



Model Curriculum

Rigger Precast Erection

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: Rigging
REF ID: CON/Q0703, Version 2.0
NSQF LEVEL: 4





TABLE OF CONTENTS

1. Curriculum	01
2. Trainer Prerequisites	07
3. Annexure: Assessment Criteria	07



Rigger Precast Erection

CURRICULUM / SYLLABUS

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

Program Name	Rigger Precast Erection		
Qualification Pack Name & Reference ID	CON/Q0703 Version 2.0		
Version No.	2.0	Version Update Date	04-03-2020
Pre-requisites to Training	Nil		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none">• Perform shifting of precast units as per instruction• Demonstrate process of providing support in heavy lifting of precast units• Demonstrate how to unload, position and align the RCC precast components• Demonstrate the grouting work as per instruction• Perform the application of caulking agents in RCC Precast components• Interact and communicate effectively with co-workers, superiors and sub-ordinates within the team and across interfacing teams to ensure effective execution of assigned task.• Prioritise activities to plan and organise work as per expected outcomes• Follow safety norms as defined by organization, adopt healthy and safe work practices		

This course encompasses 6 out of 6 National Occupational Standards (NOS) of “Rigger Precast Erection” Qualification Pack issued by “Construction Skill Development Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction to rigging occupation Theory Duration (hh:mm) 08:00 Practical Duration (hh:mm) 00:00	<ul style="list-style-type: none"> • Explain roles and responsibilities of the job role- Rigger Precast Erection • Explain expected personal attributes required in rigger-Precast Erection • Recall the basic terms used in rigger precast erection • Discuss future career progression for Rigger-precast Erection 	
2	Perform shifting of precast units as per instruction Theory Duration (hh:mm) 16:00 Practical Duration 24:00 Corresponding NOS Code CON/N0709	<ul style="list-style-type: none"> • Explain the basic principles of measurement, geometry and arithmetic calculation relevant to rigging work • Describe the method of conversion of units of linear measurements • Select rigging tools/ gears used in shifting of heavy precast units • Demonstrate how to anchor and hook up the precast structure with lifting equipment using suitable rigging gears • Demonstrate how to tie down and stabilize the precast unit to the transporting vehicle using chains, binders, belts etc • Demonstrate unloading of the precast unit from the transporting vehicle to the specified location • Perform visual checks on the precast units for chipped edges, cracks, blemishes, stains and edge conditions 	<ul style="list-style-type: none"> • Spud Wrenches • Open-End Wrenches. • Crescent Wrenches. • Hammer • Nibbler • pliers • Impact Wrench • Drilling machine with bits • Electric screw gun • Electric hexa s • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water lev • Tower crane • Mobile crane • Forklift • Scissor lift • Hydraulic jacks • Electric Wire Rope Hoist • Electrical winch • Electrical • Slings • Wire ropes • Shackles • Spreader board • Chain • Link • Eye hook • Eye bolts • Bull dog grips • Clamp • socket

Sr. No.	Module	Key Learning Outcomes	Equipment Required
3	<p>Demonstrate how to provide support in heavy lifting of precast units</p> <p>Theory Duration (hh:mm) 8:00</p> <p>Practical Duration 34:00</p> <p>Corresponding NOS Code CON/N0709</p>	<ul style="list-style-type: none"> • State nature of base (level and compaction) required for equipment during lifting • Explain working mechanism of the lifting equipment like cranes, winches, etc. • Perform checks on precast components to confirm the condition of embedded parts • Report to seniors in case of any discrepancy in embedded parts • Recall the gestures/ signals used during load lifting work • Demonstrate the procedure to inspect lifting gears, tools and tackles for their proper workability • Perform preparation of the base for the lifting equipment • Demonstrate how to attach slings, lifting belts, shackles or hooks safely to the load • Demonstrate how to attach tag line to the load at the required location • Demonstrate process of controlling the position of suspended loads using tag line 	
4	<p>Unload, position and align RCC precast components</p> <p>Theory Duration (hh:mm) 32:00</p> <p>Practical Duration (hh:mm) 84:00</p> <p>Corresponding NOS Code CON/N0710</p>	<ul style="list-style-type: none"> • Identify rigging tools and tackles required for precast erection • Explain the procedure of requisitions of material, tools and equipment • Explain method of checking alignment of the erected structures • Recall the signals used to guide equipment's operator to lift and locate the precast unit to its final position • Demonstrate unloading of precast units at specific location • Demonstrate how to stabilize the units in its position using temporary bracing supports and connections such as pony clamp, such as pony clamps, tilt up jacks, turn buckles, guy lines • Demonstrate the checks for ensuring vertical and horizontal alignment of the precast unit 	<ul style="list-style-type: none"> • Spud Wrenches • Open-End Wrenches. • Crescent Wrenches. • Hammer • Nibbler • pliers • Drilling machine with bits • Electric screw gun • Electric hexa saw • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water level • Tower crane • Mobile crane • Forklift • Scissor lift • Hydraulic jacks • Electric Wire Rope Hoist • Electrical winch • Electrical chain hoist • Slings • Wire ropes • Shackles

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			<ul style="list-style-type: none"> • Spreader board • Chain • Link • Eye hook • Eye bolts • Bull dog grips • Clamp • socket
5	<p>Demonstrate grouting work as per instruction</p> <p>Theory Duration (hh:mm) 16:00</p> <p>Practical Duration (hh:mm) 32:00</p> <p>Corresponding NOS Code CON/N0711</p>	<ul style="list-style-type: none"> • Explain the ideal surface condition of the surface/structure required for grouting work • Identify the tools and tackles used for cleaning and grouting work • Explain the method to prevent flow able grouting agents from leakage • Explain standard practices relevant to application of grouting agent • Demonstrate the process of cleaning of surfaces prior to grouting work as per prescribed tools and materials • Prepare concrete surfaces by applying purging, priming and bonding agents • Install shutters, sealant materials around joints to carry out grouting work using flow able grout • Demonstrate application of grout as per requirement • Demonstrate process of cleaning and storing of tools relevant to grouting work 	<ul style="list-style-type: none"> • Scrapers • Grouting gun/ pump • Wire brushes • Caulking gun • Caulking iron • Caulking mallet • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water level
6	<p>Perform the application of caulking agents in RCC Precast components</p> <p>Theory Duration (hh:mm) 16:00</p> <p>Practical Duration (hh:mm) 50:00</p> <p>Corresponding NOS Code CON/N0711</p>	<ul style="list-style-type: none"> • Explain how to apply primer on RCC surface to be caulked using proper hand tools • Explain the guidelines about safety precautions to be taken while carrying out caulking activity • Identify mix proportion of the caulking agents in order to prepare approved mix • Describe method of filling of joints of precast units efficiently • Select cleaning agents used for material and tools used in caulking operations • Select hand tools used in caulking works • Demonstrate the process of cleaning of joints to be caulked • Demonstrate the application of primer on concrete surface to be caulked. • Demonstrate filling of precast joints using appropriate filler materials • Demonstrate the procedure of mixing caulking and colouring as per approved sample • Demonstrate process of making concave caulking shape using tool such as merging trowels, putty knives or wooden sticks etc. 	<ul style="list-style-type: none"> • Scrapers • Wire brushes • Caulking gun • Caulking iron • Caulking mallet • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water level

Sr. No.	Module	Key Learning Outcomes	Equipment Required
7	<p>Work effectively in a team to deliver desired results at the workplace</p> <p>Theory Duration (hh:mm) 8:00</p> <p>Practical Duration (hh:mm) 16:00</p> <p>Corresponding NOS Code CON/N8001</p>	<ul style="list-style-type: none"> • Explain different modes of communication and its appropriate usage • Explain importance of team work and its effects relevant to rigger precast erection work. • Explain effects and benefits of timely actions relevant to rigger precast erection work • Demonstrate effective communication skills While interacting with co-workers, trade seniors and others during the assigned task. • Demonstrate effective reporting to seniors as per applicable organisational norms. • Demonstrate process of handing over the material, tools tackles, equipment and work fronts to interfacing teams 	<ul style="list-style-type: none"> • Scrappers • Wire brushes • Caulking gun • Caulking iron • Caulking mallet • Measuring tape • Plumb Bob • Spirit level • Chalks line • Try square • Water level
8	<p>Plan and organize work to meet expected outcomes</p> <p>Theory Duration (hh:mm) 4 :00</p> <p>Practical Duration(on job training) (hh:mm) 12:00</p> <p>Corresponding NOS Code CON/N8002</p>	<ul style="list-style-type: none"> • Explain how to plan rigger precast erection activities within defined scope and duration • Explain basic concept of productivity and sequence of working • Explain process of requisition of resources and oral and written reporting for requirement of resources. • Demonstrate oral/ written reporting procedure to superiors. • Demonstrate how to handle and organize rigger precast erection tools, material, fixtures and devices. • Demonstrate how to prioritize all works/ activities • Demonstrate with example for optimum utilization of man and material resources in precast rigging work. 	
9	<p>Work according to personal health, safety and environment protocol at construction site</p> <p>Theory Duration (hh:mm) 12:00</p> <p>Practical Duration(On job training) (hh:mm) 28:00</p> <p>Corresponding NOS Code CON/N9001</p>	<ul style="list-style-type: none"> • Explain the types of hazards at the construction sites • Identify the hazards specific to the rigger precast erection works • Explain 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 worker participation in safety/mock drills • Explain the reporting procedure adopted in case of emergency situations • Describe the standard procedure for handling, storing and stacking of material, tools, equipment and accessories • Explain different types of wastes produced at a construction site including their disposal method • Explain vertigo test and other medical tests conducted to obtain permit of working at construction sites • Demonstrate vertigo test • Explain the types of ergonomic principles 	<ul style="list-style-type: none"> • Safety Helmet • Safety goggles • Safety shoes • Safety belt • Cotton gloves • Ear plugs • Reflective jackets • Dust mask • Fire Prevention kit • Barricade tape • Safety Tags

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p>adopted while carrying out specific task at the construction</p> <ul style="list-style-type: none"> • Explain the benefits of basic ergonomic principles used at construction sites. • Explain the importance of housekeeping • Demonstrate the use of all Personal Protective Equipment (PPE) like helmet, safety shoe, safety belt, safe jackets and other safety equipment relevant to rigger precast erection works • Demonstrate the operation of fire extinguisher. • Demonstrate different methods involved in providing first aid to the affected person • Demonstrate housekeeping practice followed after rigger precast erection works. 	
	<p>Total Duration 400:00 hours</p> <p>Theory Duration 120:00 hours</p> <p>Practical Duration 280:00 hours</p>	<p><u>Unique Equipment Required:</u></p> <p><u>Hand Tools</u> Spud Wrenches, Open-End Wrenches, Crescent Wrenches, Sledge Hammer, Nibbler, pliers, tool kit</p> <p><u>Power tools</u> welding tools and accessories, gas cutting tools and accessories Drill machine with bits, electric screw gun, electric hexa saw</p> <p><u>Measuring Instruments</u> Measurement Tape, Chalk line/masons' line, Water level, Spirit level, Plumb bob, try square</p> <p><u>consumables</u> Paint, nail, welding rod, acetylene and oxygen, screw, chalk powder</p> <p><u>Equipment and machinery required</u> Mobile crane, tower crane, electric hoist, scissor lift, forklift, hydraulic jack, derrick, Electrical winch, Electrical chain hoist</p> <p><u>Lifting accessories</u> Slings, Wire ropes, Shackles, Spreader board, Chain, Link, Eye hook, Eye bolts, Bull dog grips, Clamp, socket</p> <p><u>Safety instruments</u> Safety Helmet, Safety goggles, Safety shoes, Safety belt, Cotton gloves, Ear plugs, Reflective jackets, Dust mask, Fire Prevention kit, Barricade tape, Safety Tags</p> <p><u>Classroom Aids and other requirements</u> Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board registers and other teaching aids</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: “Rigger Precast Erection” mapped to Qualification Pack: “CON/Q0703, Version 2.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “CON/Q0703 Version 2.0”.
2	Personal Attributes	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	Minimum Educational Qualifications	ITI/12 th standard pass
4a	Domain Certification	Certified for the job role “Rigger Precast Erection” mapped to QP:“CON/Q0703 Version 2.0” Minimum accepted score is 80%
4b	Platform Certification	Certified for the job role “Trainer” mapped to QP:“MEP/Q2601” Minimum accepted score is 80%
5	Experience	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 th pass minimum eight years of field experience and preferably two years of teaching Experience.

Note: For the Assessment Criteria please refer to the QP PDF