



Model Curriculum

1. Scaffolder - Conventional

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: Scaffolding
REF ID: CON/Q0312, V1.0
NSQF LEVEL: 4





TABLE OF CONTENTS

1. Curriculum	01
2. Trainer Prerequisites	08
3. Annexure: Assessment Criteria	09



Scaffolder- Conventional

CURRICULUM / SYLLABUS

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

Program Name	Scaffolder- Conventional		
Qualification Pack Name & Reference ID	CON/Q0312 v1.0		
Version No.	1.0	Version Update Date	23-05-2017
Pre-requisites to Training	Preferably 5th Standard with 6 years site experience in same occupation for Non trained worker / 3 years site experience as a certified Assistant Scaffolder - Conventional for Trained worker		
Training Outcomes	After completing this programme, participants will be able to: <ul style="list-style-type: none">• Erect and dismantle the conventional staging using bamboos and ballies: - Procedure for erecting and dismantling conventional staging using bamboos and ballies.• Erect and dismantle scaffolds using pipes and couplers: - Procedure for erecting and dismantling scaffolds using pipes and couplers.• Work effectively in a team to deliver desired results at the workplace: - Organised working procedure within a team at site.• Plan and organize work to meet expected outcomes: - Prioritizing activities and organising resources to meet desired outcome.• Work according to personal health, safety and environment protocol at construction site: - Importance of Health & Safety aspects & measures to be followed while working		

This course encompasses 5 out of 5 National Occupational Standards (NOS) of “Scaffolder- Conventional” Qualification Pack issued by “Construction Skill Development Council of India”.

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	<p>Introduction</p> <p>Theory Duration (hh:mm) 04:00</p> <p>Practical Duration (hh:mm) 00:00</p>	<ul style="list-style-type: none"> • Role description/ functions of the job role • Expected personal attributes from the job role • Brief description about course content, mode of learning and duration of course • Future possible progression and career development provisions on completion of the course on completion of the course 	<p><u>Classroom Requirement</u></p> <ol style="list-style-type: none"> 1. Classroom of 30 students capacity 2. Black/White board 3. Projector/LED Monitor 4. Computer 5. Trade specific charts and other teaching aids
2	<p>Erect and dismantle the conventional staging using bamboos and ballies</p> <p>Theory Duration (hh:mm) 30:00</p> <p>Practical Duration (hh:mm) 124:00</p> <p>Corresponding NOS Code CON/N0356</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Understanding of sketches • Purpose of scaffolding • Importance of Conventional scaffolding in construction work • Single pole and double scaffold • Service request procedure for tools, material and equipment • Sorting and selection of bamboo/ballies for scaffolding • Defects in bamboo and ballies • Different types of ropes used for tying • Different types of knots and use of knots for connection between bamboos and ballies • Hand tools required for scaffolding erection works • Visual checking for ground compaction • PPE's and Safety related to scaffolding work • Load carrying capacity of various type of scaffold • Use of water level tube • Sequential process for erection and dismantling of bamboo/ballies scaffold • Support to erected scaffold with permanent structure • Checking of erected scaffold for plumb, rigidity, stability and support • Standard tolerance for scaffolding work <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> • Read and explain scaffolding detail from drawing/sketches Calculation of quantity of scaffold material 	<p><u>Hand tools</u></p> <ol style="list-style-type: none"> 1. Hammer 2. Hand saw 3. Hack saw frame with blade 4. Shovel <p><u>Measuring Instruments</u></p> <ol style="list-style-type: none"> 4. Measuring tape 5. Spirit level 6. Plumb-bob 7. Mason's line 8. Water level tube <p><u>Materials</u></p> <ol style="list-style-type: none"> 9. Bamboo/ballie 10. Nylon/Jute rope 11. Nails 12. Walkways 13. Aluminium/ GI ladder 14. Safety net <p><u>PPEs & safety equipment's</u></p> <ol style="list-style-type: none"> 15. Helmet 16. Safety shoes 17. Safety belt 18. Cotton hand gloves 19. Goggles 20. Reflective jackets

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> Demonstrate erection and dismantle of bamboo/ballies scaffold Demonstrate fixing of guard rail, safety net, hard barrication 	21. Safety message boards
3	<p>Erect and dismantle the conventional staging using pipes and couplers</p> <p>Theory Duration (hh:mm) 30:00</p> <p>Practical Duration (hh:mm) 124:00</p> <p>Corresponding NOS Code CON/N0357</p>	<p>Theory:-</p> <ul style="list-style-type: none"> Understanding of sketches/drawings Purpose of scaffolding Importance of Conventional scaffolding in construction work Single pole and double scaffold Service request procedure for tools, material and equipment Sorting and selection of pipes & couplers for scaffolding Defects in pipes and couplers Different types of pipes, couplers and their standard size Hand tools required for scaffolding erection works Visual checking for ground compaction PPE's and Safety related to scaffolding work Load carrying capacity of various type of scaffold Use of water level tube Sequential process for erection and dismantling of pipes & coupler scaffold Support to erected scaffold with permanent structure Checking of erected scaffold for plumb, rigidity, stability and support Standard tolerance for scaffolding work <p>Demonstration/ Practical :-</p> <ul style="list-style-type: none"> Read and explain scaffolding detail from drawing/sketches Calculation of quantity of scaffold material Determine quantity of scaffold work Demonstrate erection and dismantle of pipes & coupler scaffold Demonstrate fixing of guard rail, safety net, hard barrication 	<p>Hand tools</p> <ol style="list-style-type: none"> Hammer Ring spanner (set) Open end spanner Double end spanner Wrench Pulley Rope Nuts and bolts Hack saw with blade Drilling machine with bits <p>Measuring Instruments</p> <ol style="list-style-type: none"> Measuring tape Spirit level Plumb-bob Chalk line/Mason's line Water level tube <p>Materials</p> <ol style="list-style-type: none"> Pipes of different size and diameter Swivel coupler Fixed clamp Steel walkways Aluminium/ GI ladder Safety net <p>PPEs & safety equipment's</p> <ol style="list-style-type: none"> Helmet Safety shoes Safety belt

Sr. No.	Module	Key Learning Outcomes	Equipment Required
			25. Cotton hand gloves 26. Goggles 27. Reflective jackets 28. Safety message boards 29. Barricade Tape
4	<p>Work effectively in a team to deliver desired results at the workplace</p> <p>Theory Duration (hh:mm) 04:00</p> <p>Practical Duration (hh:mm) 20:00</p> <p>Corresponding NOS Code CON/N8001</p>	<p>Theory:-</p> <ul style="list-style-type: none"> Method of oral and written communication skills with co-workers, trade seniors while handling and carrying out visual checks on materials, tools and tackles, Equipments How to interpret scope of scaffolding work, material/ tools handling by adhering to instructions or consulting with seniors Method of providing instruction to subordinates or reporting to seniors clearly and promptly Seek necessary support and complete assigned tasks within stipulated time duration Keep good relation and maintain well behavior with co-workers <p>Demonstration/ Practical :- The skills will be developed and practiced while carrying out following trade related activities:</p> <ol style="list-style-type: none"> Selection of materials, tools and Equipments Handling scaffolding materials, tools and Equipments Preparation of base area for erection of scaffold Erection and dismantling of bamboo/Ballie scaffold Erection and dismantling of pipe & coupler scaffold 	
5	<p>Plan and organize work to meet expected outcomes</p> <p>Theory Duration (hh:mm) 04:00</p>	<p>Theory:-</p> <ol style="list-style-type: none"> Basic concept of productivity, sequence of working and implementation of safety and organizational norms while working Optimization of resources 	

Sr. No.	Module	Key Learning Outcomes	Equipment Required
	<p>Practical Duration (hh:mm) 12:00</p> <p>Corresponding NOS Code CON/N8002</p>	<p>3. To plan shuttering work within defined scope of work</p> <p>4. Upkeep, storing and stacking methods of tools, materials used for domain specific works</p> <p>5. Requisition of resources, reporting for requirement of resources orally and in written to concerned authority</p> <p>6. Importance of housekeeping</p> <p>Demonstration/ Practical :- The skills will be developed and practiced while carrying out following trade related activities</p> <ol style="list-style-type: none"> 1. Selection of materials, tools or devices for defined purpose in an optimum manner 2. Handling material, tools and Equipments relevant to reinforcements works 3. Prioritize all works/ activities 4. Erection and dismantling of bamboo/Ballie scaffold 5. Erection and dismantling of pipe & coupler scaffold 6. Optimum use of resources while performing task 7. Adherence to stipulated timelines for completion of scaffolding work 	
6	<p>Work according to personal health, safety and environment protocol at construction site</p> <p>Theory Duration (hh:mm) 08:00</p> <p>Practical Duration (hh:mm) 40:00</p> <p>Corresponding NOS Code CON/N9001</p>	<p>Theory:-</p> <ul style="list-style-type: none"> • Types of hazards involved in construction sites • Types of hazards involved in scaffolding work • Emergency safety control measures and actions to be taken under emergency situation • Identification of unsafe act and unsafe condition • Concept of :- <ol style="list-style-type: none"> 1. First Aid process 2. Use of fire extinguisher 3. Classification of fires and fire extinguisher 4. Safety drills 5. Types and use of PPEs required for reinforcement works • Safety protocols and practices 	<p>PPEs</p> <ol style="list-style-type: none"> 1. Safety Helmet 2. Safety goggles 3. Safety shoes 4. Safety belt 5. Cotton gloves 6. Ear plugs 7. Reflective jackets 8. Dust mask 9. Fire Prevention kit 10. Barricade Tape 11. Safety Tags

Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul style="list-style-type: none"> • Reporting procedure to the concerned authority in emergency situations • Standard procedure of handling, storing and stacking material • What is safe disposal of waste, type of waste and their disposal • basic ergonomic principles as per applicability <p><u>Demonstration/ Practical :-</u> The skills will be developed and practiced while carrying out following trade related activities:</p> <ol style="list-style-type: none"> 1. Selection of PPEs and use them appropriately as per working need of scaffolding works, handling, storing, stacking and shifting of scaffolding material, tools and Equipments 2. Selection of PPEs and use them appropriately as per working need of erection and dismantling of various types of scaffold. 3. Identification of locations, situations/ circumstances, malpractices which can be hazardous for general or scaffolding works 4. Selection of fire extinguisher based on classification of fire, standard practice of storing & stacking fire-fighting Equipments/ materials at work locations 5. Disposal of waste materials as per their nature and effects on weather 	
	<p>Total Duration</p> <p>Theory Duration 80:00</p> <p>Practical Duration 320:00</p>	<p>Unique Equipment Required:</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> Hammer, Ring spanner (set), Open end spanner, Double end spanner, Wrench, Pulley, Rope, Nuts and bolts, Hack saw frame with blade, Drilling Machine with bits, shovels</p> <p><u>Measuring Instruments</u> Measuring tape, Spirit level, Water level tube, Plumb-bob, Mason's line/Chalk line,</p> <p><u>General requirement</u> Lifting appliance (Sling, Shackle, Belts)</p>	



Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<p><u>Materials</u> Bamboo/ballie, Pipes of different diameter, Nylon/Jute thread, Swivel coupler, Fixed clamp, Steel walkways, Aluminium/ GI ladder, Safety net</p> <p><u>PPEs</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>	

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: “Scaffolder- Conventional” mapped to Qualification Pack: “CON/Q0312, v1.0”

Sr. No.	Area	Details
1	Description	To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “CON/Q0312”.
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	Trainer/Assessor- 70% in each NOS of Qualification Pack “CON/Q0312” & 80% overall , Lead trainer/Lead Assessors- 70% in each NOS of Qualification Pack “CON/Q0312” & 90% overall
4b	Platform Certification	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	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.



CRITERIA FOR ASSESSMENT OF TRAINEES

<u>Job Role</u>	Scaffolder Conventional
<u>Qualification Pack</u>	CON/Q0312
<u>Sector Skill Council</u>	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.



Assessment outcomes	Assessment Criteria for outcomes	Total Mark	Marks Allocation		
			Out Of	Theory	Skills Practical
CON/N0356: Erect and dismantle the conventional staging using bamboos and ballis	PC1. check for and ensure level and compactness of ground by visual/ physical checks in work area where scaffold is to be erected	100	4	1	7
	PC2. sort out all required materials prior to erection of scaffold and replace damaged/defective materials if any		4		
	PC3. determine scope of scaffolding works as per the position and height where it has to be erected		4	1	3
	PC4. select the tools and tackles as per requirement		4	1	3
	PC5. check and fix guard rails and safety nets around the scaffold area to ensure safe working conditions in case of already erected scaffold or while working at height		4	1	3
	PC6. select bamboos/ ballis as per required height, diameter, and thickness during erection		4	1	6
	PC7. place sole board on ground where temporary scaffolds to be erected		3		
	PC8. follow correct sequence and method of erection as per standards practices		6	1	5
	PC9. ensure tightness of knots, rigidity and stability of different components during and after erection		6	1	5
	PC10. check for verticality of scaffold		4	1	3
	PC11. provide support to scaffold as per standard practice		4	1	3
	PC12. check for dimensional accuracy as per sketches or instructions		4	1	3
	PC13. place and fix appropriate plank board / walk boards, guard rail, toe board and other accessories for working		4	1	3
	PC14. report to superior for completion of work & checking of scaffolding, do any rework as suggested by engineer in charge of superior and get it approved		5	1	4
	PC15. follow dismantling procedure as per standard practices		20	4	16
	PC16. check for rigidity and stability of scaffold before and during dismantling		10	2	8
	PC17. lower scaffold materials in a safe manner		5	1	4
	PC18. ensure cleaning and storing of scaffold materials for further use		5	1	4
	Total	100	20	80	
CON/N0357: Erect and	PC1. check and ensure level, compactness of ground by visual / physical checks	100	3	1	5

dismantle scaffolds using pipes and couplers	PC2. sort out and select all the components prior to erection of scaffold and replace the damaged ones	3		
	PC3. determine the quantity of pipes & couplers required for erection based on position and height where it has to be erected	4	1	3
	PC4. select tools and tackles as per requirement	3	1	2
	PC5. check and fix guard rails and safety nets around the scaffold area to ensure safe working conditions in case of already erected scaffold or while working at heights	4	1	6
	PC6. prevent unauthorized access to the work area by providing proper barricades	3		
	PC7. place base plates or sole boards on ground as per the marking for setting the scaffolds	2	1	5
	PC8. select & use pipes of suitable dia for vertical, horizontal & diagonal member	4		
	PC9. select & use right angle coupler/swivel coupler suitably based on the requirement	3	1	2
	PC10. follow correct sequence and method for erection of scaffold as per standard practices	10	2	8
	PC11. check verticality of scaffold at first level of erection and correct (if required) before moving to the next level	4	1	7
	PC12. check for rigidity and stability of scaffold	4		
	PC13. provide appropriate support to the scaffold erected as per standard practice and instructions from superiors	4	1	6
	PC14. check for dimensional accuracy as per sketches or instructions	3		
	PC15. fix walk boards, guard rail, toe boards and other components on the working platform properly	3	1	2
	PC16. report to superior for completion of work & checking of scaffolding, do any rework as suggested by engineer in charge of superior and get it approved	3	1	2
	PC17. follow and ensure standard dismantling procedure according to types of scaffold	20	4	16
	PC18. check for stability, rigidity of scaffold before dismantling and maintain during dismantling	8	2	6
	PC19. remove guard rails, toe boards, walk boards and components sequentially keeping the overall safety in mind	4	1	3
	PC20. lower scaffold components in a safe manner following the proper laid down procedure	4	1	7
	PC21. clean, repair and store scaffold components for further use	4		
		Total	100	20

CON/N8001: Work effectively in a team to deliver desired results at the workplace	PC1. pass on work related information/ requirement clearly to the team members	100	10	2	8
	PC2. inform co-workers and superiors about any kind of deviations from work		5	1	4
	PC3. address the problems effectively and report if required to immediate supervisor appropriately		5	1	4
	PC4. receive instructions clearly from superiors and respond effectively on same		5	1	4
	PC5. communicate to team members/subordinates for appropriate work technique and method		5	1	4
	PC6. seek clarification and advice as per requirement and applicability		10	2	8
	PC7. hand over the required material, tools tackles, equipment and work fronts timely to interfacing teams		30	6	24
	PC8. work together with co-workers in a synchronized manner		30	6	24
			Total	100	20
CON/N8002: Plan and organize work to meet expected outcomes	PC1. understand clearly the targets and timelines set by superiors	100	10	2	8
	PC2. plan activities as per schedule and sequence		10	2	8
	PC3. provide guidance to the subordinates to obtain desired outcome		10	2	8
	PC4. plan housekeeping activities prior to and post completion of work		10	2	8
	PC5. list and arrange required resources prior to commencement of work		10	2	8
	PC6. select and employ correct tools, tackles and equipment for completion of desired work		10	2	8
	PC7. complete the work with allocated resources		10	2	8
	PC8. engage allocated manpower in an appropriate manner		10	2	8
	PC9. use resources in an optimum manner to avoid any unnecessary wastage		5	1	4
	PC10. employ tools, tackles and equipment with care to avoid damage to the same		5	1	4
	PC11. organize work output, materials used, tools and tackles deployed,		5	1	4
	PC12. processes adopted to be in line with the specified standards and instructions		5	1	4
			Total	100	20
CON/N9001: Work according to personal health, safety and environment	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority	100	5	1	4
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities		5	1	4
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable		10	2	8



protocol at construction site	PC4. participate in safety awareness programs like Tool Box Talks, safety demonstrations, mock drills, conducted at site		5	1	4
	PC5. identify near miss , unsafe condition and unsafe act		5	1	4
	PC6. use appropriate Personal Protective Equipment (PPE) as per work requirements including: <ul style="list-style-type: none"> • Head Protection (Helmets) • Ear protection • Fall Protection • Foot Protection • Face and Eye Protection • Hand and Body Protection • Respiratory Protection (if required) 		10	2	8
	PC7. handle all required tools, tackles , materials & equipment safely		5	1	4
	PC8. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines		5	1	4
	PC9. install and apply properly all safety equipment as instructed		15	3	12
	PC10. follow safety protocol and practices as laid down by site EHS department		15	3	12
	PC11. collect and deposit construction waste into identified containers before disposal, separate containers that may be needed for disposal of toxic or hazardous wastes		10	2	8
	PC12. apply ergonomic principles wherever required		10	2	8
		Total	100	20	80