



# Model Curriculum

## Foreman- Formwork

**SECTOR: Construction**  
**SUB-SECTOR: Real Estate and Infrastructure Construction**  
**OCCUPATION: Shuttering Carpentry**  
**REF ID: CON/Q0308, V1.0**  
**NSQF LEVEL: 5**





## TABLE OF CONTENTS

<b>1. Curriculum</b>	<b>01</b>
<b>2. Trainer Prerequisites</b>	<b>12</b>
<b>3. Annexure: Assessment Criteria</b>	<b>13</b>

# Foreman-Formwork

## CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a “Foreman-Formwork”, in the “Construction” Sector/Industry and aims at building the following key competencies amongst the learner

<b>Program Name</b>	<b>Foreman- Formwork</b>		
<b>Qualification Pack Name &amp; Reference ID</b>	CON/Q0308, v1.0		
<b>Version No.</b>	1.0	<b>Version Update Date</b>	23-03-2017
<b>Pre-requisites to Training</b>	Preferably 10 <sup>th</sup> Standard with 12 years site experience in same occupation for Non trained worker/ 3 years site experience as a certified Chargehand shuttering carpenter- System for Trained worker		
<b>Training Outcomes</b>	<p><b>After completing this programme, participants will be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Read and interpret drawings, formwork specifications and standards:-</b> Concepts of Numeration and Formwork drawing</li> <li>• <b>Monitor shutter making and assembling process at formwork yard/site :-</b> This unit describes monitoring process for wooden shutter boards making and assembling of shutter boards at formwork yard/site</li> <li>• <b>Ensure erection and dismantling of formwork as per formwork drawings and specifications: -</b> This unit describes work methods to ensure completion of work as per drawing schematic working drawing and numeration/GA drawing</li> <li>• <b>Check and ensure erected formwork is as per specified standards: -</b> This unit describes methods and quality concepts related to shuttering work.</li> <li>• <b>Monitor installation and operation of jump form system:-</b> This unit describes process for monitoring installation and operation of jump form system</li> <li>• <b>Plan, arrange and manage resources for execution of relevant work :-</b> This unit describes optimisation of man, material and machinery to obtain desired results at workplace</li> <li>• <b>Work effectively in a team to deliver desired results at the workplace :-</b> Organised working procedure within a team at site</li> <li>• <b>Plan and organize work to meet expected outcomes: -</b> Prioritizing activities and organising resources to meet desired outcome.</li> <li>• <b>Supervise, monitor and evaluate performance of subordinates at workplace:-</b> This unit describes about supervision &amp; monitoring activities along with evaluation of sub-ordinates work.</li> <li>• <b>Manage workplace for safe and healthy work environment:-</b> This unit describes about Importance of maintaining Health &amp; Safety at work place &amp; measures to be followed while working.</li> </ul>		

This course encompasses 10 out of 10 National Occupational Standards (NOS) of “Foreman-Formwork” Qualification Pack issued by “Construction Skill Development Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p><b>Introduction</b></p> <p><b>Theory Duration</b> (hh:mm) 08:00</p> <p><b>Practical Duration</b> (hh:mm) 00:00</p>	<ul style="list-style-type: none"> <li>• Role description/ functions of the job role</li> <li>• Expected personal attributes from the job role</li> <li>• Brief description about course content, mode of learning and duration of course</li> <li>• Future possible progression and career development provisions on completion of the course</li> </ul>	<p><u>Classroom Requirement</u></p> <ol style="list-style-type: none"> <li>1. Classroom of 30 students capacity</li> <li>2. Black/White board</li> <li>3. Projector/LED Monitor</li> <li>4. Computer</li> <li>5. Trade specific charts and other teaching aids</li> </ol>
2	<p><b>Read and interpret drawings, formwork specification and standards</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N0307</p>	<p><b>Theory:-</b></p> <p><b>Drawing and Specification:</b></p> <ul style="list-style-type: none"> <li>• Standard procedure for reading drawing</li> <li>• Numeration/General Arrangement drawing</li> <li>• Schematic working drawing for Formwork</li> <li>• Co-relation of numeration drawing with Formwork drawing</li> <li>• Drawings specifications</li> <li>• Various type of standardized formwork system</li> <li>• Methods for fixing of Pre-cast segments moulds</li> <li>• Preparation of simplified hand sketches</li> <li>• Calculation of work quantity form drawings</li> <li>• Calculation of material quantity from drawings</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Differentiate between plan, elevation and sectional drawing</li> <li>• Reading of numeration drawing</li> <li>• Explanation of sections provided in drawing</li> <li>• Reading of schematic working drawing for scaffolding and shuttering</li> <li>• Prepare simplified hand sketches for shuttering and scaffolding works</li> <li>• Explain different types of advanced</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		formwork system <ul style="list-style-type: none"> <li>• Explain fixing process for different types of structural element using Pre-cast segments moulds</li> <li>• Prepare method statement for fixing of shutter</li> <li>• Calculate work quantity from numeration/GA drawing</li> <li>• Calculate material quantity from the scope of work</li> <li>• provide alternate solution for shuttering work in case of non-availability of material</li> </ul>	
3	<b>Monitor shutter making and assembling process at formwork yard / site</b>  <b>Theory Duration</b> (hh:mm) 20:00 <b>Practical Duration</b> (hh:mm) 68:00  <b>Corresponding NOS Code</b> CON/N0308	<b>Theory:-</b> <ul style="list-style-type: none"> <li>• Types of timber and plywood</li> <li>• Standard size of timber and plywood used for making of shutter boards</li> <li>• Quality parameter of timber &amp; plywood</li> <li>• Shop drawings for making of shutter boards</li> <li>• Standard size of shutter boards used for shuttering works</li> <li>• Standard size of formwork material and components</li> <li>• Unit weight of standards formwork components</li> <li>• Hand and power tools require for shutter making and assembling</li> <li>• Checking of shutter boards for dimensional accuracy and rigidity</li> <li>• Provision of lifting arrangement for heavy weight shutter boards or metal shutter boards</li> <li>• Types of belts, slings used for lifting and their weight carrying capacity</li> <li>• Repairing process for damaged shutters</li> <li>• Accessories preparation such as wedges, beading, stoppers and filler shutters</li> <li>• Fabrication of shutter boards as per workshop drawings</li> <li>• Fixtures and various components require for making of shutter for system formwork</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• Reconciliation of timber and plywood</li> <li>• Material wastage control</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Identify various types of timber (Hard wood &amp; Soft wood )</li> <li>• Identification of plywood based on type (Commercial plywood BWP and BWR, Water resistant plywood, Marine plywood etc.) thickness and size.</li> <li>• Identify various types of defects in timber such as knots, shakes, rots, twisted fiber etc.</li> <li>• Demonstration of workshop drawing for shutter making and assembling</li> <li>• Demonstrate use of hand tools and power tools for cutting, sizing and planing of timber &amp; plywood</li> <li>• Demonstrate checking of shutter for dimensional accuracy and rigidity</li> <li>• Demonstrate how to provide lifting arrangement based on details provided in workshop drawing</li> <li>• Demonstrate how to identify shutter which can be repair for further use</li> <li>• Demonstrate making of wedges, beading and stopper</li> <li>• Demonstrate assembling of shutter boards for system formwork as per workshop drawing</li> </ul>	
4	<p><b>Ensure erection and dismantling of formwork as per formwork drawings and specifications</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N0309</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Auto-level and its use in transferring of reference levels</li> <li>• Basic tools require for cutting, filling, leveling and compaction of earth</li> <li>• Physical/visual checking for level and compaction of ground surface</li> <li>• Tools, tackles, consumables, material and equipments required for shuttering and scaffolding works</li> <li>• Working platform and access stairs for safe working</li> <li>• Preparatory works required prior to shuttering such as cleaning, removing of concrete laitance, shutter repairing</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• Types of release agent used for different types of sheathing material (Wood, aluminium, iron)</li> <li>• Procedure for layout of formwork as per schematic working drawings</li> <li>• Procedure for erecting formwork for different types of structures and their element</li> <li>• Standard tolerance of shuttering works for different types of structures as per IS code</li> <li>• Lifting and lowering of formwork material</li> <li>• Checklist for shuttering works</li> <li>• Approach for concreting works</li> <li>• Re-propping after de-shuttering</li> <li>• Storage and stacking of formwork components</li> <li>• Dismantling of formwork as per standard procedure</li> <li>• Stripping time of various structural element</li> <li>• Replacement/repair and maintenance of damaged components</li> <li>• Basics of concreting and reinforcement works</li> <li>• Housekeeping</li> <li>• Safety</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Demonstrate transfer of required level and reference points for reinforcement work</li> <li>• Demonstrate how to physically/visually check leveling and compaction of ground surface</li> <li>• Checking of working platform and access stair for safety, stability and rigidity</li> <li>• Demonstrate how to carry out preparatory work checking prior to fixing of shutters</li> <li>• Explain use of release agent on the basis of type of sheathing material</li> <li>• Explain and demonstrate procedure for setting layout of formwork for different types of work</li> </ul>	



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>Perform checking of formwork to decide acceptance of shuttering</li> <li>Perform checking of shuttering works as per shuttering checklist</li> <li>Explain the requirement of re-propping</li> <li>Explain method of de-shuttering for beam, column, slab, corbel, wall, footing etc.</li> <li>Explain requirement of repairing shuttering</li> <li>Explain the sequence of carrying out shuttering, reinforcement and concreting works based on the type of structures</li> <li>Explain housekeeping practices as per standard norms</li> <li>Explain safety practices as per standard norms</li> </ul>	
5	<p><b>Check and ensure erected formwork is as per specified standards</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N0310</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>How to check formwork for line, level and alignment</li> <li>Grout leakage effect and its prevention</li> <li>Stability of formwork and its important</li> <li>Importance of using correct components for the specific work</li> <li>Application of release agent based on the type of sheathing material</li> <li>Requirement of extra support and their location for different types of structure</li> <li>Insets plates, cast in fixing and their fixing during shuttering works</li> <li>Safety measures for fall and edge protection</li> <li>Checking of erected formwork as per formwork checklist and snag list</li> <li>Importance of quality checking and approval by superior/Engineer in-charge</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>Demonstrate checking of erected formwork as per schematic working drawing for measurement</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• Demonstrate checking of erected formwork as per checklist to check line, level, alignment, plumb, support etc.</li> <li>• Demonstrate checking of shuttering against grout leakage prevention and remedial action if gap found</li> <li>• Explain use of release agent on the basis of type of sheathing material</li> <li>• Explain the requirement of extra support and location for different types of structures</li> <li>• Explain the sequence in which insert, cast-in-fixings are fixed as per requirement</li> <li>• Explain importance of clearing snag list</li> <li>• Explain measures to be adopted for edge and fall protection</li> </ul>	
6	<p><b>Monitor installation and operation of Jump form system</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N0311</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Types of Jump form system/Specialized formwork system such as slip form, jump form</li> <li>• Tools, tackles, components and equipments require for installation and operation of jump form system</li> <li>• Fixtures and components of jump form system</li> <li>• Use of anchor cones, ties and sleeves, joints, clamps, hooks, nuts and bolts</li> <li>• Function of hydraulic system</li> <li>• Preparatory works for installation of jump form system</li> <li>• Formwork profiling</li> <li>• Weight of different components, assembled panels</li> <li>• Schematic installation and working drawings</li> <li>• Installation and interconnection of hydraulic system, power units and accessories</li> <li>• Types of cranes and hydraulic jacks required for lifting of jump form system</li> <li>• Operation of jump form system</li> </ul> <p><b>Demonstration/ Practical :-</b></p>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>• Explain various type of jump form system and their requirement</li> <li>• Demonstrate how to carry out profiling of shutter panel</li> <li>• Demonstrate preparatory works requires for installation of jump form system such as marking, level points etc.</li> <li>• Demonstrate alignment, plumb checking</li> <li>• Checking of batter in shutter</li> <li>• Checking of shutter for tightness and rigidity</li> <li>• Checking of installation and interconnection of hydraulic system, power units and accessories</li> <li>• Demonstrate how to monitor rising of jump form system</li> </ul>	
7	<p><b>Plan, arrange and manage resources for execution of relevant work</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N7001</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Calculation of work quantity based on numeration drawing</li> <li>• Calculation of resources requirement (material)</li> <li>• Manpower requirement calculation based on standard productivity norms and type of work</li> <li>• Allocation of work</li> <li>• Optimum utilization of manpower resources</li> <li>• Administration policy for recoding daily labor attendance</li> <li>• Productivity , standards productivity norms for reinforcement works</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Demonstrate how to calculate shuttering work quantity from the numeration drawing</li> <li>• Demonstrate how to calculate productivity</li> <li>• Demonstrate how to calculate manpower requirement</li> <li>• Demonstrate how to provide clear work instruction to sub-ordinates</li> </ul>	
8	<p><b>Work effectively in a team to deliver desired results at the workplace</b></p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>• Method of oral and written communication skills with co-workers, trade seniors while handling and</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N8001</p>	<p>carrying out visual checks on materials, tools and tackles, equipments</p> <ul style="list-style-type: none"> <li>How to interpret scope of shuttering work, material/ tools handling by adhering to instructions or consulting with seniors</li> <li>Method of providing instruction to subordinates or reporting to seniors clearly and promptly</li> <li>Seek necessary support and complete assigned tasks within stipulated time duration</li> <li>Keep good relation and maintain well behavior with co-workers</li> </ul> <p><b>Demonstration/ Practical :-</b> The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition</p> <ol style="list-style-type: none"> <li>Selection of materials, tools or devices for defined purpose under</li> <li>Handling formwork materials, tools and equipments</li> <li>Carrying out cutting, sizing and planing of timber</li> <li>Carrying out monitoring of shutter making activity</li> <li>Ensuring erection and dismantling of formwork as per formwork drawings and specifications</li> <li>Inspecting quality of shuttering works with the help of team members for line, level, alignment, support, rigidity etc.</li> </ol>	
9	<p><b>Plan and organize work to meet expected outcomes</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N8002</p>	<p><b>Theory:-</b></p> <ul style="list-style-type: none"> <li>Basic concept of productivity, sequence of working and implementation of safety and organizational norms while working</li> <li>Optimization of resources</li> <li>To plan shuttering work within defined scope of work</li> <li>Upkeep, storing and stacking methods of tools, materials used for domain specific works</li> <li>Requisition of resources, reporting for requirement of resources orally and in written to concerned authority</li> <li>Importance of housekeeping,</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p><b><u>Demonstration/ Practical :-</u></b>            The skills will be developed and practiced while carrying out following trade related activities in a predictable and familiar working condition</p> <ol style="list-style-type: none"> <li>1. Selection of materials, tools or devices for defined purpose in an optimum manner</li> <li>2. Handling material, tools and equipments relevant to reinforcements works</li> <li>3. Prioritize all works/ activities</li> <li>4. Planning cutting and bending activities</li> <li>5. Carrying out erection and dismantling of formwork as per formwork drawings</li> <li>6. Optimum use of resources while performing task</li> <li>7. Adherence to stipulated timelines for completion of shuttering work</li> </ol>	
10	<p><b>Supervise, monitor and evaluate performance of subordinates at workplace</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N8003</p>	<p><b><u>Theory:-</u></b></p> <ul style="list-style-type: none"> <li>• Establishment of targets</li> <li>• Establishment of performance standards</li> <li>• Methods of progressive checking for shuttering works</li> <li>• Quality checks for shuttering work as per standards and drawing requirement</li> <li>• Monitoring and evaluation of performance of sub-ordinates as per quality standards</li> <li>• Organizational policies and procedures for workmen engagement</li> </ul> <p><b><u>Demonstration/ Practical :-</u></b></p> <ul style="list-style-type: none"> <li>• Identify and allocate work to sub-ordinates based on the requirement</li> <li>• Calculate expected productivity requirement to meet assigned task and deadlines for work completion</li> <li>• Calculate man, material and tools requirement based on the scope of work</li> <li>• Carry out progressive checking of shuttering work to ensure quality outcome</li> <li>• Carry out final check for the work performed by the sub-ordinates to meet drawing requirement</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
11	<p><b>Manage workplace for safe and healthy work environment</b></p> <p><b>Theory Duration</b> (hh:mm) 20:00</p> <p><b>Practical Duration</b> (hh:mm) 68:00</p> <p><b>Corresponding NOS Code</b> CON/N9002</p>	<p><b>Theory :-</b></p> <ul style="list-style-type: none"> <li>• Housekeeping Standard procedures</li> <li>• Handling and stacking of materials at workplace/stores</li> <li>• Various kind of Hazards associated with shuttering work and in general in construction sites</li> <li>• Safety, its importance and protective measures</li> <li>• Correct uses of tools and tackles</li> <li>• Personal Protective Equipments (PPE's)               <ol style="list-style-type: none"> <li>1. Head protection (Helmets)</li> <li>2. Ear protection</li> <li>3. Fall protection</li> <li>4. Foot protection</li> <li>5. Face and Eye protection</li> <li>6. Hand &amp; body protection</li> <li>7. Respiratory protection</li> </ol> </li> <li>• Organizational Policies related to Health, Environment and Safety:               <ol style="list-style-type: none"> <li>1. Methods of receiving or sourcing information</li> <li>2. Dealing with accidents and emergencies associated with the work and environment</li> <li>3. Reporting</li> <li>4. Emergency evacuation</li> <li>5. Fire risks and safe exit procedures</li> </ol> </li> <li>• Reporting procedure to the concerned authority in emergency situations</li> <li>• Fire protection equipments, their type and uses based on requirement and type of fire</li> </ul> <p><b>Demonstration/ Practical :-</b></p> <ul style="list-style-type: none"> <li>• Demonstrate methods for safe handling and stacking of formwork material</li> <li>• Demonstrate use of Safety PPE</li> <li>• Demonstrate safe handling of tools and tackles Relevant to shuttering works</li> <li>• Identification of hazards and reporting procedures</li> <li>• Reporting in case of emergency</li> </ul>	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> <li>Demonstrate and explain use of Fire extinguishers based on the types of fire</li> </ul>	
	<p><b>Total Duration</b></p> <p><b>Theory Duration</b> <b>102:00</b></p> <p><b>Practical Duration</b> <b>298:00</b></p>	<p><b>Unique Equipment Required:</b></p> <p><u>Classroom Requirement</u> Classroom of 30 students capacity, Black/White board, Projector/LED Monitor, Computer, Trade specific charts and other teaching aids</p> <p><u>Hand Tools</u> Claw Hammer, Handsaw, Tenonsaw, Iron Jack Planner , Wooden Marking Gauge Woden Mortise Gauge, Spirit Level , Tri-Square, Auger , Steel Measuring Tape, Farmer Chisel , Farmer Chisel , Mortise Chisel , Cutting Player, Screw Driver 10", Marking Knife / Scribe , Wooden Mallet, Oil Stone (Rough / Smooth), Center Punch , Bench Vice, Hacksaw Frame with blade, Triangle file - 6mm (Medium) , Half Round File &amp; Rasp cut file, Drill Bit, Plumb Bob, Ring Spanner , Double End Spanner, Screw Spanner 12" LM, Carpenter Working Table, Nail Bar</p> <p><u>Measuring Instruments</u> Measuring tape, Spirit level, Water level tube, Plumb-bob, Mason's line</p> <p><u>General requirement</u> Lifting appliance (Sling, Shackle, Belts)</p> <p><u>Materials</u> Conventional formwork for Footing, column, wall, beam, slab , Conventional scaffolding components (set)/bamboo, bellies, pipe &amp; coupler scaffold components , 40 NB pipes, Swivel coupler, Fixed clamp, Steel walkways, Aluminium/ GI ladder, Safety net, Tying thread</p> <p><u>PPEs</u> Safety Helmet, Safety goggles, Safety shoes, Safety belt, Cotton gloves, Ear plugs , Reflective jackets, Dust mask, Fire Prevention kit</p>	

**Grand Total Course Duration: 400 Hours, 0 Minutes**

*(This syllabus/ curriculum has been approved by Construction Skill Development Council of India)*

## Trainer Prerequisites for Job role: “Foreman Formwork” mapped to Qualification Pack: “CON/Q0308, v1.0”

Sr. No.	Area	Details
1	<b>Description</b>	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “CON/Q0308”.
2	<b>Personal Attributes</b>	Aptitude for conducting training, and pre/ post work to ensure competent, employable candidates at the end of the training. Strong communication skills, interpersonal skills, ability to work as part of a team; a passion for quality and for developing others; well-organised and focused, eager to learn and keep oneself updated with the latest in the mentioned field
3	<b>Minimum Educational Qualifications</b>	ITI/12 <sup>th</sup> standard pass
4a	<b>Domain Certification</b>	Trainer/Assessor- 50% in each NOS of Qualification Pack “CON/Q0308” & 80% overall , Lead trainer/Lead Assessors- 50% in each NOS of Qualification Pack “CON/Q0308” & 90% overall
4b	<b>Platform Certification</b>	Trainer/Assessor-80% in each NOS of Qualification Pack “MEP/Q0102” or “MEP/Q0104”, Lead trainer/ Lead Assessors- 90% in each NOS of Qualification Pack “MEP/Q0101” or “MEP/Q0103”and overall 90%
5	<b>Experience</b>	i. Technical Degree holder with minimum three years of Field experience and preferably two years of teaching experience or, ii. In case of a Diploma Holder five years of field experience and preferably two years of teaching experience or, iii. In case of ITI/12 <sup>th</sup> pass minimum eight years of field experience and preferably two years of teaching Experience.





## **CRITERIA FOR ASSESSMENT OF TRAINEES**

<b><u>Job Role</u></b>	Foreman- Formwork
<b><u>Qualification Pack</u></b>	CON/Q0308
<b><u>Sector Skill Council</u></b>	Construction

### **Guidelines for Assessment**

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the knowledge part will be based on knowledge bank of questions created by Assessment Bodies subject to approval by SSC
3. Individual assessment agencies will create unique question papers for knowledge/theory part for assessment of candidates as per assessment criteria given below
4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training centre based on assessment criteria.
5. The passing percentage for each QP will be 70%. To pass the Qualification Pack, every trainee should score a minimum of 70% individually in each NOS.
6. The Assessor shall check the final outcome of the practices while evaluating the steps performed to achieve the final outcome.
7. The trainee shall be provided with a chance to repeat the test to correct his procedures in case of improper performance, with a deduction of marks for each iteration.
8. After the certain number of iteration as decided by SSC the trainee is marked as fail, scoring zero marks for the procedure for the practical activity.
9. In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOSs to pass the Qualification Pack within the specified timeframe set by SSC.
10. Minimum duration of Assessment of each QP shall be of 4hrs/trainee.



		Marks Allocation			
		Total Mark	Out Of	Theory	Skills Practical
<b>CON/N0307: Read and interpret drawings, formwork specification and standards</b>	PC1. read & interpret details from relevant formwork schematic working drawings	<b>100</b>	10	4	6
	PC2. read and interpret details from general arrangement drawing		10	4	6
	PC3. read and co-relate schematic working drawing with the GA drawing		10	4	6
	PC4. read and understand all specification provided in the relevant drawing		10	4	6
	PC5. read and understand schedule provided for completion of shuttering work		10	4	6
	PC6. read method statement for erection of formwork & shuttering		10	4	6
	PC7. read, understand & follow manufactures specification/instruction for erection of standardized formwork		10	4	6
	PC8. read, understand & follow manufactures specification/instruction for fixing of shutter or for making of pre-cast segment moulds		10	4	6
	PC9. prepare hand sketches for describing work to subordinates		10	4	6
	PC10. carryout calculation for required quantity of relevant material from schematic working drawing of formwork		10	4	6
			<b>Total</b>	<b>100</b>	<b>40</b>
<b>CON/N0308: Monitor shutter making and assembling process at formwork yard / site</b>	PC1. check and ensure quality of plywood & timber prior to use	<b>100</b>	10	4	6
	PC2. check and ensure all tools are available for shutter making & assembling process		7	3	4
	PC3. ensure cutting of plywood & timbers is as per workshop drawing		10	4	6
	PC4. check & ensure shutter panel board for dimensional accuracy & rigidity		10	4	6
	PC5. ensure operation of power tools is as per instruction & specification		10	4	6
	PC6. ensure availability of all tools, components, materials & fixture for assembling of shutters		7	3	4
	PC7. check & ensure shutter is fabricated as per workshop drawing		10	4	6
	PC8. check & ensure all components & fixture are fixed properly		8	3	5
	PC9. check provision for lifting arrangement are provided in case of lifting of heavy weight formwork		6	2	4
	PC10. ensure proper repairing of damaged shutters for reuse		6	2	4

	PC11. ensure making of accessories such as wedges, beading, stoppers and filler shutters as required at site		5	2	3
	PC12. coordinate with site or superior to meet demand at site		11	5	6
		<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/N0309: Ensure erection and dismantling of formwork as per formwork drawings and specifications</b>	PC1. ensure survey works are complete so as to provide required level & reference points for relevant work	<b>100</b>	2	1	1
	PC2. check and ensure that all relevant marking is complete as per requirement & applicability		4	2	2
	PC3. check and ensure that cutting, filling, levelling and compaction of earth if required prior to commencement of work		3	1	2
	PC4. ensure that base is well compacted and levelled		3	1	2
	PC5. ensure workplace is clear of construction debris and unwanted material		2	1	1
	PC6. ensure all guard rails, kerb board safety nets are in place		3	1	2
	PC7. ensure all tools, tackles, consumables, components, materials and fixtures are available before commencement of work		3	1	2
	PC8. ensure that shutter surfaces have been cleaned and concrete laitance has been removed prior to erection		2	1	1
	PC9. ensure suitable release agent is available for applying to sheathing material		3	1	2
	PC10. ensure that formwork is set out as per schematic working drawings		8	3	5
	PC11. ensure that appropriate procedure is followed while erecting formwork and while installing necessary supports, braces, penetrations, embedded parts, etc.		8	3	5
	PC12. ensure lifting & lowering of formwork material using crane is done safely and appropriately		4	2	2
	PC13. instruct & ensure manufactures specification is followed while erection of any standardized formwork		5	2	3
	PC14. ensure that there are no gaps or openings in formwork from which poured concrete may leak		4	1	3
	PC15. ensure tightness of tie rods, supports, bracings and other fixtures		4	2	2
	PC16. prepare safe approaches for concrete pouring		4	2	2
	PC17. ensure all working platform are safe for performing shuttering activity		5	2	3
	PC18. ensure re-propping is done as per instruction, if required		5	2	3
	PC19. point out errors to workers and suggest remedial action / demonstrate repair work as and when required		3	1	2
	PC20. ensure lifting & lowering of formwork material using crane is done safely and appropriately		5	2	3
	PC21. ensure safe storage and stacking of formwork components		5	2	3

	PC22. ensure that all manufacturer's instructions/ specification are followed while dismantling standardized formwork		4	2	2
	PC23. ensure that formwork is dismantled sequentially and safety after receiving removing instruction or as per specified stripping time		8	3	5
	PC24. ensure replace/repair and maintenance of damage components		3	1	2
		<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/N0310: Check and ensure erected formwork is as per specified standards</b>	PC1. check that formwork is erected in accordance with the schematic working drawing	<b>100</b>	20	8	12
	PC2. check for line, level, alignment of formwork		10	4	6
	PC3. check props used are in plumb, line & as per spacing mentioned/ specified and resting on firm base		6	3	3
	PC4. check the grout leakage prevention measures are taken		6	2	4
	PC5. check for lateral stability of formwork		10	4	6
	PC6. check whether correct components are used for erection and providing support to formwork		6	3	3
	PC7. check whether the specified release agent is used on sheathing material		6	2	4
	PC8. check places where extra support to be provided		10	4	6
	PC9. check for any inserts, cast in fixings and secure at right position		6	2	4
	PC10. check for all safety measures, especially fall & edge protection provided		10	4	6
	PC11. check final erected formwork & if any corrections required ensure its rectification		10	4	6
			<b>Total</b>	<b>100</b>	<b>40</b>
<b>CON/N0311: Monitor installation and operation of Jump form system</b>	PC1. prepare site for installation of Jump form system	<b>100</b>	5	2	3
	PC2. assemble shutters panel as per schematic working drawing and assembly plans		5	2	3
	PC3. ensure work instructions are followed during installation		4	2	2
	PC4. ensure profiling of shutter panel as per required shape of structures		4	2	2
	PC5. ensure all fixtures including joints, clamps, hooks, nuts & bolts are fixed properly		4	2	2
	PC6. check for adequate batter in shutter		4	2	2
	PC7. ensure tightness & rigidity of assembled shutter		4	1	3
	PC8. ensure all survey points are provided		4	1	3
	PC9. ensure proper installation and interconnection of hydraulic system, power units and accessories as per manufacturer specifications & standards		8	3	5
	PC10. ensure working deck is prepared for movement of man & materials		5	2	3
	PC11. ensure placing of climbing rod/MS rod		3	1	2

	PC12. check & ensure other relevant work are completed		4	2	2
	PC13. ensure anchor & ties are fixed as per designed		8	3	5
	PC14. ensure proper fixings of sleeves , embedded parts are undisturbed		4	2	2
	PC15. monitor proper functioning of hydraulic jack and cranes		12	4	8
	PC16. monitor lifting ensuring line, level & alignment		10	4	6
	PC17. monitor rising of formwork using crane or hydraulic jacks		6	2	4
	PC18. monitor rising of climbing profile		6	3	3
	<b>Total</b>		<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/N7001: Plan, arrange and manage resources for execution of relevant work</b>	PC1. determine quantum and nature of work under assigned activity	100	5	2	3
	PC2. calculate requirement of manpower for assigned activities		7.5	3	4.5
	PC3. submit manpower requirement to superiors		5	2	3
	PC4. allocate and extract work as per plan		7.5	3	4.5
	PC5. provide clear instructions to workmen for execution of work		7.5	3	4.5
	PC6. ensure optimum utilization of manpower resources		7.5	3	4.5
	PC7. record the daily labour attendance		7.5	3	4.5
	PC8. record the daily productivity report		7.5	3	4.5
	PC9. estimate quantity of assigned work		7.5	3	4.5
	PC10. estimate requirement for material, components and fixtures		7.5	3	4.5
	PC11. estimate equipment, tools and accessories required		7.5	3	4.5
	PC12. submit material, equipment and tool requirement to superiors		7.5	3	4.5
	PC13. allocate material , equipment and tools to workmen and extract the work as per plan		7.5	3	4.5
	PC14. provide clear instructions for optimized use of resources		7.5	3	4.5
<b>Total</b>	<b>100</b>	<b>40</b>	<b>60</b>		
<b>CON/N8001: Work effectively in a team to deliver desired results at the workplace</b>	PC1. pass on work related information/ requirement clearly to the team members	100	10	4	6
	PC2. inform co-workers and superiors about any kind of deviations from work		10	4	6
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		20	8	12
	PC4. receive instructions clearly from superiors and respond effectively on same		10	4	6
	PC5. communicate to team members/subordinates for appropriate work technique and method		10	4	6
	PC6. seek clarification and advice as per requirement and applicability		10	4	6
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		15	6	9



	PC8. work together with co-workers in a synchronized manner		15	6	9
	<b>Total</b>		<b>100</b>	<b>40</b>	<b>60</b>
<b>CON/8002: Plan and organize work to meet expected outcomes</b>	PC1. understand clearly the targets and timelines set by superiors	<b>100</b>	12.5	5	7.5
	PC2. plan activities as per schedule and sequence		10	4	6
	PC3. provide guidance to the subordinates to obtain desired outcome		12.5	5	7.5
	PC4. plan housekeeping activities prior to and post completion of work		7.5	3	4.5
	PC5. list and arrange required resources prior to commencement of work		10	4	6
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		7.5	3	4.5
	PC7. complete the work with allocated resources		7.5	3	4.5
	PC8. engage allocated manpower in an appropriate manner		5	2	3
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		5	2	3
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		5	2	3
	PC11. organize work output, materials used, tools and tackles deployed,		10	4	6
	PC12. processes adopted to be in line with the specified standards and instructions		7.5	3	4.5
			<b>Total</b>	<b>100</b>	<b>40</b>
<b>CON/N8003: Supervise, monitor and evaluate performance of subordinates at workplace</b>	PC1. fix expected targets for the respective gang as per site requirements and allocate work to subordinates	<b>100</b>	15	6	9
	PC2. establish expected performance standards and expectations for the respective gang of workers to meet the desired outcomes		15	6	9
	PC3. inspect assigned work to the respected gang of workers through progressive checking		20	8	12
	PC4. observe and verify the work activities performed by the subordinates at the construction site		20	8	12
	PC5. monitor overall performance of subordinates on the designed measures to ensure quality requirements set by the concerned authority		15	6	9
	PC6. ensure adherence to the organizational policies and procedures for all relevant construction activities by the workmen subordinations		15	6	9
			<b>Total</b>	<b>100</b>	<b>40</b>
<b>CON/N9002: Manage workplace</b>	PC1. Ensure proper housekeeping at workplace		5	2	3
	PC2. Implement safe handling , stacking methods at workplace / store		5	2	3



<b>for safe and healthy work environment</b>	PC3. Ensure that health and safety plan is followed by all subordinates	5	2	3
	PC4. Identify any hazard in workplace and notify them to appropriate authority	5	2	3
	PC5. ensure that all safety and protection installation are correctly placed & adequate	5	2	3
	PC6. Ensure safe access is available at work place for movement of workers & materials.	5	2	3
	PC7. Ensure safe use of tools and tackles by the workmen as per applicability	5	2	3
	PC8. ensure appropriate use of following Personal Protective Equipment (PPE) as per applicability:	10	4	6
	Head Protection (Helmets)			
	• Ear Protection			
	• Fall Protection			
	• Foot Protection			
	• Face and Eye Protection,			
	• Hand &Body Protection	5	2	3
	• Respiratory Protection			
	PC9. Maintain entrances & exit from confined spaces , excavated pits and other location in concurrence with safety parameters or instruction form safety personals.			
	PC10. Ensure organizational policies and procedures are followed for health , safety and welfare, in relation to:			
• methods of receiving or sourcing information	10	4	6	
• dealing with accidents and emergencies associated with the work and environment				
• reporting				
• stooping work				
• evacuation				
• fire risks and safe exit procedures	5	2	3	
PC11. follow procedures for accident recording and reporting as per organizational and statutory requirements	7.5	3	4.5	
PC12. ensure effective adherence to response to emergency procedures / protocols				





	PC13. report any case of emergency / risks to the concern people at the construction site		7.5	3	4.5
	PC14. report any perceived risk hazards to the superiors / concerned EHS		7.5	3	4.5
	PC15. demonstrate the use of fire protection equipments for different type of fire hazard		7.5	3	4.5
	PC16. implement control measures to reduce risk & meet legal requirement as per organizational policies		5	2	3
		<b>Total</b>	100	40	60