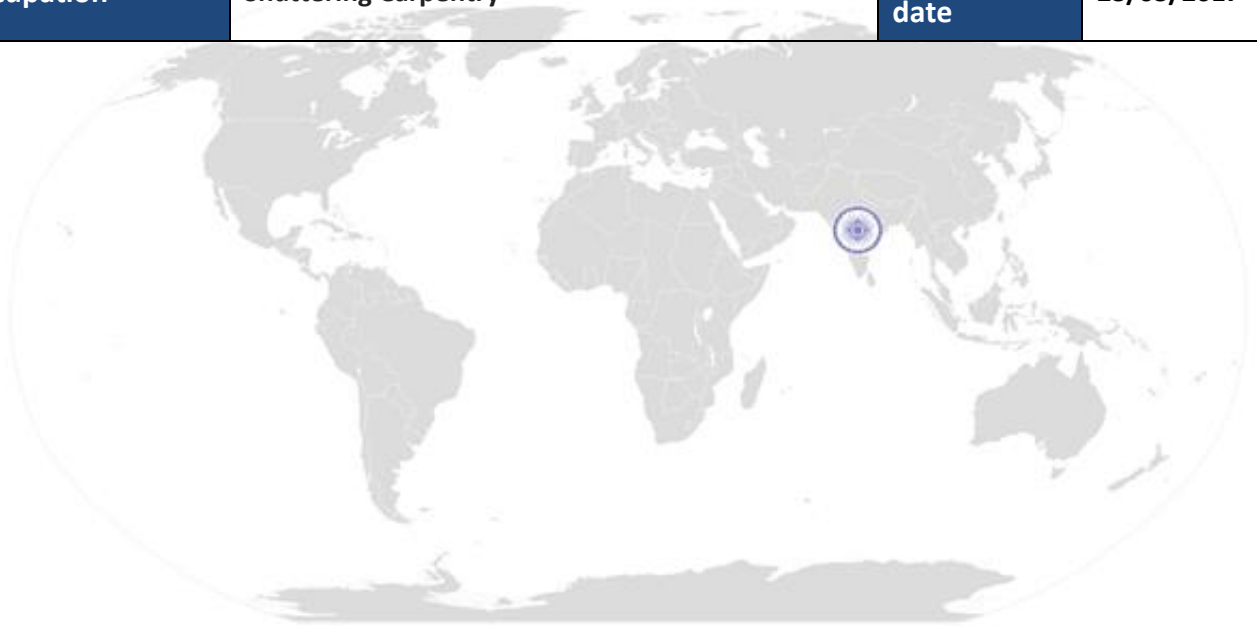
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. decide whether his workplace is safe for working and also his work is not creating hazardous conditions for other
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB2. plan work and organize required resource in coordination with team member and superior
	Customer centricity
	The user/individual on the job needs to know and understand how to: SB3. complete work as per agreed time and quality
	Problem solving
	The user/individual on the job needs to know and understand how to: SB4. rectify any problem related to line, level and alignment of erected formwork SB5. rectify any problem related to making and repairing of shutter board SB6. resolve any conflict within the team
	Analytical Thinking
	The user/ individual on the job needs to know and understand how to: SB7. erect formwork in case of any obstruction, in and around opening or on uneven ground by providing suitable support SB8. optimize resources SB9. minimize wastages SB10. revert to superior for selection/sorting of materials
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB11. evaluate the complexity of the tasks to and seek assistance and support wherever required from the superior SB12. identify and assess how violation of any safety norms may lead to accidents

CON/N0302

Make wooden shutters used in shuttering carpentry

NOS Version Control

NOS Code	CON/N0302		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
Occupation	Shuttering Carpentry	Next review date	23/03/2017



National Occupational Standard



Overview

This NOS covers the skills and knowledge required by a workman for assembling and dismantling system formwork for RCC structures.

CON/N0303

Assemble and dismantle system formwork for RCC structures

National Occupational Standard

Unit Code	CON/N0303
Unit Title (Task)	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: <ul style="list-style-type: none"> • Assemble system formwork for RCC structures • Dismantle system formwork
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Assemble system formwork for R.C.C structures	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. clean the shutter panels before using for shuttering work</p> <p>PC2. check for supporting base for system formwork components</p> <p>PC3. check and ensure all tools, material, components are available as per requirements</p> <p>PC4. check that fixing and fasteners are as per system used and as per the requirements</p> <p>PC5. apply release agents to sheathing material as per specifications and instructions</p> <p>PC6. position and set out formwork manually or by mechanical means as per instructions and requirement</p> <p>PC7. position and provide necessary support using props or other appropriate components based on system used</p> <p>PC8. check for block-outs and cast-in services to specified locations</p> <p>PC9. plug all openings and gaps using foam sheet and adhesive tape or other appropriate materials</p> <p>PC10. ensure water tightness of form by providing form sheet or necessary packing material</p> <p>PC11. position and fix props properly and check for plumb, position and spacing is as specified or instructed</p> <p>PC12. provide horizontal or vertical construction joints in case of structural element such as beam , column, slab as per standard practices</p> <p>PC13. ensure tightness of tie rods, supports, and bracings</p> <p>PC14. provide support in placing and fixing kicker for column, walls and check its position with respect to line , alignment, and necessary grid dimension</p> <p>PC15. check erected formwork for line, level, alignment and plumb within tolerance limit</p> <p>PC16. check the dimensional accuracy and right angle and take necessary corrective measures if required</p>

CON/N0303

Assemble and dismantle system formwork for RCC structures

Dismantle system formwork	<p>PC17. follow dismantling procedure as per standard practice and system used</p> <p>PC18. remove bracing and all other support sequentially and safely as instructed</p> <p>PC19. remove sheathing material sequentially using proper tools and tackles to avoid damage to structure or sheathing materials</p> <p>PC20. dismantle formwork shutters manually or by mechanical means as per requirement</p> <p>PC21. ensure that all the small components are staked properly for further use</p> <p>PC22. repair formwork material if required and ensure cleaning and proper stacking after dismantling</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. standard procedure for shuttering works</p> <p>KA2. safety rules and regulations to handle required shuttering carpentry tools, tackles and equipment required to perform the shuttering work</p> <p>KA3. personal protection including the use of the related safety gears, safety equipment & safety drills that may be required</p> <p>KA4. service request procedures for tools, materials and equipments,</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. basic sketches / schematic working drawing that may be required for erecting and dismantling system formwork</p> <p>KB2. basic principles of measurement, geometry and arithmetic calculation</p> <p>KB3. linear conversion of units</p> <p>KB4. units of measurement</p> <p>KB5. different types of measurements and marking tools</p> <p>KB6. how to select and use different types of formwork tools</p> <p>KB7. standard size of all formwork tools, material and components</p> <p>KB8. knowledge and use of water level tube</p> <p>KB9. major types of system formwork such as Cuplock, DOKA, PERI, Mivan, Aluform and other similar system and their appropriate applications</p> <p>KB10. how to erect and brace major types of formwork as per site requirements</p> <p>KB11. any special requirements for the erecting and dismantling system formwork properties and application of release agents</p> <p>KB12. how to check for line, level and alignment</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. write in one or more language, preferably the local language at the site</p>
	Reading Skills

CON/N0303

Assemble and dismantle system formwork for RCC structures

	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA2. read one or more language, preferably the local language at the site</p> <p>SA3. read /sketches/routine working drawing or instructions provided for the work</p> <p>SA4. read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace</p>
	Oral Communication (Listening and Speaking skills)
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA5. speak in one or more language, preferably one of the local language at site</p> <p>SA6. listen and follow instructions given by the superior on the appropriate process to be followed</p>
B. Professional Skills	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. decide whether his workplace is safe for working and also his work is not creating hazardous conditions for other</p>
	Plan and Organise
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB2. plan work and organize required resource in coordination with team member and superior</p>
	Customer centricity
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. complete work as per agreed time schedule and quality</p>
	Problem solving
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. rectify any problem related to line, level and alignment of erected formwork</p> <p>SB5. rectify any problem related to making and repairing of shutter board</p> <p>SB6. rectify any problem related to support provided</p> <p>SB7. resolve any conflict within the team</p>
	Analytical Thinking
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SB8. erect formwork in case of any obstruction, in and around opening or on uneven ground by providing suitable support</p> <p>SB9. optimize resources</p> <p>SB10. minimize wastages</p> <p>SB11. revert to superior for selection/sorting of materials</p>
	Critical Thinking

CON/N0303

Assemble and dismantle system formwork for RCC structures

	<p>The user/individual on the job needs to know and understand how to:</p> <ul style="list-style-type: none">SB12. evaluate the complexity of the tasks and seek assistance and support wherever required from the superiorSB13. identify and assess how violation of any safety norms may lead to accidents
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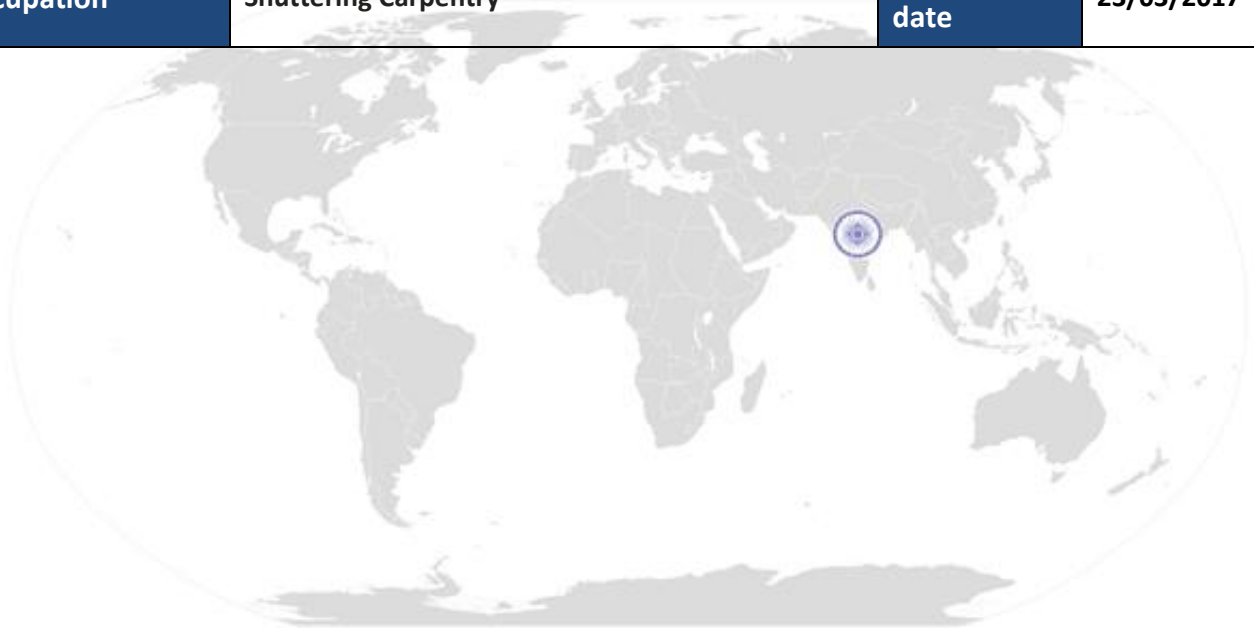


CON/N0303

Assemble and dismantle system formwork for RCC structures

NOS Version Control

NOS Code	CON/N0303		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
Occupation	Shuttering Carpentry	Next review date	23/03/2017



CON/N0304

Carry out quality check for shuttering works

National Occupational Standard



Overview

This NOS covers the skill and knowledge required by a workman for carrying out quality check for shuttering works.

CON/N0304

Carry out quality check for shuttering works

National Occupational Standard

Unit Code	CON/N0304
Unit Title (Task)	Carry out quality check for shuttering works
Description	This unit describes the skills and knowledge required to carrying out quality check for shuttering works.
Scope	The scope covers the following: <ul style="list-style-type: none"> Carry out quality check for shuttering works
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Carry out quality check for shuttering works	To be competent, the user / individual on the job must be able to: <ul style="list-style-type: none"> PC1. check fixed shutters with respect to survey layouts PC2. check for application of release agent PC3. Check cover of reinforcement steel is as specified PC4. check joints of plywood and timber and procedure used for nailing PC5. check diagonal dimensions for its accuracy, if twist observe take corrective action PC6. take rectification measures of formwork boards / plates after removal PC7. check for water tightness of the whole shuttering / formwork system 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. check support for shuttering and formwork to ensure stability PC13. inform superior for checking and assist while checking
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. standard procedure for conducting quality checks for shuttering works KA2. safety rules and regulations to handle required shuttering carpentry tools, tackles and equipment KA3. personal protection including the use of the related safety gears, safety equipment & safety drills that may be required KA4. service request procedures for tools, materials and equipments
B. Technical Knowledge	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KB1. basic sketches / schematic working drawing relevant for erecting and dismantling system formwork

CON/N0304

Carry out quality check for shuttering works

	KB2. basic principles of measurement, geometry and arithmetic calculation KB3. major types of system formwork (Cuplock, DOKA, PERI, Mivan, Aluform) and their appropriate applications KB4. how to check for line, level and alignment KB5. importance of quality checks in shuttering works KB6. maximum tolerance limits for key quality checks for shuttering works as per IS / International codes KB7. how to carry out rectification of shuttering works KB8. basics and fundamentals of reinforcement works KB9. basics and fundamentals of concreting works KB10. materials and components used in shuttering works KB11. suitability of release agent applied
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. write in one or more language, preferably the local language at the site
	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA2. read one or more language, preferably the local language at the site SA3. read /sketches/routine working drawing or instructions provided for the work SA4. read various, sign boards, safety rules and safety tags , instruction related to exit routes during emergency at the workplace
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA5. speak in one or more language, preferably one of the local language at site SA6. listen and follow instructions given by the superior on the appropriate process to be followed
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. decide whether his workplace is safe for working and also his work is not creating hazardous conditions for others
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB2. plan work and organize required resource in coordination with team member and superior
	Customer centricity

CON/N0304

Carry out quality check for shuttering works

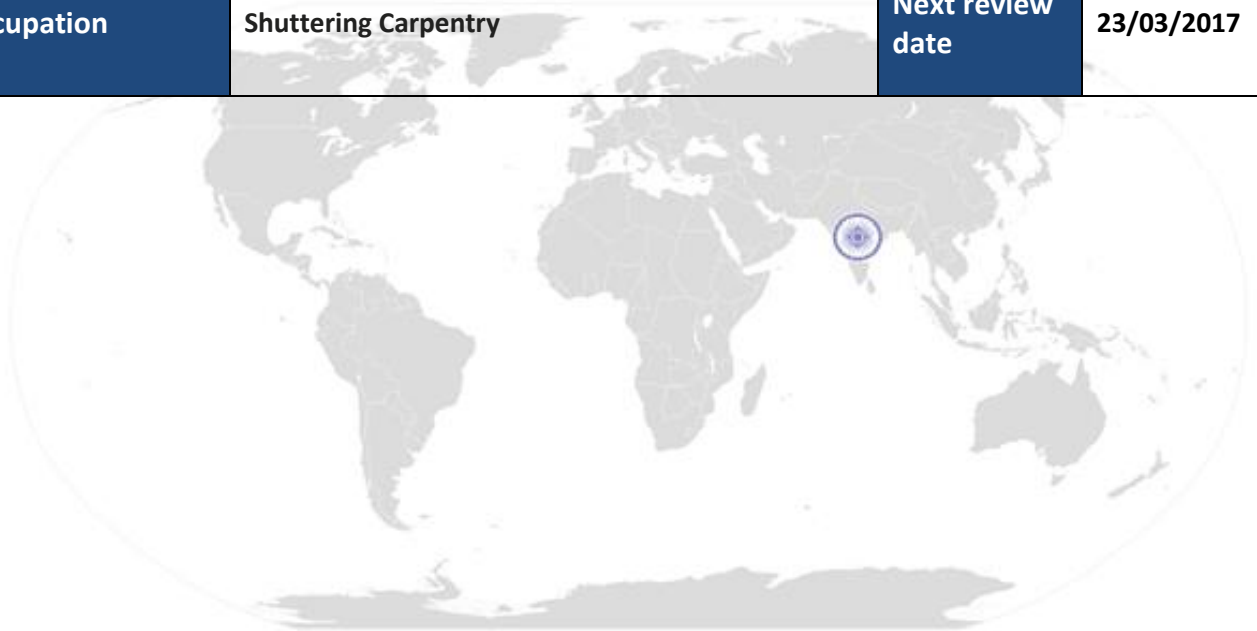
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. complete work as per agreed time schedule and quality</p>
	<p>Problem solving</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. rectify any problem related to line, level and alignment of erected formwork</p> <p>SB5. rectify any problem related to making and repairing of shutter board</p> <p>SB6. rectify any problem related to support provided</p> <p>SB7. rectify any other problem related to formwork</p> <p>SB8. resolve any conflict within the team</p>
	<p>Analytical Thinking</p>
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SB9. provide suggestion and remedial measures to meet the quality standards</p> <p>SB10. optimize resources</p> <p>SB11. minimize wastages</p> <p>SB12. revert to superior for selection/sorting of materials</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB13. evaluate the complexity of the tasks to determine if any guidance is required from the superior</p> <p>SB14. identify and assess how violation of any safety norms may lead to accidents</p>

CON/N0304

Carry out quality check for shuttering works

NOS Version Control

NOS Code	CON/N0304		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
Occupation	Shuttering Carpentry	Next review date	23/03/2017



CON/N8001

Work effectively in a team to deliver desired results at the workplace

National Occupational Standard



Overview

This NOS covers the skill and knowledge required to work effectively within a team to achieve the desired results.

CON/N8001

Work effectively in a team to deliver desired results at the workplace

National Occupational Standard

Unit Code	CON/N8001
Unit Title (Task)	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: <ul style="list-style-type: none"> Interact and communicate effectively with co-workers, superiors and sub-ordinates across different teams Support co-workers, superiors and sub-ordinates within the team and across interfacing teams to ensure effective execution of assigned task
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Interact and communicate in effective and conclusive 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. address the problems effectively and report if required to immediate supervisor appropriately PC4. receive instructions clearly from superiors and respond effectively on same PC5. communicate to team members/subordinates for appropriate work technique and method PC6. seek clarification and advice as per requirement and applicability
Support co-workers to execute project requirements	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
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KA1. own roles and responsibilities KA2. importance of effective communication and establishing strong working relationships with co-workers KA3. risks of a failure in teamwork in terms of effects on project outcomes, timelines, safety at the construction site, etc. KA4. different modes of communication, and its appropriate usage KA5. importance of creating healthy and cooperative work environment among the gangs of workers
B. Technical Knowledge	The user/individual on the job needs to know and understand: <ul style="list-style-type: none"> KB1. different activities within his work area where an interaction with other workers is required

CON/N8001

Work effectively in a team to deliver desired results at the workplace

	<p>KB2. applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co- workers might need as per the requirement</p> <p>KB3. importance of proper and effective communication and the expected adverse effects in case of failure relating to quality, timelines, safety, risks at the construction project site</p> <p>KB4. importance and need of supporting co-workers facing problems for smooth functioning of work</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to: SA1. write in one or more languages, preferably the local language at the site
	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA2. read in one or more languages, preferably the local language at the site SA3. read communication from team members regarding work completed, materials used, tools and tackles used, support required
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA4. speak in one or more languages, preferably one of the local language at the site SA5. listen and follow instructions / communication shared by superiors/ co-workers regarding team requirements or interfaces during work processes SA6. orally communicate with co-workers regarding support required to complete the respective work
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. decide on what information is to be shared with co-workers within the team or from interfacing gang of workers
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB2. plan work and organize required resources in coordination with team members
	Customer centricity
	The user/individual on the job needs to know and understand how to: SB3. complete all assigned task in coordination with team members
	Problem solving

CON/N8001

Work effectively in a team to deliver desired results at the workplace

	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. take initiative in resolving issues among co-workers or report the same to superiors</p>
	<p>Analytical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB5. ensure best ways of coordination among team members</p> <p>SB6. communicate with co-workers considering their educational / social background</p>
	<p>Critical Thinking</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB7. evaluate the complexity of task and determine if any guidance is required from superiors</p>

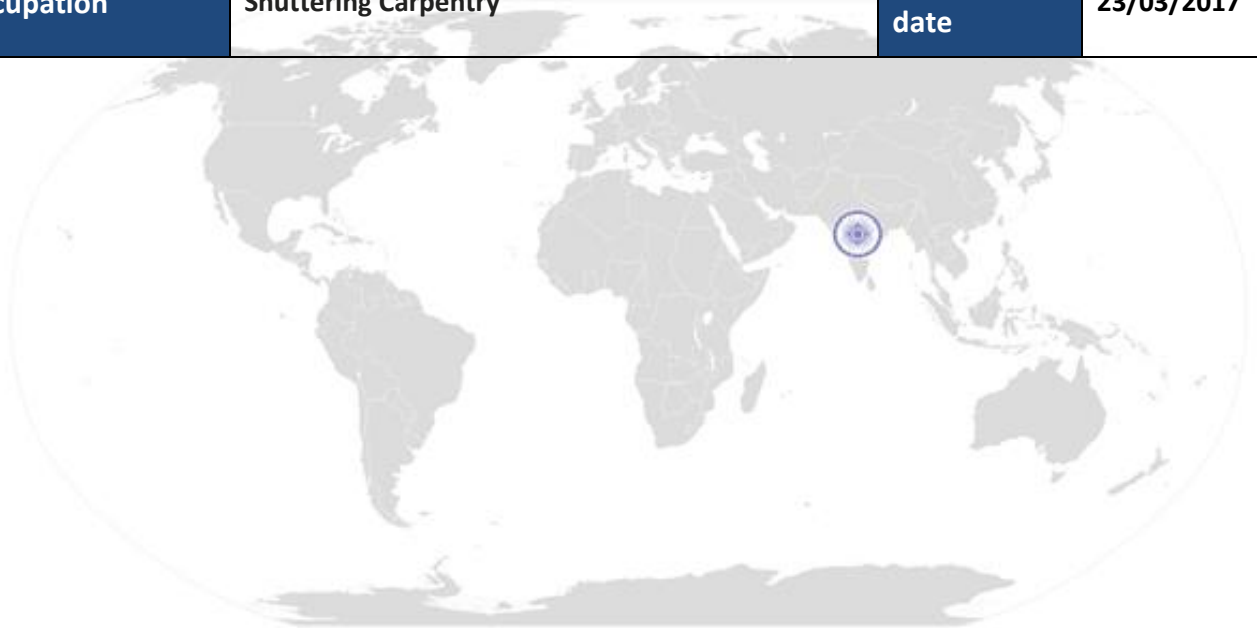


CON/N8001

Work effectively in a team to deliver desired results at the workplace

NOS Version Control

NOS Code	CON/N8001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
Occupation	Shuttering Carpentry	Next review date	23/03/2017



National Occupational Standard



Overview

This NOS covers the skills and knowledge required to plan and organize work in order to meet expected quality in established time frame.

CON/N8002

Plan and organize work to meet expected outcomes

National Occupational Standard

Unit Code	CON/N8002
Unit Title (Task)	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	<p>This scope covers the following:</p> <ul style="list-style-type: none"> • Prioritize work activities to achieve desired results • Organize desired resources prior to commencement of work
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Prioritize work activities to achieve desired results	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. understand clearly the targets and timelines set by superiors</p> <p>PC2. plan activities as per schedule and sequence</p> <p>PC3. provide guidance to the subordinates to obtain desired outcome</p> <p>PC4. plan housekeeping activities prior to and post completion of work</p>
Organize desired resources prior to commencement of work	<p>PC5. list and arrange required resources prior to commencement of work</p> <p>PC6. select and employ correct tools, tackles and equipment for completion of desired work</p> <p>PC7. complete the work with allocated resources</p> <p>PC8. engage allocated manpower in an appropriate manner</p> <p>PC9. use resources in an optimum manner to avoid any unnecessary wastage</p> <p>PC10. employ tools, tackles and equipment with care to avoid damage to the same</p> <p>PC11. organize work output, materials used, tools and tackles deployed,</p> <p>PC12. processes adopted to be in line with the specified standards and instructions</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. importance of proper housekeeping</p> <p>KA2. policies, procedures and work targets set by superiors</p> <p>KA3. roles and responsibilities in executing the work for subordinates and self</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. standard practices of work to be adopted for assigned task</p> <p>KB2. how to use available resources in a judicious and appropriate manner to minimize wastages or damage</p>
Skills (S)	
A. Core Skills/	Writing Skills

CON/N8002

Plan and organize work to meet expected outcomes

Generic Skills	The user/ individual on the job needs to know and understand how to: SA1. write in one or more language, preferably the local language at the site SA2. list out the assigned works and targets
	Reading Skills
	The user/ individual on the job needs to know and understand how to: SA3. read in one or more language, preferably the local language at the site SA4. read communication from co-workers, superiors and notices from other departments as per requirement of the level
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA5. speak in one or more language, preferably one of the local language at the site SA6. listen and follow communication shared by co-workers regarding standard work processes, resources available, timelines, etc. SA7. communicate effectively with co-workers and subordinates
B. Professional Skills	Decision Making
	The user/individual on the job needs to know and understand how to: SB1. decide on what sequence is to be adopted for execution of work
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB2. plan and organize the materials, tools, tackles and equipment required to execute the work
	Customer centricity
	The user/individual on the job needs to know and understand how to: SB3. complete all assigned task with proper planning and organizing
	Problem solving
	The user/individual on the job needs to know and understand how to: SB4. arrange or seek help to arrange for material, tools and tackles in case of shortfall
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB5. analyze areas of work which could result in a delay of work, wastage of material or damage to tools and tackles
Critical Thinking	
The user/individual on the job needs to know and understand how to: SB6. evaluate potential solutions to minimize avoidable delays and wastages at	

CON/N8002

Plan and organize work to meet expected outcomes

	the construction site
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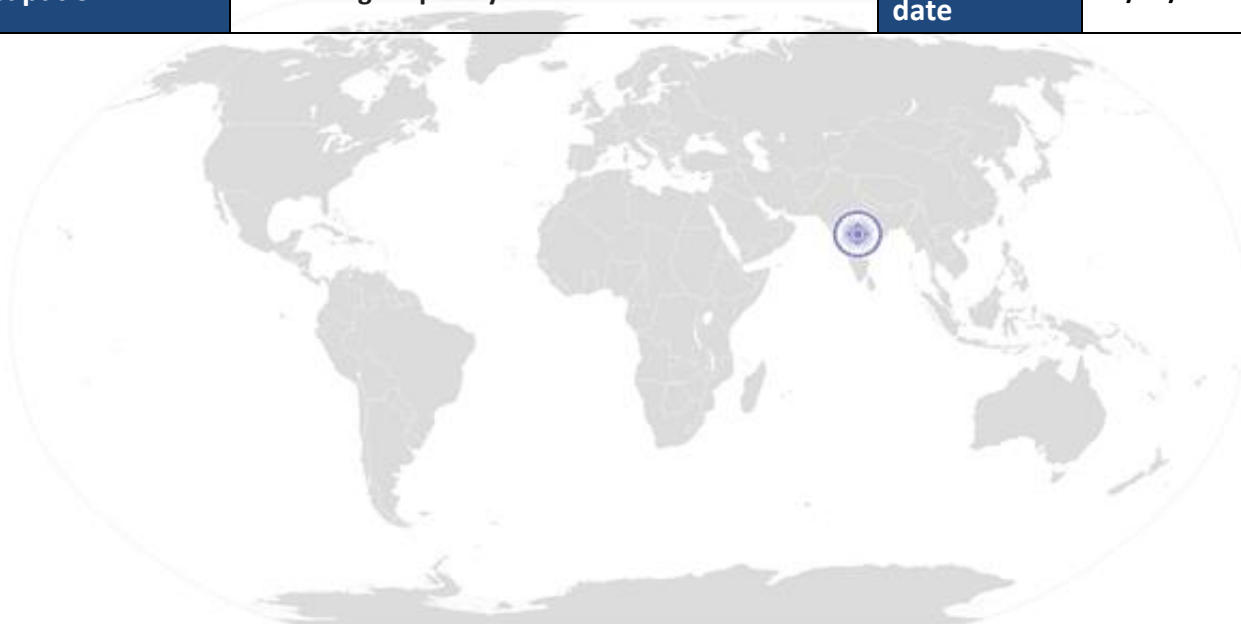


CON/N8002

Plan and organize work to meet expected outcomes

NOS Version Control

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Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
Occupation	Shuttering Carpentry	Next review date	23/03/2017



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

National Occupational Standard



Overview

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

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

National Occupational Standard

Unit Code	CON/N9001
Unit Title (Task)	Work according to personal health, safety and environment protocol at construction site
Description	This NOS covers the skill and knowledge required for an individual to work according to personal health, safety and environmental protocol at construction site
Scope	<p>The scope covers the following:</p> <ul style="list-style-type: none"> Follow safety norms as defined by organization Adopt healthy & safe work practices Implement good housekeeping and environment protection process and activities
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Follow safety norms as defined by organization	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority</p> <p>PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities</p> <p>PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable</p> <p>PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site</p> <p>PC5. identify near miss , unsafe condition and unsafe act</p>
Adopt healthy & safe work practices	<p>PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including:</p> <ul style="list-style-type: none"> Head Protection (Helmets) Ear protection Fall Protection Foot Protection Face and Eye Protection, Hand and Body Protection Respiratory Protection (if required) <p>PC7. handle all required tools, tackles , materials & equipment safely</p> <p>PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines</p> <p>PC9. install and apply properly all safety equipment as instructed</p> <p>PC10. follow safety protocol and practices as laid down by site EHS department</p>

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

Follow safety norms as defined by organization	<p>To be competent, the user / individual on the job must be able to:</p> <p>PC11. identify and report any hazards, risks or breaches in site safety to the appropriate authority</p> <p>PC12. follow emergency and evacuation procedures in case of accidents, fires, natural calamities</p>
Knowledge and Understanding (K)	
A. Organizational Context (Knowledge of the company / organization and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines</p> <p>KA2. types of safety hazards at construction sites</p> <p>KA3. basic ergonomic principles as per applicability</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. the procedure for responding to accidents and other emergencies at site</p> <p>KB2. appropriate personal protective equipment to used based on various working conditions</p> <p>KB3. importance of handling tools, equipment and materials as per applicable</p> <p>KB4. health and environments effect of construction materials as per applicability</p> <p>KB5. various environmental protection methods as per applicability</p> <p>KB6. storage of waste including the following at appropriate location:</p> <ul style="list-style-type: none"> • non-combustible scrap material and debris • combustible scrap material and debris • general construction waste and trash (non-toxic, non-hazardous) • any other hazardous wastes • any other flammable wastes <p>KB7. how to use hazardous material, in a safe and appropriate manner as per applicability</p> <p>KB8. safety relevant to tools, tackles, & requirement as per applicability</p> <p>KB9. housekeeping activities relevant to task</p>
Skills (S)	
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. write in one or more language, preferably the local language at the site</p> <p>SA2. fill safety formats for near miss, unsafe conditions and safety suggestions</p>
	Reading Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA3. read in one or more language, preferably the local language at the site</p> <p>SA4. read sign boards, notice boards relevant to safety</p>
	Oral Communication (Listening and Speaking skills)

CON/N9001 *Work according to personal health, safety and environment protocol at construction site*

	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA5. speak in one or more language, preferably one of the local language at the site</p> <p>SA6. listen instructions / communication shared by site EHS and superiors regarding site safety, and conducting tool box talk</p> <p>SA7. communicate reporting of site conditions, hazards, accidents, etc.</p>
B. Professional Skills	Decision Making
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB1. not create unsafe conditions for others</p> <p>SB2. keep the workplace clean and tidy</p>
	Plan and Organise
	N.A
	Customer centricity
	N.A
	Problem solving
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB3. identify safety risks that affect the health, safety and environment for self and others working in the vicinity, tackle it if within limit or report to appropriate authority</p>
	Analytical Thinking
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SB4. assess and analyze areas which may affect health, safety and environment protocol on the site</p>
Critical Thinking	
<p>The user/individual on the job needs to know and understand how to:</p> <p>SB5. ensure personal safety behavior</p> <p>SB6. respond to emergency</p>	

CON/N9001 *Work according to personal health, safety and environment protocol at construction site*

NOS Version Control

NOS Code	CON/N9001		
Credits (NSQF)	TBD	Version number	1.0
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Industry Sub-sector	Real Estate and Infrastructure Construction	Last reviewed on	23/03/2015
Occupation	Shuttering Carpentry	Next review date	23/03/2017



Assessment Criteria for Shuttering Carpenter - System

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Shuttering Carpenter – System

Qualification Pack CON/Q0304

Sector Skill Council Construction

Guidelines for Assessment

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) 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.
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.
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 iteration 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.

				Marks Allocation	
		Total Mark	Out Of	Theory	Skills Practical
CON/N0302: Make shutters used in shuttering carpentry	PC1. select and use regular hand tools such as hand saw, chisel, jack hammer, nailing hammer, hand drill and other tools efficiently	100	10	2	8
	PC2. select and use power tools such as circular saw, hand drill machine, table mounted saw, planning machine and power drilling machine for cutting, sizing and planning of timber and plywood efficiently		10	2	8
	PC3. maintain correct body posture while operating the machine		10	2	8
	PC4. maintain, handle, store and upkeep all relevant tools and their basic maintenance		10	2	8

Assessment Criteria for Shuttering Carpenter - System

	PC5. carry out visual check to ensure that timber, plywood are as per quality and requirements for making shutters		10	2	8
	PC6. check that all fixtures, consumables and materials are available for shutter making		10	2	8
	PC7. make use of measurement and marking tools for marking on plywood and timber		5	1	4
	PC8. measure and mark form sheathing and stiffeners according to instructions and sketches		5	1	4
	PC9. cut form sheathing material (plywood) and stiffeners (timber) within the tolerance limit and as per instructions / specification		5	1	4
	PC10. make wooden shutter panels using different types of joints such as dovetail, tennon & mortise, lap joints as per instructions and specifications		5	1	4
	PC11. smooth corners and edges of panels using appropriate tools		5	1	4
	PC12. carry out nailing work as per standard practice ensuring rigidity of joints		5	1	4
	PC13. check and ensure that shutter board dimension is as per sketch		5	1	4
	PC14. repair already prepared shutters by nailing and strengthening		5	1	4
	Total		100	20	80
CON/N0303: Assemble and dismantle system formwork for RCC structures	PC1. clean the shutter panels before using for shuttering work	100	5	1	4
	PC2. check for supporting base for system formwork components		5	1	4
	PC3. check and ensure all tools, material, components are available as per requirements		5	1	4
	PC4. check that fixing and fasteners are as per system used and as per the requirements		5	1	4
	PC5. apply release agents to sheathing material as per specifications and instructions		5	1	4
	PC6. position and set out formwork manually or by mechanical means as per instructions and requirement		5	1	4
	PC7. position and provide necessary support using props or other appropriate components based on system used		5	1	4
	PC8. check for block-outs and cast-in services to specified locations		5	1	4
	PC9. plug all openings and gaps using foam sheet and adhesive tape or other appropriate materials		5	1	4
	PC10. ensure water tightness of form by providing form sheet or necessary packing material		5	1	4
	PC11. position and fix props properly and check for plumb, position and spacing is as specified or instructed		5	1	4
	PC12. provide horizontal or vertical construction joints in case of structural element such as beam , column, slab as		5	1	4

Assessment Criteria for Shuttering Carpenter - System

	per standard practices			
	PC13. ensure tightness of tie rods, supports, and bracings	5	1	4
	PC14. provide support in placing and fixing kicker for column, walls and check its position with respect to line , alignment, and necessary grid dimension	5	1	4
	PC15. check erected formwork for line, level, alignment and plumb within tolerance limit	5	1	4
	PC16. check the dimensional accuracy and right angle and take necessary corrective measures if required	5	1	4
	PC17. follow dismantling procedure as per standard practice and system used	10	2	8
	PC18. remove bracing and all other support sequentially and safely as instructed	10	2	8
	PC19. remove sheathing material sequentially using proper tools and tackles to avoid damage to structure or sheathing materials	5	1	4
	PC20. dismantle formwork shutters manually or by mechanical means as per requirement	5	1	4
	PC21. ensure that all the small components are staked properly for further use	5	1	4
	PC22. repair formwork material if required and ensure cleaning and proper stacking after dismantling	5	1	4
	Total	100	20	80
CON/N0304: Carry out quality check for shuttering works	PC1. check fixed shutters with respect to survey layouts	10	2	8
	PC2. check for application of release agent	5	1	4
	PC3. Check cover of reinforcement steel is as specified	10	2	8
	PC4. check joints of plywood and timber and procedure used for nailing	5	1	4
	PC5. check diagonal dimensions for its accuracy, if twist observe take corrective action	5	1	4
	PC6. take rectification measures of formwork boards / plates after removal	10	2	8
	PC7. check for water tightness of the whole shuttering / formwork system	10	2	8
	PC8. check plumb to ensure verticality is within tolerance limit	5	1	4
	PC9. check dimensions according to sketches / instructions to ensure that they are within tolerance limit	5	1	4
	PC10. check props for verticality, position and spacing in	10	2	8
	100			

Assessment Criteria for Shuttering Carpenter - System

	case of load bearing support				
	PC11. check lines and levels according to sketches / instructions to ensure that they are within tolerance limit		5	1	4
	PC12. check support for shuttering and formwork to ensure stability		10	2	8
	PC13. inform superior for checking and assist while checking		10	2	8
	Total		100	20	80
CON/N8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members	100	10	2	8
	PC2. inform co-workers and superiors about any kind of deviations from work		5	1	4
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		5	1	4
	PC4. receive instructions clearly from superiors and respond effectively on same		5	1	4
	PC5. communicate to team members/subordinates for appropriate work technique and method		5	1	4
	PC6. seek clarification and advice as per requirement and applicability		10	2	8
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		30	6	24
	PC8. work together with co-workers in a synchronized manner		30	6	24
	Total		100	20	80
CON/N8002: Plan and organize work to meet expected outcomes	PC1. understand clearly the targets and timelines set by superiors	100	10	2	8
	PC2. plan activities as per schedule and sequence		10	2	8
	PC3. provide guidance to the subordinates to obtain desired outcome		10	2	8
	PC4. plan housekeeping activities prior to and post completion of work		10	2	8
	PC5. list and arrange required resources prior to commencement of work		10	2	8
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		10	2	8
	PC7. complete the work with allocated resources		10	2	8
	PC8. engage allocated manpower in an appropriate manner		10	2	8
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		5	1	4
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		5	1	4

Assessment Criteria for Shuttering Carpenter - System

	PC11. organize work output, materials used, tools and tackles deployed,		5	1	4
	PC12. processes adopted to be in line with the specified standards and instructions		5	1	4
		Total	100	20	80
CON/N9001: Work according to personal health, safety and environment protocol at construction site	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authorities	100	5	1	4
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		5	1	4
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable		10	2	8
	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		5	1	4
	PC5. identify near miss, unsafe condition and unsafe act		5	1	4
	PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: <ul style="list-style-type: none"> • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection • Hand and Body Protection • Respiratory Protection (if required) 		10	2	8
	PC7. handle all required tools, tackles, materials & equipment safely		5	1	4
	PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		5	1	4
	PC9. install and apply properly all safety equipment as instructed		15	3	12
	PC10. follow safety protocol and practices as laid down by site EHS department		15	3	12
	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		10	2	8
	PC12. apply ergonomic principles wherever required		10	2	8
			Total	100	20