QUALIFICATIONS PACK- OCCUPATIONAL STANDARDS FOR CONSTRUCTION INDUSTRY

Contents

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

Contact Us:
CSDCI
204, Aashirwad Complex, D-1, Green Park,New Delhi - 110016
E-mail: standards@csdcindia.org

Introduction

Qualifications Pack – Mason General

SECTOR: CONSTRUCTION

SUB-SECTOR:1. Real Estate (Residential, Commercial & Institutional)
2. Infrastructure (Roads, Railways, Bridges, Runways & Industrial Units)
3. Power Generation (Hydro, Thermal & Nuclear)

OCCUPATION: MASONRY

REFERENCE ID: CON/Q0103

ALIGNED TO: NCO-2004/7122.20

Mason Trade is one of the basic trades in Construction Industry and its application is common to construction of structures in Real Estate, Infrastructure and in Power sub-sector. It involves building various structures with materials including brick, block, stone and concrete.

Brief Job Description: Mason General is responsible for performing routine masonry works such as brickwork, block work, laying paver block sand random rubble masonry works. It also includes plastering with simple finishes by using appropriate tools and equipments and as per the specified standards with dimensional accuracy. The individual is also responsible for IPS &Tremix flooring works and cementatious waterproofing works.

Personal Attributes: The individual is expected to be physically fit and should be able to work across various locations withstanding extreme weather/site conditions while working at any construction site. The person must be able to perform efficiently within a team, handle the various masonry tools and materials and work responsibly.

Job Details

Qualifications Pack Code	**CON/Q0103**		
Job Role	**Mason General**		
Credits(NSQF)	**TBD**	**Version number**	**1.0**
Sector	**Construction**	**Drafted on**	**07/03/2015**
Sub Sector	1. **Real Estate (Residential, Commercial, &Institutional)** 2. **Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units)** 3. **Power Generation (Hydro, Thermal & Nuclear)**	**Last reviewed on**	**23/03/2015**
Occupation	**Masonry**	**Next review date**	**23/03/2017**
NSQC Clearance on	**19/05/2015**		

Job Role	**Mason General**
Role Description	To work as a skilled Mason and perform routine masonry works such as brickwork, blockwork, laying paver blocks, random rubble masonry works & pointing and plastering with simple finishes by using appropriate tools and equipments. The job role also includes laying IPS & Tremix flooring and cementitious waterproofing works as per requirement, under the supervision of level-4 mason and above as per applicability. Also the jobholder should be able to supervise & engage the mason level- 2 and below suitably and productively.
NSQF Level	3
Minimum Educational Qualifications*	Equivalent to minimum 5th standard
Maximum Educational Qualifications*	N.A
Training (Suggested but not mandatory)	Trained to qualify test & assessment by authorized agency for behavior, knowledge & skill as per all relevant NOS for General Mason level-3.Recommended training period of 8 to 12 weeks.
Minimum Job Entry Age	18 Years
Experience	• Minimum Five years site experience for non-trained worker • 2years' experience for Masonry Level 2 qualified
Applicable National Occupational Standards (NOS) `	**Compulsory:** 1. **CON/N0110:**Construct masonry structures using brick / block

	2. **CON/N0111:** Execute plaster on internal & external surfaces of masonry & RCC structure 3. **CON/N0112:** Carry out waterproofing works for structures using cementitious materials 4. **CON/N0113:** Build structures using random rubble masonry **5. CON/N0114:** Carry out IPS / Tremix flooring 6. **CON/N8001:**Work effectively in a team to deliver desired results at the workplace 7. **CON/N8002:**Plan and organize work to meet expected outcomes 8. **CON/N9001:**Work according to personal health, safety and environment protocol at construction site **Optional:** **N.A**
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

National Occupational Standard

Overview

This unit covers the skills and knowledge required by a workman for constructing various masonry structures using brick / block.

National Occupational Standard

Unit Code	**CON/N0110**
Unit Title (Task)	**Construct masonry structures using brick / block**
Description	This unit describes the skills and knowledgerequired to construct variousmasonry structures using brick / block.
Scope	The scope covers the following: • Carry out preparatory work before starting masonry work • Check material used for brickwork / block work • Lay brick / block for construction of load bearing / non-load bearing wall, columns and footings • Check the line, level and alignment • Carry out pointing in brick masonry • Perform specialized masonry works such as arches, staircase, manholes and walkways • Repair and restore brick / block masonry
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Carry out preparatory work before starting masonry work	To be competent, the user/individual on the job must be able to: PC1. read and interpret the basic working drawings / sketches before the commencement of brick / block work PC2. ensure tools are in working condition PC3. set out the layouts as per instructions from superiors PC4. check for adequate roughness/wetting of surface PC5. identify and transfer required levels using appropriate tools
Check material used for brickwork/block work	PC6. visual check for quality of bricks / blocks prior to use PC7. ensure fine aggregate is sieved as per grade requirement PC8. ensure bricks / blocks are soaked prior to use
Lay brick/block for construction of load bearing/non-load bearing wall, columns and footings.	PC9. select appropriate tools and equipments as per the tasks at requirement such as: • Different types of Trowels (of the right blade size) • Masons Hammer • Blocking Chisel • Mashing Hammer • Jointers PC10. break bricks to required shape and size using appropriate tools PC11. estimatethe quantity of raw material required PC12. lay and fix bricks / blocks as per specification within tolerance limit using appropriate mortar/adhesive as per applicability

	PC13. maintain that rise of brick work/block work is in line & level PC14. ensure proper curing of constructed masonry structure
Check the line, level and alignment	PC15. maintain required level and specified slope for construction PC16. check vertical and horizontal alignment using appropriate tools PC17. maintain line and level of each course of brickwork using wooden / aluminum straight edge sections PC18. set out 90˚ corners using builders square or 3-4-5 method and check right angle
Carry out pointing in brick masonry	PC19. perform raking of joints as specified prior to drying of bonding mortar PC20. ensure that joints are cleaned and surface is wet prior to pointing PC21. ensure lime/cement mortar for pointing is prepared as per specification PC22. fill joints with appropriate mortar to obtain specified type of pointing PC23. carry out various types of pointing works as per specification using appropriate tools and technique PC24. ensure proper curing of pointing
Perform specialized masonry works such as arches, staircase, manholes, and walkways	PC25. maintain set out of tread and riser of staircase as per drawing/instruction PC26. maintainmasonry works as per required bond, alignment and plumb PC27. maintain bricks/block for manholes as per required line & level and providing channels and benching PC28. lay and fix paver block to designed pattern & finish the joints as specified PC29. install anchors and ties for masonry arches PC30. install arch masonry unit by laying and aligning as per specified bond PC31. cut creepers around corners and full joints to obtain a flushed structure PC32. ensure proper curing of constructed masonry structure
Repair and restore brick /block masonry	PC33. remove deteriorated elements from masonry structures using tools such as saws drills and chisels without causing damage to adjacent structure PC34. reinstall brick/block to match previous or existing work PC35. perform proper pointing and raking of joint to obtain desired surface for exposed brick work PC36. ensure proper bonding with old and new surface
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: KA1. standard practices for masonry work KA2. safety rules and regulations for handling and storing required masonry tools, equipment and materials KA3. personal protection including the use of related safety gears & equipments KA4. how to request for tools and materials as per set procedures KA5. maintenance of tools and equipments

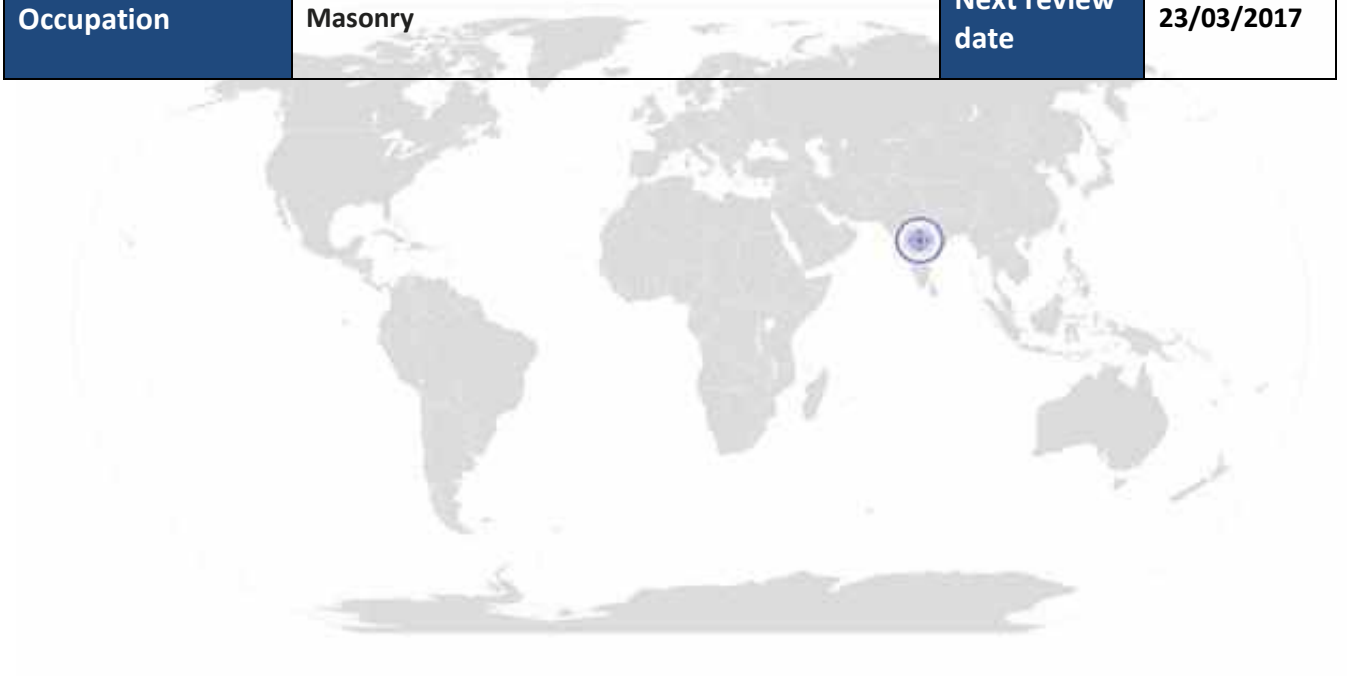
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. sketches for building brick and block work structures KB2. basic principles of measurement KB3. standard specification of all masonry tools and equipments, their care and maintenance KB4. type and size of raw materials KB5. knowledge of English ,Flemish , stretcher & header bond KB6. how to use basic leveling tools in the masonry trade such as: • Spirit level, water level, plumb bob, line thread KB7. how to select and use tools and equipments' such as: • Measuring tape, trowels, floats, brushes, screed boards, straightedge, concrete mixer, mortar boards and stands, shovels, wheelbarrows, hawks, joint rules, mason's square, buckets, power leads, spade, volume box, water measuring jug KB8. how to determine vertical and horizontal alignment using appropriate tools to provide vertical datum lines for building measurements KB9. how to use the 3-4-5 method for squaring corners KB10. various techniques / procedures for cutting/chiseling/dressing different types of bricks to closure KB11. how to lay and fix brick / blocks in position KB12. knowledge of size of gist and joints KB13. cement mix proportion and its importance KB14. various adhesives used in block work KB15. basic knowledge of water cement ratio KB16. method of curing of masonry structures KB17. arch component & terminology KB18. importance of proper joint spacing & gauging in arches KB19. techniques for repairing & finishing KB20. various types of pointing in brick masonry and its application including • flush pointing • keyed/grooved pointing • recessed pointing • struck pointing KB21. different mortar mix used for pointing KB22. various pointing and raking tools and techniques and method of pointing a joint as per specification
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 in one or more or more language, preferably the local language at the site SA3. read sketches provided by the supervisor If required SA4. read instructions, guidelines, sign boards, safety rules and safety tags SA5. read instructions and exit routes during emergency
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA6. speak in one or more language, preferably one of the local language at the site SA7. listen and follow instructions given by the supervisors SA8. orally and effectively communicate with co-workers & subordinates
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. decide whether the work place is safe for working and also relevant task is not creating hazardous condition for others SB2. decide whether work is adequately defined for the day , work front is clear , and adequate materials and tools are available for performing work
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan work and organize required resources in coordination with team members and superiors
	Customer centricity
	The user/individual on the job needs to know and understand how to: SB4. complete work as per the agreed time schedule & quality
	Problem solving
	The user/individual on the job needs to know and understand how to: SB5. rectify the workability of cement mortar mix SB6. rectify the setting/alignment of masonry structure SB7. resolve and solve any conflict within the team
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. optimize resources efficiently SB9. assess quantity and quality of materials for day work

	SB10. minimize wastage in the workplace SB11. start and finish levels for day work SB12. maintain level of inlet and outlet in case of manhole SB13. maintain support for arches while executing brick/block work SB14. reconcile material consumption
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB15. evaluate the complexity of the task and seek assistance and support wherever required SB16. bring to the notice of the superiors any requirement of the requisite material and resources SB17. check for quality of scaffolding/working platform from all aspects of safety SB18. bring to the notice of the superiors violation of any safety norms which may lead to accidents

NOS Version Control

NOS Code	CON/N0110		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial &Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	Next review date	23/03/2017



National Occupational Standard

Overview

This unit covers the skills and knowledge required by workman for plastering on internal & external surfaces of masonry and RCC structures.

National Occupational Standard

Unit Code	**CON/N0111**
Unit Title (Task)	**Execute plaster on internal & external surfaces of Masonry & RCC structures**
Description	This unit describes the skills and knowledgerequired for plastering on internal and external surfaces of Masonry & RCC structures.
Scope	The scope covers the following: • Carry out preparatory work before starting the plastering work • Check material used for plastering • Plaster internal & external masonry & RCC structures • Check for line, level & alignment
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Carry out preparatory work before starting the plastering work	To be competent, the user/individual on the job must be able to: PC1. read sketches for plastering work PC2. select correct materials, tools, tackles and equipments, handle and store it properly at workplace PC3. ensure that surface receiving plaster is prepared appropriately PC4. set layouts as per the specification prior to start of plastering work PC5. produce appropriate levels and make any grooves or lines on the surface as instructed
Check material used for plastering	PC6. ensure sieving of fine aggregate as per grade requirement PC7. check the quality of surface to be plastered PC8. check for quality and consistency of cement mortar mix
Plaster internal & external masonry & RCC structures	PC9. ensure that the correct tools and equipments are selected for plastering work as per requirement PC10. moisten surface sufficiently before starting of the plastering work PC11. ensure that cement mortar is mixed in specified proportion including addition of additives if any PC12. apply cement slurry on receiving surface uniformly PC13. apply the plastering mix of specified thickness on the surface PC14. finish the surface by using correct tools as per the required finish PC15. check for horizontal & vertical alignment during and after plastering
Check for line , level & alignment	PC16. check for vertical and horizontal alignment using appropriate tools PC17. check for slope or maintain falls of the floor PC18. check for right angle at corner if required
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: KA1. standard practices for plastering works KA2. safety rules and regulation for handling and storing require masonry tools, equipment and materials KA3. personal protection including the use of related safety gears & equipments KA4. how to requesttools and materials as per set procedures KA5. maintenance of tools and equipments
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. sketches for all plastering work KB2. basic principles of measurement KB3. standard specification of all masonry tools and equipments ,their care and maintenance KB4. how to use basic leveling tools in the masonry trade such as: • Spirit level, water level plumb bob, line thread KB5. how to select and use tools and equipments' such as: • Finishing Trowel, Plastering Corner Trowel, Plastering Trowels, Pre-worn permashape etc. • Plasters Hawk, Plastering Float, Plastering Feather edges, Plastering Derbies • Plastering Joint Knives and Spreaders, Plastering Sanders and Sheets • Measuring tape/rule, floats, brushes, straight edge, shovels, wheelbarrows, hawks, square, buckets, spade, volume box, measuring can KB6. gradation of sand for internal plasters KB7. how to determine vertical and horizontal alignment using plumb bob to provide vertical datum lines for building measurements KB8. how to continuously monitor the alignment of the plastering on the brick / block work using leveling tools KB9. different types of plasters such as sand faced plaster, rough cast plaster pebbled cast plaster, smooth cast plaster KB10. methods and techniquesforplastering internal and external masonry and RCC structures KB11. various mix proportion to be used and thickness of plastering to be done on internal and external surfaces
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 sketches provided by the supervisor to do plastering on masonry and RCC structure within the tolerance levels SA4. read instructions, guidelines, sign boards, safety rules and safety tags SA5. read instructions and exit routes during emergency
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA6. speak in one or more languages, preferably one of the local language at the site SA7. listen and follow instructions given by the superior SA8. orally and effectively communicate 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 whether the work place is safe for working and also relevant task is not creating hazardous condition for others SB2. decide whether work is adequately defined for the day , work front is clear, and adequate materials and tools are available for performing the work
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan work and organize required resources in coordination with team members and superiors
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB4. complete work as per agreed time schedule and quality
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. rectify the workability of cement mortar mix SB6. rectify the setting/alignment of all masonry structure SB7. resolve and solve any conflict within the team
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB8. maintain specified thickness required for plastering work SB9. optimize resources efficiently

	SB10. minimize wastage at workplace SB11. assess quantity and quality of materials for day work SB12. starting and finishing levels for day work SB13. reconcile material consumption
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB14. evaluate the complexity of the tasks and seek assistance and support wherever required SB15. bring to the notice of the superior any requirements of the requisite material and resource SB16. check the quality of scaffolding/working platform from all aspects of safety SB17. bring to the notice of superiors violation of any safety norms which may lead to accidents

NOS Version Control

NOS Code	**CON/N0111**		
Credits (NSQF)	**TBD**	**Version number**	**1.0**
Industry	**Construction**	**Drafted on**	**07/03/2015**
Industry Sub-sector	1. **Real Estate (Residential, Commercial&Institutional)** 2. **Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units)** 3. **Power Generation (Hydro, Thermal & Nuclear)**	**Last reviewed on**	**23/03/2015**
Occupation	**Masonry**	**Next review date**	**23/03/2017**

National Occupational Standard

Overview

This NOS covers the core skills and technical knowledge required by a workman to be proficient in carrying out waterproofing work to for structures using cementitious materials at the construction site.

National Occupational Standard

Unit Code	**CON/N0112**
Unit Title (Task)	**Carry out waterproofing work on structures using cementitious, materials**
Description	This unit describes the skills and knowledgerequired to carry out work for the waterproofing of the structures using cementitious material
Scope	The scope covers the following: • Carry out preparatory work prior to waterproofing • Check the materials used for waterproofing • Lay out waterproofing course • Carry out brick bat coba waterproofing • Check for line, level & alignment
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Carry out preparatory work prior to waterproofing	To be competent, the user / individual on the job must be able to: PC1. identify and correct defects including caulking by sealing joints or seams in various concrete structures PC2. clean and wash the surface to be water proofed PC3. ensure bricks are soaked overnight prior to laying a course PC4. prepare the surface to be waterproofed through by the following method • prime coating • filling holes or depressions by cementitious material • washing down • Hacking of existing RCC surface • chipping / scraping of protrusions • cleansing free of dust • priming or sealing of surface • removing sharp edges
Check the materials used for waterproofing	PC5. check the quality of cement and sand for usability PC6. check the consistency of grouting material PC7. check the usability of waterproofing material
Laying out water proofing course	PC8. mark and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface PC9. prepare waterproofing cement mortar mixture as per specificationfor the respective surfaces PC10. apply waterproofing cementitious mixture to the prepared surface as specified PC11. finish the surface using appropriate tool as per the required surface finish PC12. protect waterproofed surfaces from any damage

	PC13. check for further leakage of water
Carry out brick bat coba waterproofing	PC14. ensure all non-structural gaps are filled prior to laying brick bat course PC15. prepare a cement mortar in appropriate ratio including addition of waterproofing admixture PC16. spread a mortar of even thickness on the surface PC17. lay brick bat on the prepared mortar ensuring proper placement and uniform gaps between bricks PC18. fill all gaps in brick bat using cement mortar PC19. finish the top surface smooth with cement mortar prepared in specified proportion along with admixtures
Check for line, level & alignment	PC20. identify and transfer required levels using appropriate tools PC21. check horizontal and vertical alignment using appropriate tools PC22. mark and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface
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: KA1. standard practices for waterproofing works KA2. safety rules and regulation for handling and storing require waterproofing tools, equipment and materials KA3. personal protection including the use of related safety gears & equipments KA4. how to request tools and materials as per set procedures KA5. maintenance of tools and equipments
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. preparation of the surface before the waterproofing KB2. types & specification of waterproofing compounds KB3. usage of various tools and equipments as per the waterproofing requirements of the surface such as: • Air compressors, spray equipment & grouting equipments. • Trowels, rollers, brushes, • Angle grinders, shovels, • Electric drills • Concrete mixer, wheelbarrows • Knives or cutting blades • Hammers, brooms, vacuum cleaner, KB4. various methods and techniques used to protect waterproofing of the surface from damage as per the site requirements KB5. procedure of laying brick bat coba waterproofing course KB6. checks for water leakages

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 in one or more language, preferably the local language at the site SA3. read sketches provided by the superior to do waterproofing work SA4. read instructions, guidelines, sign boards, safety rules and safety tags SA5. read instructions and exit routes during emergency
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA6. speak in one or more language, preferably one of the local language at the site SA7. listen and follow instructions given by the superior SA8. orally and effectively communicate with co-worker and subordinate
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. decide whether work place is safe for working and also relevant task is not creating hazardous condition for others SB2. decide whether work is adequately defined for the day , work front is clear , andadequate materials and tools are available for performing the work
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB3. plan work and organize required resources in coordination with team member and superiors
	Customer Centricity
	The user/individual on the job needs to know and understand how to: SB4. complete work as per the agreed time schedule & quality
	Problem solving
	The user/individual on the job needs to know and understand how to: SB5. rectify the workability of cementitious mortar mix SB6. resolve and solve any conflict within the team

	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB7. check & mark the position of leakage SB8. optimize resources efficiently SB9. minimize wastage in the workplace SB10. assess quantity and quality of materials for day work SB11. reconcile material consumption
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB12. evaluate the complexity of the task and seek assistance and support wherever required SB13. bring to the notice of the superiors any requirement of the requisite resources SB14. bring to the notice of superiors violation of any safety norms which may lead to accidents SB15. check the quality of scaffolding/working platform from all aspects of safety SB16. analyze resources, work front & raw materials

NOS Version Control

NOS Code	CON/N0112		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial &Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	Next review date	23/03/2017

National Occupational Standard

Overview

This unit covers theskills and knowledge required for an individualto be proficient in executing work on random rubble masonry

National Occupational Standard

Unit Code	**CON/N0113**
Unit Title (Task)	**Build structures using Random Rubble masonry**
Description	This unit describes the skills and knowledgerequired to build structures using random rubble masonry
Scope	The scope covers the following: • Carry out preparatory work for rubble masonry • Check the material used for random rubble masonry • Lay out coursed and un-coursed Random Rubble Masonry with undressed or hammer dressed stones • Carry out pointing in stone masonry • Lay out course of Dry Rubble Masonry • Check for line, level and alignment

Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Carry out preparatory work for Rubble Masonry	To be competent, the user / individual on the job must be able to: PC1. ensure that the correct tools and tackles are selected for use in the rubble masonry PC2. roughly estimate amount of materials required to complete a rubble masonry job work PC3. ensure that the sub-base is prepared properly PC4. ensure proper compaction of base prior to commencement of work PC5. select the particular type of surface finish as per the site requirements PC6. prepare the sides, edges, bed of stone to ensure proper bonding of stones PC7. mix mortar for rubble masonry in specified ratio including dry & wet mix PC8. identify and transfer required levels using appropriate tools prior to rubble masonry work
Check the material used for random rubble masonry	PC9. check for workability and proportion of cement mortar PC10. check the quality of stones used in random rubble masonry PC11. ensure proper soaking of stones prior to laying
Lay out coursed and un coursed Random Rubble Masonry with undressed or hammer dressed stones	PC12. work with both undressed and hammer dressed stones as per the requirement of the construction site PC13. lay stones to build wall of un-course random rubble or course random rubble as per instruction PC14. knock off all projecting corners of the laid stones with joints filled and flushed as per the requirements of the site for the un-course random rubble masonry PC15. use large stones at the corners and at jambs to increase the strength as per the un-course random rubble masonry requirements

	PC16. ensure proper curing of rubble masonry structure
Carry out pointing in stone masonry	PC17. perform raking of joints as specified prior to drying of bonding mortar PC18. ensure that joints are cleaned and surface is wet prior to pointing PC19. ensure lime/cement mortar for pointing is prepared as per specification PC20. fill joints with appropriate mortar to obtain specified type of pointing PC21. carry out various types of pointing works as per specification using appropriate tools and technique PC22. ensure proper curing of pointing
Lay out course of Dry Rubble Masonry	PC23. lay and fix stones for construction of walls without use of mortar PC24. knock off all projecting corner
Check for line,level and alignment	PC25. mark and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface PC26. check horizontal and vertical alignment using appropriate tools
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: KA1. standard practices for random rubble masonry work KA2. safety rules and regulation for handling and storing required masonry tools, equipment and materials KA3. personal protection including the use of related safety gears & equipments KA4. How to request tools and materials as per set procedures KA5. maintenance of tools and equipments
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. standard specifications of all tools and equipments required for rubble masonry along with care and maintenance such as : • Tile cutters and scribers, masonry drill bits, measuring tape/rule, trowels, straight edge, levels, wet saw, scrapers, etc. KB2. basic principle of measurement KB3. methods of decorative finishes and basic carving work required in the rubble masonry KB4. different types of plasters and mortar requirements for the rubble masonry works as per the specification and aesthetic requirements KB5. various types of cement paste / adhesives used on the base KB6. various types of stones used in rubble masonry KB7. basic methods of stone work and finishing in rubble masonry KB8. various techniques / procedures to work with undressed and hammer dressed stones used for un-course and course random rubble masonry as per the aesthetic requirements of the site KB9. various types of pointing in stone masonry and its application including • flush pointing • weathered pointing

	• ribbon pointing KB10. different mortar mix used for pointing KB11. various pointing and raking tools and techniques and method of pointing a joint as per specification KB12. reference levels on the wall and its importance
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 in one or more language, preferably the local language at the site SA3. read sketches provided by the superior to do random rubble masonry work SA4. read instructions, guidelines, sign boards, safety rules and safety tags SA5. read instructions and exit routes during emergency
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA6. speak in one or more language, preferably one of the local language at the site SA7. listen and follow instructions communicated by supervisors SA8. orally and efficiently communicate with team member
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. decide whether work place is safe for working and also relevant task is not creating hazardous condition for others SB2. decide whether work is adequately defined for the day , work front is clear, and adequate materials and tools are available for performing the work
	Plan and Organise
	The user/individual on the job needs to know and understand how to: SB3. plan & organize required resources in coordination with team members and superiors
	Customer centricity
	The user/individual on the job needs to know and understand how to: SB4. complete work as per the agreed time schedule & quality

	Problem solving
	The user/individual on the job needs to know and understand how to: SB5. rectify the workability of cement mortar mix SB6. rectify the setting/alignment of masonry structure SB7. resolve and solve any conflict within the team SB8. highlight to the superiors in case any corrective action is required during the rubble masonry works
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB9. optimize resources efficiently SB10. minimize wastage in the workplace SB11. assess quantity and quality of materials for day work SB12. starting and finishing levels for day work SB13. ensure correct placement and fixing of stones as per specification SB14. reconcile material consumption
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB15. evaluate the complexity of the task and seek assistance and support wherever required SB16. bring to the notice of the superiors any requirement of the requisite resources SB17. check the quality of scaffolding/working platform from all aspects of safety SB18. bring to the notice of the superiors violation of any safety norms which may lead to accidents

NOS Version Control

NOS Code	CON/N0113		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial & Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	Next review date	23/03/2017

National Occupational Standard

Overview

This unit covers theskills andknowledge for an individual to be proficient in executing IPS and Tremix flooring works.

National Occupational Standard

Unit Code	CON/N0114
Unit Title (Task)	Carry out IPS / Tremix flooring works
Description	This unit describes the skills and knowledgerequired to work on IPS &Tremix flooring
Scope	Thescope covers the following: • Carry out preparatory work prior to IPS / Tremix flooring • Check for line, level and alignment. • Check the materials used for IPS / Tremix flooring in case of manual mixing • Check the materials used for IPS / Tremix flooring in case of machine mixing • Carry out IPS flooring • Carry out Tremix / VDF flooring
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Carry out preparatory work prior to IPS/Tremix flooring	To be competent, the user / individual on the job must be able to: PC1. inspect the work area prior to concreting, ensure leveling incase of any undulations observed on the surface prior to concreting PC2. ensure surface is prepared appropriately and report any deviation in slope and alignment in PCC PC3. report any gaps in formwork to avoid leakage PC4. report any misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided
Check for line, level and alignment	PC5. mark reference level on the wall &transfer this marking to all floor locations using appropriates tools PC6. mark flooring thickness level and provide dummy level dots at specified intervals for ensuring required slope
Check the materials used for IPS/Tremix flooring in case of manual mixing	PC7. check the grade of cement prior to use in case of manual mixing PC8. ensure fine aggregate is sieved as per grade requirement PC9. check that concrete is mixed in appropriate proportion
Check the materials used for IPS/Tremix flooring in case of machine mixing	PC10. visually assess the concrete mix for usability and workability PC11. notify superiors for detrimental quality of concrete PC12. ensure specified concrete mix is used at allocated location PC13. check that panels prepared are of specified size and type
Carry out IPS Flooring work	PC14. fix the glass, aluminum or brass strip in cement mortar with their tops at appropriate level and according to slope PC15. ensure panels are made as per specified size PC16. ensure concrete is poured in alternate panels/specified panels as per requirement

	PC17. remove excess cement slurry and any marks on the surface PC18. level the concrete surface with a straight edge and to the required finish with a wooden float / trowel PC19. spread cement punning over the IPS concrete for smooth finish surface and allow it to soak into the concrete, as per requirement PC20. provide construction joints and expansion joints as per requirement PC21. level poured concrete to the specified levels maintaining required slope PC22. ensure curing of the finished floor surface for the specified time
Carry out Tremix / VDF Flooring work	PC23. level the surface and lay stone soling / boulder soling layer PC24. lay the floor with slope maintained in PCC work above the stone soling PC25. remove excess water from the top layer of wet concrete without removing cement of sand particles through vacuum de-watering machines PC26. ensure floater work within green concrete surface PC27. carry out Tremix flooring in specified panel on RCC floors ensuring intactness of rebar and cover PC28. cut grooves on concrete at specified intervals for construction joints PC29. provide expansion joints as per requirement PC30. carry out curing of finished concrete as per specifications PC31. ensure finished levels have required slope
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: KA1. standard practices for masonry work KA2. safety rules and regulations for handling & storing required masonry tools & materials KA3. personal protection including the use of related safety gears & equipments KA4. how to request tools and materials as per set procedures KA5. maintenance of tools and equipments
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. how to use all masonry tools along with some specialized tools for Tremix flooring such as : • Vacuum de-watering Pump • Floater Machine • Double beam Screen Vibrator KB2. process to prepare the sub-base by watering and ramming KB3. provide for adequate slope in PCC (Plain Cement Concrete) in a base course KB4. how to make reference levels and transfer the markings to all locations where flooring is to be done KB5. various type and grade of cement used, affect of water /cement ratio and type of aggregates

	KB6. different mix proportion/grade of concrete KB7. sequence of concrete pouring and placing KB8. manual mixing of concrete and nominal mix proportions KB9. cover to reinforcement with respect to size of reinforcement KB10. how to pour of concrete in alternate panels KB11. how to avoid shrinkage cracks in concrete KB12. various admixtures used in concreting KB13. different type of vibrators, their influence area and use KB14. construction and expansion joints KB15. cutting tools for providing joints KB16. final toweling process before the concrete is hardened KB17. excess water removal process using Vacuum dewatered machine KB18. use of screed vibrator KB19. hardener usage along with floater machine (if required) at the time of finishing the floor surface to increase abrasion resistance of the floor KB20. how to provide for space for narrow passage for operating float vibrator along a wall
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 in one or more language, preferably the local language at the site SA3. read sketches provided by the superior to do IPS /Tremix flooring works SA4. read instructions, guidelines, sign boards, safety rules and safety tags SA5. read instructions and exit routes during emergency
	Oral Communication (Listening and Speaking skills)
	The user/ individual on the job needs to know and understand how to: SA6. speak in one or more language, preferably one of the local language at the site SA7. listen and follow instructions given by the superior SA8. orally communicate with team member
B. Professional Skills	**Decision Making**
	The user/ individual on the job needs to know and understand how to: SB1. decide whether work place is safe for working and also relevant task is not creating hazardous condition for others

	SB2. decide whether work is adequately defined for the day , work front is clear , andadequate materials and tools are available for performing the work
	Plan and Organize
	The user/individual on the job needs to know and understand how to: SB3. plan work and organize required recourses in co-ordination with team members and superiors
	Customer centricity
	The user/individual on the job needs to know and understand how to: SB4. complete work as per agreed time schedule and quality
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB5. resolve and solve any conflict within the team SB6. bring any noticeable issues faced (related to the flooring) to the attention of the superiors in a timely manner SB7. assess quantity and quality of materials for day work SB8. check quality of scaffolding/working platform from all aspects of safety SB9. dispose of construction debris & keep workplace safe and tidy for working
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB10. optimize resources efficiently SB11. minimize wastage in the workplace SB12. starting and finishing levels for day work SB13. reconcile material consumption
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB14. evaluate the complexity of the task and seek assistance and support wherever required SB15. bring to the notice of the superiors any requirement of the requisite resources SB16. bring to the notice of the superiors violation of any safety norms which may leadto accidents

NOS Version Control

NOS Code	CON/N0114		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial &Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	Next review date	23/03/2017

National Occupational Standard

Overview

This NOS covers the skill and knowledge requiredto workeffectively within a team to achieve the desired results.

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 knowledgerequired to work effectively within a team to achieve the desired results.
Scope	Thescope covers the following: • 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 effectivelyand 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: 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: KB1. different activities within his work area where an interaction with other workers is required KB2. applicable techniques of work, properties of materials used, tools and tackles used, safety standards that co- workers might need as per the requirement 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 KB4. importance and need of supporting co-workers facing problems for smooth functioning of work
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-workersregarding 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
	The user/individual on the job needs to know and understand how to: SB4. take initiative in resolving issues among co-workers or report the same to superiors
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB5. ensure best ways of coordination among team members SB6. communicate with co-workers considering their educational/social background
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB7. evaluate the complexity of task and determine if any guidance is required from superiors

NOS Version Control

NOS Code	CON/N8001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial&Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	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.

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	This scope covers the following: • 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	To be competent, the user / individual on the job must be able to: PC1. understand clearly the targets and timelines set by superiors PC2. plan activities as per schedule and sequence PC3. provide guidance to the subordinates to obtain desired outcome PC4. plan housekeeping activities prior to and post completion of work
Organize desired resources prior to commencement of work	PC5. list and arrange required resources prior to commencement of work PC6. select and employ correct tools, tackles and equipment for completion of desired work PC7. complete the work with allocated resources PC8. engage allocated manpower in an appropriate manner PC9. use resources in an optimum manner to avoid any unnecessary wastage PC10. employ tools, tackles and equipment with care to avoid damage to the same PC11. organize work output, materials used, tools and tackles deployed, PC12. processes adopted to be in line with the specified standards and instructions
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: KA1. importance of proper housekeeping KA2. policies, procedures and work targets set by superiors KA3. roles and responsibilities in executing the work for subordinates and self
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. standard practices of work to be adopted for assigned task KB2. how to use available resources in a judicious and appropriate manner to minimize wastages or damage
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 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 the construction site

NOS Version Control

NOS Code	CON/N8002		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial &Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	Next review date	23/03/2017

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.

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	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
Performance Criteria (PC) w.r.t. the Scope	
Element	**Performance Criteria**
Follow safety norms as defined by 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. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site PC5. identify near miss , unsafe condition and unsafe act
Adopt healthy & safe work practices	PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection, • Hand and Body Protection • Respiratory Protection (if required) PC7. handle all required tools, tackles , materials & equipment safely PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines PC9. install and apply properly all safety equipment as instructed PC10. follow safety protocol and practices as laid down by site EHS department

Implement good housekeeping practices	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes PC12. apply ergonomic principles wherever required
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: KA1. reporting procedures in cases of breaches or hazards for site safety, accidents, and emergency situations as per guidelines KA2. types of safety hazards at construction sites KA3. basic ergonomic principles as per applicability
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. the procedure for responding to accidents and other emergencies at site KB2. appropriate personal protective equipment to used based on various working conditions KB3. importance of handling tools, equipment and materials as per applicable KB4. health and environments effect of construction materials as per applicability KB5. various environmental protection methods as per applicability KB6. storage of waste including the following at appropriate location: • 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 KB7. how to use hazardous material, in a safe and appropriate manner as per applicability KB8. safety relevant to tools, tackles, & requirement as per applicability KB9. housekeeping activities relevant to task
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 SA2. fill safety formats for near miss, unsafe conditions and safety suggestions
	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 sign boards, notice boards relevant to safety

	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 instructions / communication shared by site EHS and superiors regarding site safety, and conducting tool box talk SA7. communicate reporting of site conditions, hazards, accidents, etc.
B. Professional Skills	**Decision Making**
	The user/individual on the job needs to know and understand how to: SB1. not create unsafe conditions for others SB2. keep the workplace clean and tidy
	Plan and Organise
	N.A
	Customer centricity
	N.A
	Problem solving
	The user/individual on the job needs to know and understand how to: 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
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB4. assess and analyze areas which may affect health, safety and environment protocol on the site
	Critical Thinking
	The user/individual on the job needs to know and understand how to: SB5. ensure personal safety behavior SB6. respond to emergency

NOS Version Control

NOS Code	CON/N9001		
Credits (NSQF)	TBD	Version number	1.0
Industry	Construction	Drafted on	07/03/2015
Industry Sub-sector	1. Real Estate (Residential, Commercial &Institutional) 2. Infrastructure (Roads, Railways, Bridges, Runways &Industrial Units) 3. Power Generation (Hydro, Thermal & Nuclear)	Last reviewed on	23/03/2015
Occupation	Masonry	Next review date	23/03/2017

Assessment Criteria for Mason General

CRITERIA FOR ASSESSMENT OF TRAINEES

Job Role Mason General

Qualification Pack CON/Q0103

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 theory part will be based on knowledge bank of questions created by the SSC
3. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria.
5. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in theory and practical for every NOS.
6. The trainee should score 100% marks individually in theory and practical for safety related NOS and performances criteria as and where applicable in each qualification pack.
7. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.
8. 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.
9. After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure in the activity (practical's).
10. 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.

				Marks Allocation	
		Total Mark	**Out Of**	**Theory**	**Skills Practical**
CON/N0110: Construct masonry structures using brick / block	PC1. read and interpret the basic working drawings / sketches before the commencement of brick / block work	**100**	2.5	0.5	2
	PC2. ensure tools are in working condition		1.25	0.25	1
	PC3. set out the layouts as per instructions from superiors		2.25	0.25	2

	PC4. check for adequate roughness/wetting of surface		1.25	0.25	1
	PC5. identify and transfer required levels using appropriate tools		2.75	0.75	2
	PC6. visual check for quality of bricks / blocks prior to use		5	1	4
	PC7. ensure fine aggregate is sieved as per grade requirement		2.5	0.5	2
	PC8. ensure bricks / blocks are soaked prior to use		2.5	0.5	2
	PC9. select appropriate tools and equipments as per the tasks at requirement such as: • Different types of Trowels (of the right blade size) • Masons Hammer • Blocking Chisel • Mashing Hammer • Jointers		3.5	0.5	3
	PC10. break bricks to required shape and size using appropriate tools		4	1	3
	PC11. estimate the quantity of raw material required		2.5	0.5	2
	PC12. lay and fix bricks / blocks as per specification within tolerance limit using appropriate mortar/adhesive as per applicability		6	1	5
	PC13. maintain that rise of brick work / block work is in line & level		2.5	0.5	2
	PC14. ensure proper curing of constructed masonry structure		2	1	1
	PC15. maintain required level and specified slope for construction		2.5	0.5	2
	PC16. check vertical and horizontal alignment using appropriate tools		2.5	0.5	2
	PC17. maintain line and level of each course of brickwork using wooden / aluminium straight edge sections		2.5	0.5	2
	PC18. set out 90° corners using builders square or 3-4-5 method and check right angle		2.5	0.5	2
	PC19. perform proper pointing and raking of joint to obtain desired surface for exposed brick work		2.25	0.25	2
	PC20. ensure proper bonding with old and new surface		2.25	0.25	2
	PC21. ensure lime/cement mortar for pointing is prepared as per specification		1.5	0.5	1
	PC22. fill joints with appropriate mortar to obtain		5.5	1.5	4

	specified type of pointing				
	PC23. carry out various types of pointing works as per specification using appropriate tools and technique		6	1	5
	PC24. ensure proper curing of pointing		2.5	0.5	2
	PC25. maintain set out of tread and riser of staircase as per drawing/instruction		3.5	0.5	3
	PC26. maintain masonry works as per required bond, alignment and plumb		1.5	0.5	1
	PC27. maintain bricks/block for manholes as per required line & level and providing channels and benching		4	1	3
	PC28. lay and fix paver block to designed pattern & finish the joints as specified		2.5	0.5	2
	PC29. install anchors and ties for masonry arches		1.25	0.25	1
	PC30. install arch masonry unit by laying and aligning as per specified bond		4	1	3
	PC31. cut creepers around corners and full joints to obtain a flushed structure		2.25	0.25	2
	PC32. ensure proper curing of constructed masonry structure		1.25	0. 25	1
	PC33. remove deteriorated elements from masonry structures using tools such as saws drills and chisels without causing damage to adjacent structure		2.25	0.25	2
	PC34. reinstall brick/block to match previous or existing work		2.25	0.25	2
	PC35. perform proper pointing and raking of joint to obtain desired surface for exposed brick work		2.25	0.25	2
	PC36. ensure proper bonding with old and new surface		2.25	0.25	2
		Total	100	20	80
CON/N0111: Execute plaster on internal & external Masonry & RCC structure	PC1. read sketches for plastering work	**100**	2.5	0.5	2
	PC2. select correct materials, tools, tackles and equipments, handle and store it properly at workplace		1.25	0.25	1
	PC3. ensure that surface receiving plaster is prepared appropriately		2.5	0.5	2
	PC4. set layouts as per the specification prior to start of plastering work		2.5	0.5	2
	PC5. produce appropriate levels and make any grooves or lines on the surface as instructed		1.25	0.25	1
	PC6. ensure sieving of fine aggregate as per grade requirement		2.5	0.5	2

	PC7. check the quality of surface to be plastered		2.5	0.5	2
	PC8. check for quality and consistency of cement mortar mix		5	1	4
	PC9. ensure that the correct tools and equipments are selected for plastering work as per requirement		10	2	8
	PC10. moisten surface sufficiently before starting of the plastering work		5	1	4
	PC11. ensure that cement mortar is mixed in specified proportion including addition of additives if any		5	1	4
	PC12. apply cement slurry on receiving surface uniformly		5	1	4
	PC13. apply the plastering mix of specified thickness on the surface		10	2	8
	PC14. finish the surface by using correct tools as per the required finish		10	2	8
	PC15. check for horizontal & vertical alignment during and after plastering		5	1	4
	PC16. check for vertical and horizontal alignment using appropriate tools		10	2	8
	PC17. check for slope or maintain falls of the floor		10	2	8
	PC18. check for right angle at corner if required		10	2	8
		Total	**100**	**20**	**80**
CON/N0112: Carry out waterproofing work for structures using cementitious materials	PC1. identify and correct defects including caulking by sealing joints or seams in various concrete structures	**100**	2.5	0.5	2
	PC2. clean and wash the surface to be water proofed		2.25	0.25	2
	PC3. ensure bricks are soaked overnight prior to laying a course		1.25	0.25	1
	PC4. prepare the surface to be waterproofed through by the following method • prime coating • filling holes or depressions by cementitious material • washing down • Hacking of existing RCC surface • chipping / scraping of protrusions • cleansing free of dust • priming or sealing of surface • removing sharp edges		4	1	3
	PC5. check the quality of cement and sand for usability		5	1	4
	PC6. check the consistency of grouting material		2.5	0.5	2
	PC7. check the usability of waterproofing material		2.5	0.5	2
	PC8. mark and transfer required levels at a regular		5	1	4

	interval in order to maintain proper slope of finished surface in case of horizontal surface				
	PC9. prepare waterproofing cement mortar mixture as per specification for the respective surfaces		6	1	5
	PC10. apply waterproofing cementitious mixture to the prepared surface as specified		10	2	8
	PC11. finish the surface using appropriate tool as per the required surface finish		5	1	4
	PC12. protect waterproofed surfaces from any damage		4	1	3
	PC13. check for further leakage of water		5	1	4
	PC14. ensure all non-structural gaps are filled prior to laying brick bat course		**5**	1	4
	PC15. prepare a cement mortar in appropriate ratio including addition of waterproofing admixture		**5**	1	4
	PC16. spread a mortar of even thickness on the surface		**5**	1	4
	PC17. lay brick bat on the prepared mortar ensuring proper placement and uniform gaps between bricks		**10**	2	8
	PC18. fill all gaps in brick bat using cement mortar		**5**	1	4
	PC19. finish the top surface smooth with cement mortar prepared in specified proportion along with admixtures		**5**	1	4
	PC20. identify and transfer required levels using appropriate tools		**2.5**	0.5	2
	PC21. check horizontal and vertical alignment using appropriate tools		**3.5**	0.5	3
	PC22. mark and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface		**4**	1	3
		Total	**100**	**20**	**80**
CON/N0113: Build structures using random rubble masonry	PC1. ensure that the correct tools and tackles are selected for use in the rubble masonry	**100**	1.25	0.25	1
	PC2. roughly estimate amount of materials required to complete a rubble masonry job work		1.25	0.25	1
	PC4. ensure proper compaction of base prior to commencement of work		1.25	0.25	1
	PC5. select the particular type of surface finish as per the site requirements		1.25	0.25	1
	PC6. prepare the sides, edges, bed of stone to ensure proper bonding of stones		1.25	0.25	1
	PC5. Check for line, level and alignment		1.25	0.25	1
	PC7. mix mortar for rubble masonry in specified ratio including dry & wet mix		1.25	0.25	1

	PC8. identify and transfer required levels using appropriate tools prior to rubble masonry work		1.25	0.25	1
	PC9. check for workability and proportion of cement mortar		5	1	4
	PC10. check the quality of stones used in random rubble masonry		3.5	0.5	3
	PC11. ensure proper soaking of stones prior to laying		1.5	0.5	1
	PC12. work with both undressed and hammer dressed stones as per the requirement of the construction site		8	2	6
	PC13. lay stones to build wall of un-course random rubble or course random rubble as per instruction		11	3	8
	PC14. knock off all projecting corners of the laid stones with joints filled and flushed as per the requirements of the site for the un-course random rubble masonry		9	3	6
	PC15. use large stones at the corners and at jambs to increase the strength as per the un-course random rubble masonry requirements		7	2	5
	PC16. ensure proper curing of rubble masonry structure		5	2	3
	PC17. perform raking of joints as specified prior to drying of bonding mortar		2.5	0.5	2
	PC18. ensure that joints are cleaned and surface is wet prior to pointing		1.5	0.5	1
	PC19. ensure lime/cement mortar for pointing is prepared as per specification		1.5	0.5	1
	PC20. fill joints with appropriate mortar to obtain specified type of pointing	**100**	5	1	4
	PC21. carry out various types of pointing works as per specification using appropriate tools and technique		7	1	6
	PC22. ensure proper curing of pointing		2.5	0.5	2
	PC23. lay and fix stones for construction of walls without use of mortar		5	1	4
	PC24. knock off all projecting corner		5	1	4
	PC25. mark and transfer required levels at a regular interval in order to maintain proper slope of finished surface in case of horizontal surface		5	1	4
	PC26. check horizontal and vertical alignment using appropriate tools		5	1	4
		Total	**100**	**20**	**80**
CON/N0114: Carry out IPS / Tremix flooring	PC1. inspect the work area prior to concreting, ensure levelling in case of any undulations observed on the surface prior to concreting	**100**	2.5	0.5	2

works	PC2. ensure surface is prepared appropriately and report any deviation in slope and alignment in PCC		2.5	0.5	2
	PC3. report any gaps in formwork to avoid leakage		2.5	0.5	2
	PC4. report any misalignment in formwork/reinforcement and ensure proper cover for reinforcement is provided		2.5	0.5	2
	PC5. mark reference level on the wall &transfer this marking to all floor locations using appropriates tools		5	1	4
	PC6. mark flooring thickness level and provide dummy level dots at specified intervals for ensuring required slope		5	1	4
	PC7. check the grade of cement prior to use in case of manual mixing		2.5	0.5	2
	PC8. ensure fine aggregate is sieved as per grade requirement		2.5	0.5	2
	PC9. check that concrete is mixed in appropriate proportion		5	1	4
	PC10. visually assess the concrete mix for usability and workability		5	1	4
	PC11. notify superiors for detrimental quality of concrete		5	1	4
	PC12. ensure specified concrete mix is used at allocated location		5	1	4
	PC13. check that panels prepared are of specified size and type		2.5	0.5	2
	PC14. fix the glass, aluminum or brass strip in cement mortar with their tops at appropriate level and according to slope		2.5	0.5	2
	PC15. ensure panels are made as per specified size		2.5	0.5	2
	PC16. ensure concrete is poured in alternate panels/specified panels as per requirement		5	1	4
	PC17. remove excess cement slurry and any marks on the surface		2.5	0.5	2
	PC18. level the concrete surface with a straight edge and to the required finish with a wooden float / trowel		2.5	0.5	2
	PC19. spread cement punning over the IPS concrete for smooth finish surface and allow it to soak into the concrete, as per requirement		2.5	0.5	2
	PC20. provide construction joints and expansion joints as per requirement		2.5	0.5	2
	PC21. level poured concrete to the specified levels maintaining required slope		5	1	4
	PC22. ensure curing of the finished floor surface for		2.5	0.5	2

	the specified time				
	PC23. level the surface and lay stone soling / boulder soling layer		2.5	0.5	2
	PC24. lay the floor with slope maintained in PCC work above the stone soling		2.5	0.5	2
	PC25. remove excess water from the top layer of wet concrete without removing cement of sand particles through vacuum de-watering machines		5	1	4
	PC26. ensure floater work within green concrete surface		2.5	0.5	2
	PC27. carry out Tremix flooring in specified panel on RCC floors ensuring intactness of rebar and cover		2.5	0.5	2
	PC28. cut grooves on concrete at specified intervals for construction joints		2.5	0.5	2
	PC29. provide expansion joints as per requirement		2.5	0.5	2
	PC30. carry out curing of finished concrete as per specifications		2.5	0.5	2
	PC31. ensure finished levels have required slope		2.5	0.5	2
		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
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		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
	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 authority	**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: • 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		10	2	8

	identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes				
	PC12. apply ergonomic principles wherever required		10	2	8
		Total	**100**	**20**	**80**