



Model Curriculum

QP Name: Helper Mason

QP Code: CON/Q0101

QP Version: 2.0

NSQF Level: 2

Model Curriculum Version: 1.0

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Training Parameters

Sector	Construction Skill Development Council of India
Sub-Sector	Real Estate and Infrastructure Construction
Occupation	Masonry
Country	India
NSQF Level	2
Aligned to NCO/ISCO/ISIC Code	NCO-2015/ 9313.0301
Minimum Educational Qualification and Experience	5th Standard Pass
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	24/07/2019
Next Review Date	24/07/2023
NSQC Approval Date	22/08/2019
QP Version	Version number 2.0
Model Curriculum Creation Date	19/06/2020
Model Curriculum Valid Up to Date	24/07/2023
Model Curriculum Version	Version number 1.0
Minimum Duration of the Course	254 hrs
Maximum Duration of the Course	300 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.

- Identify different components of scaffold.
- Erect a temporary scaffold up to 3.6 metres height.
- Dismantle and stack a temporary scaffold up to 3.6 metres height.
- Identify different materials, tools and equipment used for masonry work.
- Shift and stack various materials and tools used in masonry work.
- Prepare cement mortar/concrete mix for masonry work.
- Perform curing of masonry structure.
- Identify various hazards at construction site.
- Use PPE's for masonry task.
- Perform safe waste disposal at construction site.
- Use different tools for manual earthwork.
- Describe the process of excavating a pit/ trench of desired depth/ slope, length and width.
- Explain the process of backfilling of excavated pit/trench.

Compulsory Modules

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

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
<i>Bridge Module</i>	6:00 hrs	00:00	--	--	6:00 hrs
CON/N0101 Erect and dismantle temporary scaffold up to 3.6 meter height NOS Version No. 1.2 NSQF Level 2	12:00 hrs	36:00 hrs	--	--	48:00 hrs
Perform erection and dismantle of temporary scaffold up to 3.6 m height	12:00 hrs	36:00 hrs	--	--	48:00 hrs
CON/N0102 Identify, handle, shift and store materials, tools & equipment relevant to masonry work NOS Version No.1.0 NSQF Level 2	10:00 hrs	54:00 hrs	--	--	64:00 hrs
Shift and stack materials, tools and equipment relevant to masonry work	10:00 hrs	54:00 hrs	--	--	64:00 hrs
CON/N0103 Prepare cement mortar /concrete mix and carry out curing of masonry structure NOS Version No.1.0	16:00 hrs	72:00 hrs	--	--	88:00 hrs



NSQF Level 2					
Prepare cement/concrete mix for masonry structure	16:00 hrs	72:00 hrs	--		88:00 hrs
CON/N9001 Work according to personal health, safety and environment protocol at construction site NOS Version No.1.3 NSQF Level 2	12:00 hrs	36:00 hrs	--	--	48:00 hrs
Follow safety norms as defined by organization, adopt healthy and safe work practices	12:00 hrs	36:00 hrs	--	--	48:00 hrs
Total Duration	56:00 hrs	198:00 hrs	--		254:00 hrs



Optional Modules

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

Option 1: Manual Earthwork

NOS and Module Details	Theory Duration	Practical Duration	On-the-Job Training Duration (Mandatory)	On-the-Job Training Duration (Recommended)	Total Duration
CON/N0104 Carryout manual earthwork at construction site NOS Version No.1 NSQF Level 2	10:00 hrs	36:00 hrs	--		46:00 hrs
Perform manual earthwork at construction site	10:00 hrs	36:00 hrs	--		46:00 hrs
Total Duration	10:00 hrs	36:00 hrs	--		46:00 hrs



Module Details

Module 1: Bridge Module: Introduction to Helper Mason job role

Terminal Outcomes:

- Explain the role and responsibilities of Helper Mason.
- Identify the career progression options for the job role for Helper Mason.

Duration: 06:00	Duration: 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none">• Describe the role and responsibilities of a helper mason.• Recall the basic terms used in the occupation of the masonry occupation.• Explain the career progression options for a helper mason.	
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 temporary scaffold up to 3.6 m height

Mapped to CON/N0101

Terminal Outcomes:

- Identify different components of scaffold.
- List tools, materials components required for erection of 3.6-meter scaffold.
- Erect a temporary scaffold up to 3.6 metres height.
- Dismantle and stack a temporary scaffold up to 3.6 metres height.

Duration: 12:00	Duration: 36:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain scaffolding and its purpose. • List the common materials and tools used for erection of scaffolding (pipe, cup lock (vertical and ledgers), H- frames, bamboo and balli. • List the functions of different hand tools like hammer, spanner, pulleys, hooks, ropes, etc., used for erection/ dismantling of scaffolds. • List the visual checks to be carried out on the scaffolding components to ascertain their usability. • Explain the functions of materials, components and accessories used in scaffolding. • Explain the methods adopted during the erection of the scaffold to ensure its safety. • Explain various checks to be done on completion of erection of scaffolds, such as verticality check, stability check and so on. • Explain the sequence and standard procedure to, dismantle the whole scaffold and stack their components. 	<ul style="list-style-type: none"> • Select different components used in temporary scaffolding such as base, toe board, guard rails, platform, walkways, ladder. • Demonstrate preparation of scaffolding base for a scaffold up to 3.6 m height. • Demonstrate erection of a scaffold (up to 3.6 m height) using pipes and couplers/ cup lock system/ H frame using appropriate hand tools. • Demonstrate the process of conducting verticality check, stability check and rigidity check. • Demonstrate the dismantling and stacking of scaffold.
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 , Cup-lock scaffolding components (set), 40 NB pipes, Swivel coupler, Fixed clamp, Steel walers, Steel walkways, Aluminum/ GI ladder, Safety net, Helmet , Safety shoes , Safety belt, Cotton hand gloves, Goggles, Reflective jackets, Safety message boards	



Module 3: Shift and stack materials, tools and equipment relevant to masonry work

Mapped to CON/N0102

Terminal Outcome:

- Identify different materials, tools and equipment used for masonry work.
- Shift and stack various materials and tools used in masonry work.

Duration: 10:00	Duration: 54:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Identify basic tools, equipment and materials used for masonry works. • Describe the use of manual tools used for brick laying, mortar preparation and levelling. • Discuss the level transferring technique using basic levelling devices. • Explain tagging and bagging of common construction materials. • Explain the methods for loading, unloading, lifting and shifting of the construction materials. • Explain the process of returning surplus materials to the store as per the company norms. 	<ul style="list-style-type: none"> • Demonstrate the use of manual tools for mortar preparation, brick laying and levelling. • Apply level transferring technique using basic levelling devices. • Demonstrate tagging and bagging of common construction materials. • Demonstrate safe handling techniques while transferring fluid materials (such as chemicals, admixtures etc.). • Practice safe loading, unloading, lifting and shifting of the construction materials following ergonomic principles.
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, tile scribes or hand held tile cutters, screeds, floats , power wet saws , electric drills, grinders , vibrators , hand operated concrete mixer, Mortar mixing board/mortar pan, Safety helmets, Hand gloves, Safety shoes, Safety harness, Nose mask	



Module 4: Prepare cement/concrete mix for masonry structure

Mapped to CON/N0103

Terminal Outcome:

- Describe the methods for mortar mixing.
- Prepare cement mortar/concrete mix for masonry work.
- Operate manual mortar mixer.
- Perform curing of masonry structure.

Duration: 16:00	Duration: 72:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • List different types of cement mortar/concrete mix. • Recall ratio of different materials required for mixing mortar and concrete by volume for different mixes. • Describe the method for placing and mixing of ingredients for preparation of the cement mortar or concrete mix. • Describe the method for using appropriate measuring volume box/ weighing scales. • Recall different admixtures used in masonry work like accelerators, retarders, anti-freeze compounds like calcium chloride, colouring pigments, evaporative retarders and adhesives for tiles and stones. • Describe the process of handling and operating the hand operated concrete mixer. • Explain the importance and different process of curing. 	<ul style="list-style-type: none"> • Select tools and equipment used for mixing of cement/concrete mix • Identify different types of materials required for cement mortar, concrete mix including other bonding materials/admixtures. • Demonstrate proper method of sieving of fine aggregate with specified grade sieve wire required for mortar preparation. • Demonstrate proper measuring and mixing of ingredients for a homogenous mortar mix using manual mixing. • Demonstrate proper measuring and mixing of ingredients for a homogenous mortar mix using concrete mixer. • Demonstrate the various curing procedures adopted for masonry work.
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, tile scribes or hand held tile cutters, screeds, floats, Wet-power saw, electric drills, grinders, vibrators, hand operated concrete mixer, Mortar mixing board/mortar pan, Safety helmets, Hand gloves, Safety shoes, Safety harness, Nose mask,	



Module 5: Follow safety norms as defined by organization, adopt healthy and safe work practices

Mapped to CON/N9001

Terminal Outcome:

- Identify various hazards at construction site.
- Use PPE's for masonry task.
- Perform safe waste disposal at construction site.

Duration: 12:00	Duration: 36:00
<p>Theory – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Explain the types of hazards at the construction sites and identify the hazards specific to the masonry work. • Recall the safety control measures and actions to be taken under emergency situation. • Explain the classes of fire and types of fire extinguishers. • Explain the importance of participation of workers in safety drills. • Explain the reporting procedure to the concerned authority in case of emergency situations. • Describe the standard procedure for handling, storing and stacking of material, tools, equipment and accessories. • Explain different types of waste at construction sites and their disposal method. • Explain the purpose and importance of vertigo test at construction site. • List out basic medical tests required for working at construction site. • Explain the types and benefits of basic ergonomic principles, which should be adopted while carrying out specific task at the construction sites. • Explain the importance of housekeeping works. 	<p>Practical – Key Learning Outcomes</p> <ul style="list-style-type: none"> • Demonstrate the operating procedure of the fire extinguishers. • Demonstrate different methods involved in providing First aid to the affected person. • Use PPEs as per work requirements during masonry job. • Demonstrate vertigo test. • Demonstrate safe waste disposal practices followed at construction site. • Demonstrate safe housekeeping practices.
<p>Classroom Aids:</p> <p>Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids</p>	
<p>Tools, Equipment and Other Requirements</p> <p>Safety Helmets, Face shield, Overalls, Knee pads, Safety shoes, Safety belts, Safety harness, Safety Gloves, Safety goggles, Particle masks, Ear Plugs, Reflective jackets, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags, Safety Notice board</p>	



Option 1

Module 6: Perform manual earthwork at construction site

Mapped to CON/N0104

Terminal Outcome:

- Use different tools for manual earthwork.
- Demonstrate excavation and backfilling of a pit/trench as per instruction.

Duration: 10:00	Duration: 36:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
<ul style="list-style-type: none"> • Explain the function of different tools used for manual excavation such as spade, pick axe, shovel etc. • Describe the preparatory works, carried out prior to excavation of pit/trench. • Explain the standard procedure of excavation and maintaining required slope, length, width and depth of the excavated pit. • List the types of hand operated compaction equipment - rammers, vibratory plates, hand-rollers and explain their application. • Explain the methods to excavate a pit/ trench of desired depth/ slope, length and width. • Define the standard procedure to backfill the trench and then to compact it using hand operated compactors. 	<ul style="list-style-type: none"> • Select hand tools and power tools required for cutting earth and cleaning excavated pit. • Demonstrate the process of excavation of a pit/trench maintaining required slope, length, width and depth of the excavation using appropriate tools. • Demonstrate the process of backfilling and compacting of pit/trench.
Classroom Aids:	
Computer, printer, projector, white board/ flip chart, marker and duster	
Tools, Equipment and Other Requirements	
Trowel, Pointing Trowel, Shovel, Mortar Pan, Spade, Pick axe, GI bucket 5L capacity, Wheel Barrow, Lime powder, Wooden pegs, Hammer, Hard broom, Source of water, Ladder, Measuring tape, Mason’s line, Hand roller, Plate vibrator, Power source, Helmet, Safety shoes , Cotton hand gloves, goggles, Reflective jackets, Safety message boards	



Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Post-Graduation/Graduation in Engineering	M. Tech in Civil/B.Tech in civil	Half Year	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 in Civil	One Year	Civil Engineering	0	Civil Engineering	
General Graduation	General B.A./B.Sc	Two Years	Working as mason, masonry domain, supervisory work of masonry work	0	Working as mason, masonry domain, supervisory work of masonry work	
Ex. Army /ITI /12 th pass	Graduation certificate from Army/ITI certificate in relevant trade/12 th pas	Three 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- 70 % in each NOS of Qualification Pack "CON/Q0101 v 2.0" & 80% overall	Trainers - 70% in each NOS of Qualification Pack "MEP/Q2601"and 80% overall



Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Post-Graduation/ Graduation	M. Tech in Civil/ B. Tech in Civil	One Year	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 in Civil	Two Years	Civil Engineering	0	Civil Engineering	
General Graduation	General B.A./B.Sc	Three Years	Working as mason, masonry domain, supervisory work of masonry work	0	Working as mason, masonry domain, supervisory work of masonry work	
Ex. Army /ITI /12 th pass	Graduation certificate from Army/ITI certificate in relevant trade/12 th pas	Four 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- 70% in each NOS of Qualification Pack "CON/Q0101 v 2.0" & 80% overall	Assessor-80% in each NOS of Qualification Pack "MEP/Q2701", 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 assessors 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 Helper mason 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 is 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 criteria under knowledge and skill. This criteria 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