Model Curriculum

QP Name: Helper Bar Bender and Steel Fixer

QP Code: CON/Q0201

Version: 4.0

NSQF Level: 2

Model Curriculum Version: 4.0

Construction Skill Development Council of India|| Tower 4B, DLF Corporate Park, 201&, 202 4B, Mehrauli-Gurgaon Rd, DLF Phase 3, Gurugram, Haryana 122002

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Training Parameters

Sector	Construction
Sub-Sector	Real Estate and Infrastructure Construction
Occupation	Bar Bending and Fixing
Country	India
NSQF Level	2
Aligned to NCO/ISCO/ISIC Code	NCO-2015/9313.9900
Minimum Educational Qualification and Experience	No formal education prescribed OR May require the ability to read and write for some qualifications
Pre-Requisite License or Training	NA
Minimum Job Entry Age	18 Years
Last Reviewed On	31/08/2023
Next Review Date	29/02/2024
NSQC Approval Date	31/08/2023
QP Version	4.0
Model Curriculum Creation Date	31/08/2023
Model Curriculum Valid Up to Date	29/02/2024
Model Curriculum Version	4.0
Minimum Duration of the Course	240 Hours
Maximum Duration of the Course	270 Hours

Program Overview

This section summarises 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 to:

- Explain the process of shifting and stacking materials, tools and equipment for reinforcement work.
- Elucidate ways to mark and cut reinforcement bars to the required length.
- Explain the ways to tie reinforcement bars using different types of ties.
- Explain the process of erecting and dismantling a temporary scaffold.
- Elucidate ways to work according to personal health, safety and environment protocols at construction sites.
- Demonstrate appropriate employability skills.
- Explain ways of excavating and backfilling a pit/trench as per instruction.

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
CON/N0201: Shift and Stack Materials, Tools and Equipment for Reinforcement Work **NOS Version- 4.0** **NSQF Level- 2**	**15:00**	**15:00**	**0:00**	**00:00**	**30:00**
Module 1: Introduction to the role of a Helper Bar Bender and Steel Fixer	05:00	00:00	0:00	00:00	05:00
Module 2: Process of shifting and stacking materials, tools and equipment for reinforcement work	10:00	15:00	0:00	00:00	25:00
CON/N0202: Mark and Cut Reinforcement Bars to the Required Length **NOS Version- 4.0** **NSQF Level- 2**	**15:00**	**15:00**	**0:00**	**00:00**	**30:00**
Module 3: Process of marking and cutting reinforcement bars	15:00	15:00	0:00	00:00	30:00

CON/N0203: Tie Reinforcement Bars using Different Types of Ties **NOS Version- 4.0** **NSQF Level- 2**	**10:00**	**20:00**	**30:00**	**00:00**	**60:00**
Module 4: Process of tying reinforcement bars	10:00	20:00	30:00	00:00	60:00
CON/N0101: Erect and Dismantle Temporary Scaffold up to 3.6 – meter height **NOS Version- 7.0** **NSQF Level- 3**	**15:00**	**45:00**	**0:00**	**00:00**	**60:00**
Module 5: Process of erecting and dismantling temporary scaffold up to 3.6 meter height	15:00	45:00	0:00	00:00	60:00
CON/N9001: Work according to Personal Health, Safety and Environment Protocols at Construction Site **NOS Version- 10.0** **NSQF Level- 4**	**05:00**	**25:00**	**0:00**	**00:00**	**30:00**
Module 6: Follow safety norms as defined by organization, adopt healthy and safe work practices	05:00	25:00	0:00	00:00	30:00
DGT/VSQ/N0101: Employability Skills **NOS Version- 1.0** **NSQF Level- 2**	**30:00**	**00:00**	**0:00**	**00:00**	**30:00**
Module 7: Employability Skills	30:00	00:00	0:00	00:00	30:00
Total Duration	**90:00**	**120:00**	**30:00**	**00:00**	**240:00**

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: Carry out manual earthwork at construction sites **NOS Version- 5.0** **NSQF Level- 2**	**15:00**	**15:00**	**0:00**	**00:00**	**30:00**
Module 8: Process of carrying out manual earthwork at construction sites	15:00	15:00	0:00	00:00	30:00
Total Duration	**15:00**	**15:00**	**0:00**	**00:00**	**30:00**

Module Details

Module 1: Introduction to the role of a Helper Bar Bender and Steel Fixer

Mapped to CON/N0201 v4.0

Terminal Outcomes:

- Discuss the job role of a Helper Bar Bender and Steel Fixer.

Duration: 05:00	**Duration: 0:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the size and scope of the construction industry and its sub-sectors. • Discuss the role and responsibilities of a Helper Bar Bender and Steel Fixer. • Identify various employment opportunities for a Helper Bar Bender and Steel Fixer.	
Classroom Aids	
Training Kit – Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
NA	

Module 2: Shifting and Stacking of Materials, Tools and Equipment for Reinforcement Work

Mapped to CON/N0201 v4.0

Terminal Outcomes:

- Explain the process of shifting and stacking materials, tools and equipment for reinforcement work.

Duration: 10:00	Duration: 15:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the different types, diameters, and grades of reinforcement materials. • Identify and classify the different hand tools used in reinforcement work. • Identify and classify different power tools used in reinforcement work. • Elucidate potential hazards associated with reinforcement work. • Explain different types of slings, shackles, and lifting belts. • Explain the importance of inventory management and stock control procedures for materials, tools and equipment for reinforcement work. • Identify common causes and types of corrosion affecting reinforcement steel. • Explain how to protect the reinforcement steel from corrosion and weather conditions	• Show how to interpret and follow diagrams and blueprints for shifting and stacking materials in reinforcement work. • Demonstrate how to inspect, maintain and handle the relevant hand and power tools. • Demonstrate the proper usage, maintenance, and storage of PPE. • Show proper manual handling techniques to prevent injuries during lifting and moving operations. • Demonstrate the techniques for safe and efficient loading, unloading, shifting, and stacking of reinforcement steel.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Chisel, Hammer, Bar Tying Hook, Bending Lever, Podger Spanner, Hack Saw Blade and Frame, Pointed Chisel, Sledge Hammer, Pin Plate, Working Bench, Trowel, Pointing Trowel, Shovel, Mortar Pan, Spade, Pick Axe, Wheel Barrow, Lime Powder, Wooden Pegs, Hammer, Hard Broom, Ladder, Measurement Tape, Spirit Level, Plumb-Bob, Mason's Line, Cutting Machine, Bending Machine, M.S, Tor Steel, TMT Steel Binding Wires, Steel Cutting Blade, Cover Blocks, Wooden Planks, Rebar Tying Machine, Lifting Appliance (Sling, Shackle, Belts), Cup-Lock Scaffolding Components (Set), 40 NB Pipes, Swivel Coupler, Fixed Clamp, Steel Walers, Steel Walkways, Gauge Measure, Steel Scale, Try Scale, GI Bucket 5L Capacity, Hand Roller, Plate Vibrator, Source Of Water, Power Source, Rail Piece, Spanner (Set), Wrench, Pulley, Nuts And Bolts, Rope, Hacksaw, Aluminium/GI Ladder, Safety Net, Safety Helmet, Safety Goggles, Safety Shoes, Safety Belt, Cotton Gloves, Ear Plugs, Reflective Jackets, Dust Mask, Fire Prevention Kit, Face Shield, Overalls, Knee	

Pads, Safety Harness, Fire Extinguisher, First Aid Box, Safety Tags, Safety Notice Board/Safety Message Board

Module 3: Process of Marking and Cutting Reinforcement Bars

Mapped to CON/N0202 v4.0

Terminal Outcomes:

- Elucidate ways to mark and cut reinforcement bars to the required length.

Duration: 15:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the different types, grades, and diameters of reinforcement bars. • Identify different types of ties used in reinforcement work. • Elaborate on the purpose and appropriate applications of each type of tie on different structural elements. • Explain the techniques and precautions to maintain the integrity of reinforcement bars during the straightening process. • Explain the purpose, functions, and specific applications of each hand and power tool used in reinforcement work. • Describe the standard stacking practices to ensure safe and organized storage of cut reinforcement bars based on length and diameter.	• Demonstrate how to accurately measure and mark cut lengths on reinforcement bars. • Show how to straighten reinforcement bars of different diameters using a bending lever and pipe. • Demonstrate how to select and use the appropriate cutting tools, such as hand-cutting machine, circular cutting machine, or shearing machine, for cutting rebar. • Show proper techniques and safety measures when using hand tools for cutting rebar. • Demonstrate the tagging and stacking techniques for cut reinforcement bars.
Classroom Aids	
Training Kit (Trainer Guide, Presentations). Whiteboard, Marker, Projector, Laptop	
Tools, Equipment and Other Requirements	
Chisel, Hammer, Bar Tying Hook, Bending Lever, Podger Spanner, Hack Saw Blade and Frame, Pointed Chisel, Sledge Hammer, Pin Plate, Working Bench, Trowel, Pointing Trowel, Shovel, Mortar Pan, Spade, Pick Axe, Wheel Barrow, Lime Powder, Wooden Pegs, Hammer, Hard Broom, Ladder, Measurement Tape, Spirit Level, Plumb-Bob, Mason's Line, Cutting Machine, Bending Machine, M.S, Tor Steel, TMT Steel Binding Wires, Steel Cutting Blade, Cover Blocks, Wooden Planks, Rebar Tying Machine, Lifting Appliance (Sling, Shackle, Belts), Cup-Lock Scaffolding Components (Set), 40 NB Pipes, Swivel Coupler, Fixed Clamp, Steel Walers, Steel Walkways, Gauge Measure, Steel Scale, Try Scale, GI Bucket 5L Capacity, Hand Roller, Plate Vibrator, Source Of Water, Power Source, Rail Piece, Spanner (Set), Wrench, Pulley, Nuts And Bolts, Rope, Hacksaw, Aluminium/GI Ladder, Safety Net, Safety Helmet, Safety Goggles, Safety Shoes, Safety Belt, Cotton Gloves, Ear Plugs, Reflective Jackets, Dust Mask, Fire Prevention Kit, Face Shield, Overalls, Knee Pads, Safety Harness, Fire Extinguisher, First Aid Box, Safety Tags, Safety Notice Board/Safety Message Board	

Module 4: Process of Tying Reinforcement Bars

Mapped to CON/N0203 v4.0

Terminal Outcomes:

- Explain the ways to tie reinforcement bars using different types of ties.

Duration: 10:00	**Duration: 20:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the importance of proper tying of reinforcement bars. • List the different types of binding wires used for tying reinforcement bars. • Explain the application of different types of ties in different structural members, like columns, beams, slabs, etc. • State the characteristics of binding wires, including tensile strength, flexibility, and corrosion resistance. • Identify and classify different hand and power tools used for tying rebar. • Explain the importance of appropriate spacing in tying reinforcement bars.	• Demonstrate the use of different types of binding wire, including the calculation of the appropriate length of binding wire required for different types of ti**es.** • Demonstrate the use of different types of ties used in reinforcement work, such as slash tie, ring slash tie, hairpin tie, ring hairpin tie, crown tie, and splice tie. • Show how to accurately measure and cut the binding wire to the required length using appropriate cutting tools. • Show how to ensure proper alignment and positioning of reinforcement bars during the tying process.
Classroom Aids	
Training Kit – Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Chisel, Hammer, Bar Tying Hook, Bending Lever, Podger Spanner, Hack Saw Blade and Frame, Pointed Chisel, Sledge Hammer, Pin Plate, Working Bench, Trowel, Pointing Trowel, Shovel, Mortar Pan, Spade, Pick Axe, Wheel Barrow, Lime Powder, Wooden Pegs, Hammer, Hard Broom, Ladder, Measurement Tape, Spirit Level, Plumb-Bob, Mason's Line, Cutting Machine, Bending Machine, M.S, Tor Steel, TMT Steel Binding Wires, Steel Cutting Blade, Cover Blocks, Wooden Planks, Rebar Tying Machine, Lifting Appliance (Sling, Shackle, Belts), Cup-Lock Scaffolding Components (Set), 40 NB Pipes, Swivel Coupler, Fixed Clamp, Steel Walers, Steel Walkways, Gauge Measure, Steel Scale, Try Scale, GI Bucket 5L Capacity, Hand Roller, Plate Vibrator, Source Of Water, Power Source, Rail Piece, Spanner (Set), Wrench, Pulley, Nuts And Bolts, Rope, Hacksaw, Aluminium/GI Ladder, Safety Net, Safety Helmet, Safety Goggles, Safety Shoes, Safety Belt, Cotton Gloves, Ear Plugs, Reflective Jackets, Dust Mask, Fire Prevention Kit, Face Shield, Overalls, Knee Pads, Safety Harness, Fire Extinguisher, First Aid Box, Safety Tags, Safety Notice Board/Safety Message Board	

Module 5: Process of Erecting and Dismantling Temporary Scaffold Up to 3.6 meter height

Mapped to CON/N0101 v7.0

Terminal Outcomes:

- Explain the process of erecting and dismantling a temporary scaffold.

Duration: 15:00	**Duration: 45:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Explain the use of different types of scaffolds, e.g. cup-lock and frame scaffold. • Elucidate the identification and use of different scaffolding components. • List the standard size of scaffolding components. • Describe the standard procedure for erecting and dismantling a 3.6 m temporary scaffold.	• Demonstrate how to level the area where the scaffold needs to be erected and check the ground compactness. • Show how to use appropriate components and erect a temporary scaffold up to 3.6 m in height. • Demonstrate the use of relevant tools and tackles in erecting and dismantling temporary scaffolds. • Demonstrate the process of setting up walk-boards, guard rails, toe-boards and other components on the scaffold's working platform. • Show how to clean and stack all components properly after dismantling.
Classroom Aids	
Training Kit – Trainer Guide, Presentations, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Chisel, Hammer, Bar Tying Hook, Bending Lever, Podger Spanner, Hack Saw Blade and Frame, Pointed Chisel, Sledge Hammer, Pin Plate, Working Bench, Trowel, Pointing Trowel, Shovel, Mortar Pan, Spade, Pick Axe, Wheel Barrow, Lime Powder, Wooden Pegs, Hammer, Hard Broom, Ladder, Measurement Tape, Spirit Level, Plumb-Bob, Mason's Line, Cutting Machine, Bending Machine, M.S, Tor Steel, TMT Steel Binding Wires, Steel Cutting Blade, Cover Blocks, Wooden Planks, Rebar Tying Machine, Lifting Appliance (Sling, Shackle, Belts), Cup-Lock Scaffolding Components (Set), 40 NB Pipes, Swivel Coupler, Fixed Clamp, Steel Walers, Steel Walkways, Gauge Measure, Steel Scale, Try Scale, GI Bucket 5L Capacity, Hand Roller, Plate Vibrator, Source Of Water, Power Source, Rail Piece, Spanner (Set), Wrench, Pulley, Nuts And Bolts, Rope, Hacksaw, Aluminium/GI Ladder, Safety Net, Safety Helmet, Safety Goggles, Safety Shoes, Safety Belt, Cotton Gloves, Ear Plugs, Reflective Jackets, Dust Mask, Fire Prevention Kit, Face Shield, Overalls, Knee Pads, Safety Harness, Fire Extinguisher, First Aid Box, Safety Tags, Safety Notice Board/Safety Message Board	

Module 6: Work according to Personal Health, Safety and Environment Protocols at Construction Site

Mapped to NOS CON/N9001 v10.0

Terminal Outcomes:

- Explain the importance of following safety norms as defined by the organization.
- Explain the need to adopt healthy & safe work practices.
- Describe the process of implementing good housekeeping and environment protection process and activities.
- Explain the importance of following infection control guidelines as per applicability.

Duration: 05:00	Duration: 25:00
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• Describe the reporting procedures in cases of breaches or hazards for site safety, accidents, and emergencies as per guidelines. • Explain different types of safety hazards at construction sites. • Discuss basic ergonomic principles as per applicability. • Describe the procedure for responding to accidents and other emergencies at the site. • Explain the importance of handling tools, equipment, and materials as per applicable norms. • Explain the effect of construction material on health and environments as per applicability. • Describe various environmental protection methods as per applicability. • Explain the storage requirement of waste including non-combustible scrap material and debris, combustible scrap material and debris, general construction waste and trash (non-toxic, non-hazardous), any other hazardous wastes and any other flammable wastes at the appropriate location. • Explain how to use hazardous material in a safe and appropriate manner as per applicability.	• Demonstrate how to follow emergency and evacuation procedures in case of accidents, fires, or natural calamities. • Show how to operate different types of fire extinguishers corresponding to various types of fires as per EHS guidelines. • Demonstrate the use of appropriate Personal Protective Equipment (PPE) as per work requirements for Head Protection, Ear Protection, Fall Protection, Foot Protection, Face and Eye Protection, Hand and Body Protection, and Respiratory Protection (if required). • Demonstrate how to check and install all safety equipment as per standard guidelines. • Show how to collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature. • Show how to clean and disinfect all materials, tools and supplies before and after use.

• Explain types of fire. • Describe the procedure of operating different types of fire extinguishers. • State safety relevant to tools, tackles, and equipment as per applicability. • List housekeeping activities relevant to the task. • Elucidate ways of transmission of infection • Explain the ways to manage infectious risks at the workplace. • Describe different methods of cleaning, disinfection, sterilization, and sanitization. • List the symptoms of infection like fever, cough, redness, swelling, and inflammation.	

Classroom Aids:

Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids

Tools, Equipment and Other Requirements

Leather Hand Gloves, Jumpsuit, Wire brush, Hand and Leg guard leather, Safety goggles, Nose mask, Ear protection, Fire extinguishers, Sand buckets Flashback arrestors, Welding helmet, Welding glass, Fire Extinguisher, Fire prevention kit, First Aid box, Safety tags, Safety Notice board

Module 7: Employability Skills

Mapped to NOS DGT/VSQ/N0101 v1.0

Duration: 30:00
Key Learning Outcomes
Introduction to Employability Skills Duration: 1 Hour After completing this programme, participants will be able to: 1. Discuss the importance of Employability Skills in meeting the job requirements **Constitutional values – Citizenship Duration: 1 Hour** 2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen. 3. Show how to practice different environmentally sustainable practices **Becoming a Professional in the 21st Century Duration: 1 Hour** 4. Discuss 21st-century skills. 5. Display a positive attitude, self–motivation, problem-solving, time management skills and continuous learning mindset in different situations. **Basic English Skills Duration: 2 Hours** 6. Use appropriate basic English sentences/phrases while speaking **Communication Skills Duration: 4 Hours** 7. Demonstrate how to communicate in a well–mannered way with others. 8. Demonstrate working with others in a team **Diversity & Inclusion Duration: 1 Hour** 9. Show how to conduct oneself appropriately with all genders and PwD 10. Discuss the significance of reporting sexual harassment issues in time **Financial and Legal Literacy Duration: 4 Hours** 11. Discuss the significance of using financial products and services safely and securely. 12. Explain the importance of managing expenses, income, and savings. 13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws **Essential Digital Skills Duration: 3 Hours** 14. Show how to operate digital devices and use the associated applications and features, safely and securely 15. Discuss the significance of using the internet for browsing, and accessing social media platforms, safely and securely **Entrepreneurship Duration: 7 Hours** 16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges **Customer Service Duration: 4 Hours** 17. Differentiate between types of customers 18. Explain the significance of identifying customer needs and addressing them 19. Discuss the significance of maintaining hygiene and dressing appropriately **Getting ready for apprenticeship & Jobs Duration: 2 Hours** 20. Create a biodata 21. Use various sources to search and apply for jobs 22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview 23. Discuss how to search and register for apprenticeship opportunities

Module 8: Process of Carrying out Manual Earthwork at Construction Sites

Mapped to CON/N0104 v5.0

Terminal Outcomes:

- Explain how to prepare for earthwork.
- Explain how to carry out soil cutting and dressing.
- Explain ways of excavating and backfilling a pit/trench as per instruction.

Duration: 15:00	**Duration: 15:00**
Theory – Key Learning Outcomes	**Practical – Key Learning Outcomes**
• List the appropriate hand tools for removing unwanted materials and objects from the earth's surface before marking activity and earth work. • Describe the preparatory works carried out before the excavation of the pit/trench. • Explain the importance of excavation and its purpose in construction projects. • Explain the methods to excavate a pit/ trench of desired depth/ slope, length and width. • Elucidate the concept of slope and its significance in excavation. • List the appropriate tools for shifting and placing earth. • Explain the purpose and importance of sorting gravels or oversized aggregates from the soil for backfilling.	• Demonstrate the process of excavating a pit/trench, maintaining the required slope, length, width and depth of the excavation, using the appropriate tools. • Show how to properly handle and dispose of materials removed during earth work. • Demonstrate the proper handling and storage of fencing/ barricading materials, safety signage, ladders, ropes, and earth-cutting and shifting tools. • Demonstrate the application of different excavation techniques and relevant safety measures. • Show how to inspect the excavated pit for loose material, soil lumps, pebbles, or any other debris. • Show how to compact the base layer of the excavated pit to achieve the desired compaction levels. • Demonstrate the process of refilling the excavated trenches, pits, or areas surrounding structures.
Classroom Aids:	
Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board, registers and other teaching aids	
Tools, Equipment and Other Requirements	
Chisel, Hammer, Bar Tying Hook, Bending Lever, Podger Spanner, Hack Saw Blade and Frame, Pointed Chisel, Sledge Hammer, Pin Plate, Working Bench, Trowel, Pointing Trowel, Shovel, Mortar Pan, Spade, Pick Axe, Wheel Barrow, Lime Powder, Wooden Pegs, Hammer, Hard Broom, Ladder, Measurement Tape, Spirit Level, Plumb-Bob, Mason's Line, Cutting Machine, Bending Machine, M.S, Tor Steel, TMT Steel Binding Wires, Steel Cutting Blade, Cover Blocks, Wooden Planks, Rebar Tying Machine, Lifting Appliance (Sling, Shackle, Belts), Cup-Lock Scaffolding Components (Set), 40 NB Pipes, Swivel Coupler, Fixed Clamp, Steel Walers, Steel Walkways, Gauge Measure, Steel Scale, Try Scale, GI Bucket 5L Capacity, Hand Roller, Plate Vibrator, Source Of Water, Power Source, Rail Piece, Spanner (Set), Wrench, Pulley, Nuts And Bolts, Rope, Hacksaw, Aluminium/GI Ladder, Safety Net, Safety Helmet, Safety Goggles, Safety Shoes, Safety Belt, Cotton Gloves, Ear Plugs, Reflective Jackets, Dust Mask, Fire Prevention Kit, Face Shield, Overalls, Knee Pads, Safety Harness, Fire Extinguisher, First Aid Box, Safety Tags, Safety Notice Board/Safety Message Board	

Module 9: On-the-Job Training

Mapped to Helper Bar Bender and Steel Fixer

Mandatory Duration: 30:00	Recommended Duration: 00:00
Location: On-Site	

Terminal Outcomes

- Show how to shift and stack materials, tools and equipment for reinforcement work.
- Demonstrate the ability to interpret and follow instructions, including diagrams and blueprints, for shifting and stacking materials in reinforcement work.
- Demonstrate knowledge of hand and power tool maintenance, inspection, and proper handling techniques.s
- Demonstrate ways to mark and cut reinforcement bars to the required length.
- Explain the ways to tie reinforcement bars using different types of ties.
- Explain the process of erecting and dismantling a temporary scaffold.
- Elucidate ways to work according to personal health, safety and environment protocols at construction sites.
- Explain ways of excavation and backfilling of a pit/trench as per instruction.

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	**Specialisation**	**Relevant Industry Experience**		**Training Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
B. Tech	Civil/Mechanical/ Electrical	0.5	Bar Bending and Fixing	0	-	
Diploma	Civil/Mechanical/ Electrical	1	Bar Bending and Fixing	0	-	
ITI	Civil/Mechanical/ Electrical	2	Bar Bending and Fixing	0	-	
General BA/BSc./ EX-Army/ 12th	Civil/Mechanical/ Electrical	2				

Trainer Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "Helper Bar Bender and Steel Fixer", mapped to QP: "CON/Q0201, v4.0", Minimum accepted score is 80%	Recommended that the Trainer is certified for the Job Role: "Trainer (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2601, v2.0". The minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	**Specialization**	**Relevant Industry Experience**		**Training/Assessment Experience**		**Remarks**
		Years	***Specialization***	***Years***	***Specialization***	
B. Tech	**Civil/Mechanical/ Electrical**	**1**	Bar Bending and Fixing	0	-	
Diploma	Civil/Mechanical/ Electrical	2	Bar Bending and Fixing	0	-	
ITI	Civil/Mechanical/ Electrical	3	Bar Bending and Fixing	0	-	

Assessor Certification	
Domain Certification	**Platform Certification**
Certified for Job Role "Helper Bar Bender and Steel Fixer", mapped to QP: "CON/Q0201 v4.0", the Minimum accepted score is 80%	Recommended that the Assessor is certified for the Job Role: "Assessor (Vet and Skills)", mapped to the Qualification Pack: "MEP/Q2701, v2.0", with a minimum score of 80%.

Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SIP
- The batch allocation Matrix prepared for each month based on previous months' performance of AAs, which determines the quantum of Assessment which can be allocated to each AA for a month
- Post allocation of assessment, Assessment agencies send the assessment confirmation to SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process.

2. Testing Environment:

- A combination of Theory and practical/demonstration test is deployed to assess knowledge and Skill respectively of Learners.
- Assessment is conducted at Training center in in-person/offline mode
- For Skill assessment, environment is simulated to create a realistic Working Environment that should replicate the key features of the workplace. In job roles, where it is difficult to replicate the same, the OJT assessment is implemented.
- During the practical task, trainees are assessed on their workmanship, quality of finished product, time management, etc., based on the performance criteria (PC), knowledge and understanding and their professional and soft skills as specified in the qualification pack.
- Knowledge assessment is done through closed ended questions up to level 4 and from level 5 onwards, it is mixture of open ended and closed ended questions

3. Assessment Quality Assurance levels/Framework

- Assessment criteria is developed for each QP which acts as a guide for developing question set /banks
- Sample questions aligned with Assessment criteria for each QP are developed by SSC and validated by industry
- Taking reference of Assessment criteria and Sample Questions, AAs create the question bank which is further validated by SSC
- Questions are mapped to the specified assessment criteria
- It is mandatory that Assessor and Trainer must be ToA certified & ToT Certified respectively
- Continuous Monitoring through virtual and In-person mode are conducted to ensure the assessment is conducted as per stipulated process
- Process and Technical audit of assessment batches by quality team are conducted to avoid the errors in assessment process

- A well -defined comprehensive framework of NON-COMPLIANCE MATRIX is defined and implemented to identify the non-compliance made by assessor and AA and punitive actions are taken correspondingly.
- The capacity building sessions are conducted regularly for assessors and assessment agencies to update them about best practices in assessment

4. Types of evidence or evidence-gathering protocol:

- Post Assessment, the evidences are uploaded by Assessor to assessment agency and further assessment agency to SSC as per stipulated TAT
- Evidences are broadly the photographic and video graphic in nature
- Assessment agencies upload the evidence on SIP and detailed evidence on SSC digital platform (ZoHO)
- Evidences are; NOS wise-Geotagged photographs and videos of Theory Test &Practical Tasks, Attendance sheet, result summary sheet, group photographs.

5. Method of verification or validation:

- The process and technical audit of assessment batches are done by SSC
- Attendance of each candidate is verified and it is ensured that only those candidates are assessed by assessors who are meeting the stipulated minimum percentage of attendance
- The result of each candidate is verified, it is verified that that result on SIP are matching with respect to summary sheet submitted by AAs
- Under detailed technical audit for sample of batches, the knowledge and skill assessment results for each candidate is checked in technical aspect.
- All the evidences of batches are preserved on server of SSC digital platform

On the Job:

- On job training (OJT), candidates undergo training and leaning at actual workplace for a fixed period of time and a certain weightage of assessment is allocated out of total skill weightage of Qualification Pack for undergoing OJT as stipulated by CSDCI. This OJT score and assessors' end point score are combined to arrive at final Marking/grading of trainees' skill test. The OJT score is determined by Supervisor of company under which candidates undergo on job training.

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 it 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
EHS	Environment Health and Safety
IPS	Indian Patent Stone
VDF	Vacuum Dewatering Flooring