Model Curriculum

QP Name: Rural Mason-Helper

QP Code: CON/Q3604

QP Version: 1.0

NSQF Level: 2

Model Curriculum Version: 1.0

Construction Skill Development Council of India|| Construction Skill Development Council of India (CSDCCI), CPB – 103 & 104, Block-4B, DLF corporate Park, Phase – III, MG Road Gurugram – 122002 Near Guru Dronacharya Metro Station

Table of Contents

Training Parameters

Sector	Construction Skill Development Council of India
Sub-Sector	Real Estate and Infrastructure Construction
Occupation	Masonry-Rural
Country	India
NSQF Level	2
Aligned to NCO/ISCO/ISIC Code	NCO-2015/7111.9900
Minimum Educational Qualification and Experience	Ability to read and write
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	31/03/2022
Next Review Date	31/03/2025
NSQC Approval Date	31/03/2025
QP Version	1.0
Model Curriculum Creation Date	19/06/2021
Model Curriculum Valid Up to Date	31/03/2025
Model Curriculum Version	1.0
Minimum Duration of the Course	270 hrs
Maximum Duration of the Course	270 hrs

Program Overview

This section summarizes the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills.

- Explain the role and responsibilities of a rural mason helper.
- Discuss the career progression options for a rural mason helper.
- Identify different tools and components used for erection of a single pole scaffolding.
- Erect and dismantle single pole scaffolding up to 2.4 metres height.
- Handle various tools, materials and equipment used for masonry, concreting, shuttering carpentry, and bar bending work.
- Shift, stack and store tools, materials and equipment used at construction site.
- Prepare cement mortar/concrete mix for masonry work.
- Perform curing of newly built structures for specified period.
- Perform preparatory work prior to earthwork.
- Perform earthwork at the construction site which include soil cutting dressing work etc.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration (hrs.)	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
Bridge Module:	08:00	00:00	00:00	00:00	**08:00**
CON/N3609 *Erect and dismantle single pole staging up to 2.4 metres under close supervision* **NOS Version No. 1.0 NSQF Level 2**	**07:00**	**00:00**	**45:00**	**00:00**	**52:00**
Perform erection and dismantle of single pole scaffolding up to 2.4 meters	07:00	00:00	45:00	00:00	52:00
CON/N3610 *Identify, handle, shift and stack materials, tools and equipment relevant to rural construction work and perform housekeeping work* **NOS Version No.1.0 NSQF Level 2**	**15:00**	**00:00**	**45:00**	**00:00**	**60:00**
Handle and store materials, tools and	15:00	00:00	45:00	00:00	60:00

equipment required for the construction work					
CON/N3611 *Prepare cement mortar /concrete mix under instructions and carry out curing of masonry structure for rural construction works* **NOS Version No.1.0 NSQF Level 2**	**15:00**	**00:00**	**75:00**	**00:00**	**90:00**
Prepare cement mortar /concrete mix and curing of newly built structures	15:00	00:00	75:00	00:00	90:00
CON/3612 *Carry out manual earthwork for rural construction works* **NOS Version No.1.0 NSQF Level 2**	**15:00**	**00:00**	**45:00**	**00:00**	**60:00**
Perform earthwork manually	15:00	00:00	45:00	00:00	60:00
Total Duration	**60:00**	**00:00**	**00:00**	**210:00**	**270:00**

Module Details

Module 1: Introduction to Rural Mason-Helper
Bridge Module

Terminal Outcomes:

- Explain the role and responsibilities of a Rural mason-helper.
- Discuss the career progression options for a Rural mason-helper.

Duration: _08:00_	**Duration**: _00:00_
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Discuss the role and responsibilities of the job role of rural mason helper. • Define the personal attributes required in the masonry- rural occupation. • Explain the future career progression for the rural mason helper.	
Classroom Aids:	
Computer, printer, projector, white board/ flip chart, marker and duster	
Tools, Equipment and Other Requirements	
N.A.	

Module 2: Perform erection and dismantle of single pole scaffolding up to 2.4 metres under close supervision
Mapped to CON/N3609, v 1.0

Terminal Outcomes:

- Identify different tools and components used for erection of a single pole scaffolding.
- Erect and dismantle single pole scaffolding up to 2.4 metres height.

Duration: *07:00*	Duration: *45:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- Describe single pole staging and its purpose of its erection. - Identify the common materials and tools used for erection of single pole staging using bamboo, ballies etc. - Describe characteristics of ideal base of scaffolding and its preparation. - Discuss the sequence for the erection and dismantling of the single pole scaffolding. - Discuss the safety measures and safety components used during the erection of the scaffolding.	- Demonstrate the use of PPE and safety measures to be followed during the erection of scaffolding. - Demonstrate shifting and stacking of required materials, components, tools and tackles at the instructed location. - Prepare the base required for the erection of single pole scaffolding following processes such as cleaning, levelling and compacting of ground. - Demonstrate the erection of single pole scaffolding up to 2.4 metres height using different hand tools like hammer, spanner, pulleys, hooks, ropes etc. - Perform visual checks on the staging components to ascertain their usability and safety. - Dismantle the erected scaffold and, stack and store its various components as per standard practices. - Perform appropriate housekeeping at the work location.
Classroom Aids:	
Computer, printer, projector, white board/ flip chart, marker and duster	
Tools, Equipment and Other Requirements	
Hammer, Spanner (set), Wrench, Pulley, Rope, Nuts and bolts, Measuring tape, Spirit level, Plumb-bob, Mason's line, Helmet, Safety shoes, Safety belt, scaffolding materials (bamboo, ballies, etc.)	

Module 3: Handle and store materials, tools and equipment required for the construction work
Mapped to CON/N3610, v 1.0

Terminal Outcome:

- Handle various tools, materials and equipment used for masonry, concreting, shuttering carpentry, and bar bending work.
- Shift, stack and store tools, materials and equipment used at construction site.

Duration: *15:00*	**Duration**: *45:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- List basic masonry and concreting tools and equipment such a s measurement tape, levelling tools (plumb bob, spirit level, line thread), masonry tools (trowel, mortar pan, pointing trowel, bolster chisel, spade, right angle etc.), carpentry tools (hammer, handsaw, nail puller, etc.), bar bending tools, spanners, cutters, concrete floats, hand held concrete mixer etc. - List the materials used in construction work such as cement, sand, aggregate, brick, block, stones, reinforcement bars, shuttering boards, pipes, toilet pan etc. - Explain the safe height up to which certain constructions materials (such as cement, tiles, etc.) should be stored to maintain their quality. - Discuss the sequence for lifting and shifting of various construction materials as per standard safety practices. - Discuss the reuse and disposal of construction waste materials.	- Demonstrate the handling and storing of various tools, materials and equipment used for masonry, concreting, shuttering carpentry, and bar bending work. - Identify the shortest and safest possible route for shifting materials for movement of materials at construction site. - Demonstrate the safe working practices for working at height. - Demonstrate the stacking of various materials up to maximum safe height. - Demonstrate the proper methods and sequence of loading, unloading of materials. - Demonstrate the correct body posture followed while lifting and shifting of materials as per ergonomic principles. - Demonstrate the housekeeping procedures required at the workplace. - Demonstrate the safe disposal of the construction waste.
Classroom Aids:	
Computer, printer, projector, white board/ flip chart, marker and duster	
Tools, Equipment and Other Requirements	
Tool box with lock and key, measuring tape/rule, Scale, Steel square, Trowel, Water level, Spirit level, Plumb bob, Straight edge, Mason's hammer, String line, Jointers, Mallets, Wedges, Screeds, Floats, Bolster chisel, rubber/wooden, hammers, Spade, Sponge, Volume box, weighing balance, floats, vibrators, hand operated, concrete mixer, Mortar mixing, board/mortar pan	

Module 4: Prepare cement mortar /concrete mix and curing of newly built structures
Mapped to CON/N3611, v 1.0

Terminal Outcome:

- Prepare cement mortar/concrete mix for masonry work.
- Perform curing of newly built structures for specified period.

Duration: *15:00*	Duration: *75:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- List the raw materials, tools and equipment required for cement mortar and concrete mix preparation. - Describe the initial and final setting time of cement. - Discuss importance of adding right amount of water during cement mortar/ concrete mix preparation. - Discuss role of sieving of fine aggregate (sand) for mortar mix with specified grade sieve wire. - Discuss the methods used to measure the quantity of various construction materials. - Explain the safe and applicable methodology for preparation of platform, placing and mixing of the ingredients. - Discuss methods to store empty cement bags properly. - Explain various curing techniques such as ponding, spraying, and wet covering, etc.	- Prepare a clean, dry and level surface for preparing cement mortar/concrete mix. - Perform pre-wetting of surface and soaking of bricks/ blocks/ stones as part of preparatory works. - Demonstrate the selection of appropriate material, tools and equipment for preparing cement mortar/ concrete mix. - Demonstrate the use of appropriate measuring methods to measure the required quantity of materials. - Demonstrate the proper technique for opening and storing of cement bags. - Demonstrate the preparation of dry mix (cement mortar /concrete) by uniformly mixing of dry ingredients. - Demonstrate the preparation of cement mortar/ concrete mix of required uniformity and consistency by adding appropriate additives and water. - Perform cleaning of tools, equipment and workplace after the completion of the work. - Demonstrate the various curing techniques such as Ponding, Spraying and Wet coverings, etc. over newly built structures.
Classroom Aids:	
Computer, printer, projector, white board/ flip chart, marker and duster	
Tools, Equipment and Other Requirements	
Tool box with lock and key, measuring tape/rule, Scale, Steel square, Trowel, Water level, Spirit level, Plumb bob, Straight edge, Mason's hammer, String line, Jointers, Mallets, Wedges, Screeds, Floats, Bolster chisel, rubber/wooden, hammers, Spade, Sponge, Volume box, weighing balance, floats, vibrators, hand operated, concrete mixer, Mortar mixing, board/mortar pan	

Module 5: Perform earthwork manually
Mapped to CON/N3612, v 1.0

Terminal Outcome:

- Perform preparatory work prior to earthwork.
- Perform earthwork at the construction site which include soil cutting dressing work etc.

Duration: *15:00*	Duration: *45:00*
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
- List the hand tools such as spade, pick axe, shovel, pans, rammer, hand roller, wheel barrow in manual earth cutting activity. - Explain the use of marking tools such as wooden pegs, lime, line threads, ropes for marking on the ground. - Describe the use of rammer, hand roller, earth ramming tools, ladders etc. - Discuss the methods used for working at depth below the ground level employing all safety measures. - Discuss the use of various PPEs and safety tools at the construction site.	- Demonstrate the selection of hand tools, marking tools, compaction tools, ladders, etc. as per the requirement. - Demonstrate the removal of unwanted materials and vegetation from the worksite using appropriate hand tools. - Demonstrate the ways to shift, stack and install fencing/ barricading materials, ladders, ropes, earth cutting and shifting tools at specified locations. - Demonstrate the marking of the area for excavation using appropriate tools as per instruction. - Demonstrate the digging of earth as per required depth using appropriate tools. - Understand the safe practices for working at depth below ground level. - Demonstrate the safe use of ladder to access the earth pits. - Demonstrate to dispose the excavated earth using standard procedures. - Demonstrate the ramming and levelling of the excavated place.
Classroom Aids:	
Computer, printer, projector, white board/ flip chart, marker and duster	
Tools, Equipment and Other Requirements	
Trowel, shovel, spade, pick axe, rammer, wheel barrow, lime powder, wooden peg, hammer, hand roller, source of water, ladder, measuring tape, safety shoes, safety gloves	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	*Specialization*	*Years*	*Specialization*	
Post-Graduation/ Graduation	M. Tech /B. Tech	Six months	Civil Engineering	0	Civil Engineering	Since pre-requisites are for new entrant, no prior experience in training /assessors are mandatory. If someone with prior experience in requisite domain, joins, experience will be measured as relevant industry experience
Diploma	Diploma	One Year	Civil Engineering	0	Civil Engineering	
Graduation/ Ex. Army /ITI /12th pass	Any Graduation/ certificate from Army/ITI certificate in relevant trade/12th pass	Two Years	Working as mason, masonry domain, supervisory work of masonry work	0	Working as mason, masonry domain, supervisory work of masonry work	

Trainer Certification	
Domain Certification	**Platform Certification**
Trainer- 80% in each NOS of Qualification Pack "Rural Mason-Helper, CON/Q03604 v1.0" and 80% overall	Trainers - 80% in each NOS of Qualification Pack "MEP/Q2601, v1.0"and 80% overall

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Assessor Requirements

Assessor Prerequisites					
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	*Specialization*	*Years*	*Specialization*	
Post-Graduation/Graduation	M. Tech /B. Tech	One Year	Civil Engineering	0	Civil Engineering	As a pre-requisite for new entrant, no prior experience in training /assessment is mandatory. However, if someone with prior experience in requisite domain joins, experience will be measured in terms of relevant industry experience
Diploma	Diploma	Two Years	Civil Engineering	0	Civil Engineering	
Graduation/ Ex. Army /ITI /12th pass	Any Graduation/ certificate from Army/ITI certificate in relevant trade/12th pass	Three Years	Working as mason, masonry domain, supervisory work of masonry work	0	Working as mason, masonry domain, supervisory work of masonry work	

Assessor Certification	
Domain Certification	**Platform Certification**
Assessor- 80% in each NOS of Qualification Pack "Rural Mason Helper, CON/Q03604 v1.0" and 80% overall	Assessor-80% in each NOS of Qualification Pack "MEP/Q2701, v1.0", and overall 80%

Assessment strategy

Assessment system Overview

Assessment is done through CSDCI affiliated Assessment Body. Assessors are trained & certified by CSDCI after a 10-day training of assessor's program. Assessments is conducted to gauge and assess the trainee's skill and knowledge competency in the specified areas. The assessment will have both theory and practical components in 20:80 ratio for Rural mason-Helper job role

During the practical task, trainees are assessed on their workmanship, quality of finished product and time management. They will be graded for all their assessments based on the approved assessment strategy which is signed off by CSDCI. The Assessor submits an assessment plan to CSDCI prior to assessments

The assessment plan contains the following information:
- What will be assessed, i.e. the competency based on each NOS based on theory and practical questions
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- duration of assessment
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgments and
- Where appropriate, any supplementary criteria used to make a judgment on the level of performance.

Testing Environment

Training partner shares the batch start date and end date, number of trainees and the job role.

Assessment will be fixed for a day after the end date of training. It could be next day or later. Assessment will be conducted at the training venue/test center.

The knowledge/theory assessments are conducted with proper seating arrangements with enough space between the candidates to prevent copying.

Question set for theory and practical will be distributed to each candidate by the Assessor. Theory testing will include multiple choice questions, pictorial question, etc. which will test the trainee on his theoretical knowledge of the subject. The skill /practical assessments will be conducted in the approved test centers. The Assessment agency/ Assessor will ensure adequate tools and materials are available to conduct the practical test.

The theory and practical assessments will be carried out on same day. If number of candidates are more than 20, more assessors will be organized on same day to complete the assessment

The assessment has to comprise of two components, namely:
1. Knowledge assessment (theory/viva assessment)
2. Skill assessment (practical/hands-on skill assessment)

Mode of assessment

1. Demonstration/Practical for Performance /Skill Assessment
2. Synoptic multiple choice question test
3. Viva   For Knowledge Assessment

Performance/skill assessment: The performance/skill assessment will be conducted through demonstration/practical

For the practical test trainees are assessed through a given task, which they have to complete correctly for them to be marked as passed.

The assessment is conducted in a simulated working environment. Due to this fact, the assessors must note that the naturally occurring evidence of competence is unavailable or infrequent. Simulation must be undertaken in a Realistic Working Environment which provides an environment that replicates the key characteristics of the workplace in which the skill to be assessed is normally employed**.**

Knowledge Assessment: The knowledge assessments are conducted through written test/ viva.

Synoptic test is used for this. It is an MCQ (Multiple Choice Question) test which are prepared externally and externally marked, meaning by agency having no link with training partners. The test may be conducted by the assessor in the oral mode, if required, considering the lack of reading and comprehending acumen (skills) of trainees. In such cases, the assessor will mention it on top of the MCQ submitted to CSDCI.

The assessment strategy, weightage and duration of assessment for helper mason is summarized below:

Assessment Type	Formative or Summative	Strategies	Weightage	Duration (hours)
Knowledge	Summative	MCQ/Viva	20	1.0
skill	Summative	Structured practical task	80	5.0

Assessment Quality Assurance framework

CSDCI has developed assessment criteria framework for each Qualification pack as per National Occupational Standards. The criteria framework includes weightages/marks for each criterion under knowledge and skill. This criterion ensures quality assurance as it ensures valid, consistent and fair assessments at all locations. Issued to the affiliated Assessment body. The Assessment body develop questions based on CSDCI issued assessment criteria.

Evidences in the form of answer sheets in case of knowledge assessments are collected. For skill assessments videos and photographs are prepared as evidence. These are submitted by the assessor to the assessment agency. CSDCI does random checks of the same with the participant/ trainee's ID and ascertains authenticity and validity of assessments.

The training partner will intimate the time of arrival of the assessor and time of leaving the venue. Random spot checks/audit is conducted by CSDCI to monitor assessment.

Methods of Validation

Unless the trainee is registered, the person cannot undergo assessment. To further ensure that the person registered is the person appearing for assessment, id verification is carried out. Aadhar card number is part of registering the candidate for training. This forms the basis of further verification during the assessment.

Assessor conducts the assessment through theory and practical questions developed in accordance with the assessment criteria and guidelines issued by CSDCI. This too is verified by random audits carried out by CSDCI. The assessments may also be carried out on line.

Evidences for assessments are to be collected and submitted to CSDCI for verification as per demand.

Assessment agency is responsible to put details in SIP. CSDCI will also validate the data and result received from the assessment agency.

Method of assessment documentation and access
The assessment agency will upload the result of assessment in the portal. The data will not be accessible for change by the assessment agency after the upload. The assessment data will be validated by CSDCI assessment team. After upload, only CSDCI can access this data.
CSDCI approves the results within five days after results are uploaded on SIP by Assessment Agency.

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site.
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site.
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do **upon the completion of the training**.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do **upon the completion of a module.** A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
QP	Qualification Pack
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
CSDCI	Construction Skill development Council of India
MCQ	Multiple Choice Question