



Participant Handbook

Sector
Construction

Sub-Sector
**Real Estate and
Infrastructure Construction**

Occupation
Bar Bending & Fixing

Reference ID: **CON/Q0203, Version 1.0**

NSQF Level 4



Bar Bender & Steel Fixer

Acknowledgements

The Participant Handbook for Bar bending & still fixer is the outcome of team work by Standards & Research of construction Skill Development Council, and Experts from construction Industry.

We are thankful to NSDC for entrusting us with this task of development of Bar bending & still fixer Handbook.

The team owes a special gratitude to L&T, HCC, Shapoorji Pallonji Engineering & Construction and other stakeholders for their dedicated and continued technical support.

We also acknowledge Stellar Ventures (P) Ltd and NBCC for providing photographic support for this book.

CEO

About this book

Construction industry is the second largest employer in India. As one of the leading avenues for employment in the country, the role played by this industry in the economic development of India is pivotal. However, despite its vast potential, the construction Industry faces a key challenge of shortage of skilled manpower. This hampers the progress of the industry, as the quality of constructed structure is poor and most projects failed to get completed within timelines.

There is a vast difference between the required skill and available skills of workers in the industry today. To reduce the skill gap, appropriate skilling of workforce needs to be carried out. This will not only empower the worker but also benefit the construction industry in terms of quality and productivity.

This Participant book is developed to impart training for the skill and knowledge required to work as a Bar bending & still fixer in construction industry. It is designed based on Bar bending & still fixer Qualification Pack under the National skill qualification framework. It comprises of the following NOS/ topics.

- Read and understand routine drawings / sketches and Bar Bending Schedule
- Use hand and power tools for cutting and bending of reinforcement
- Prepare, fabricate, place and fix reinforcement for RCC structures
- Work effectively in a team to deliver desired results at the workplace
- Plan and organize work to meet expected outcomes
- Work according to personal health, safety and environment protocol at construction site

This book is designed considering the lower educational background of the construction worker. Therefore, special efforts have been made to explain the concept required for the job mostly through photos and illustrations.

Symbols Used



Key Learning
Outcomes



Steps



Time



Tips



Notes



Unit
Objectives

UNIT 1.3: Bar Bender And Steel Fixer As A Job Role

Unit Objectives

At the end of this unit, you will be able to:

1. Know role and duties of a bar bender and steel fixer ;
2. Know personal and professional attributes under the bar bender and steel fixer occupation ;
3. List QP and NOS details of bar bender and steel fixer programme ; and
4. Know about career path as a bar bender and steel fixer

1.3.1 Role Of A Bar Bender And Steel Fixer

A bar bender and steel fixer works on the reinforcement steel used for reinforced cement concrete works. They perform a wide range of activities relating to straightening, cutting, bending and placing reinforcement as per working structural drawings. The role of bar bender and steel fixer is further detailed as:



Fig 1.3.1: Bar bending and steel fixing work

- A bar bender & fixer should be able to identify types of bars, read drawings & prepare schedule, fabricate using hand and power tools, store, transport and fix reinforcement in position in formwork in readiness for concrete pours.
- He has to deal with his assistants; his colleagues and tradesmen with related skills and has to co-ordinate with the activities of the other tradesmen also.
- He should have proficiency in use of different tools, knowledge of commonly used construction material, ability to identify quality of rebars.

1.3.2 Duties Of A Bar Bender And Steel Fixer

At any construction site, the bar bender and steel fixer plays a vital role as follows:

1. Read drawing & bar bending schedules;
2. Identifies the types and grades of reinforcement to be used;

3. Calculate from drawings and BBS, the cut length, bending diameters etc.;
4. Estimate the quantity of material used in day to day work;
5. Correlates the sequence of reinforcement placing with fixing of inserts, sleeves, conduits and anchor;
6. Identifies and uses correct ties on structure;
7. Estimate the time requirement of a particular job;
8. Aims to minimize wastage;
9. Cut & bend reinforcement exactly as per requirement of the bar bending schedules;
10. Ensure that bent bars of the same type are bundled together and tagged for identification;
11. Ties and fastens bundled bars to ensure they remain in position whether horizontal or vertical;
12. Ensuring stacking & storing of steel tidily and safely;
13. Execute the bar bending works as per standard procedure;
14. Work safely at all times using ladders, scaffolds, and safety belts;
15. Ensure housekeeping at workplace.



Fig 1.3.2: Bar bending work



Fig 1.3.3: Bar bending work

1.3.3 Personal Attributes For Job Role Of Bar Bending

A bar bender and steel fixer in addition to his skills should also possess certain soft skills and personal attributes such as:

- Ability to work in a well-organized and accurate manner ;
- Awareness of safety issues ,especially when working at heights;
- Ability to work as a part of team ;
- A good level of fitness ;
- Awareness of personal hygiene ;
- Hard working and reliable ;
- Courteous and dedicated ;
- Good Communication Skills.

1.3.4 QP And NOS Details For Bar Bender And Steel Fixer

Qualification Pack (QP) comprises of a group of National Occupational Standards (NOS's) which describes the desired outcomes in order to successfully perform the function and the knowledge required for the same.

The National Skills Qualifications Framework (NSQF) provides the description of professional and functional knowledge and skill along with the responsibility that a person must display for any given competency level. The NSQF describes a total of 10 levels, level 1 being entry level the least complex and level 10 being the top most level.

This programme is based on qualification pack called bar bender & steel fixer. The qualification pack for bar bender & steel fixer is placed at level 4 in the National skill qualification framework or NSQF. The qualification pack code for bar bender & steel fixer is CON/Q0203. Under bar bender & steel fixer QP there are six no of NOS which detail the functions to be performed at work site by Bar bender.

NOS CODE	Major Function/Task
CON/N0204	Read and understand routine drawings / sketches and Bar Bending Schedule
CON/N0205	Use hand and power tools for cutting and bending of reinforcement
CON/N0206	Prepare, fabricate, place and fix reinforcement for RCC structures
CON/N8001	Work effectively in a team to deliver desired results at the workplace
CON/N8002	Plan and organize work to meet expected outcomes
CON/N9001	Work according to personal health, safety and environment protocol at construction site

1.3.5 Bar Bending & Steel Fixer Details Of Education & Qualification

Career map for bar bender and steel fixer

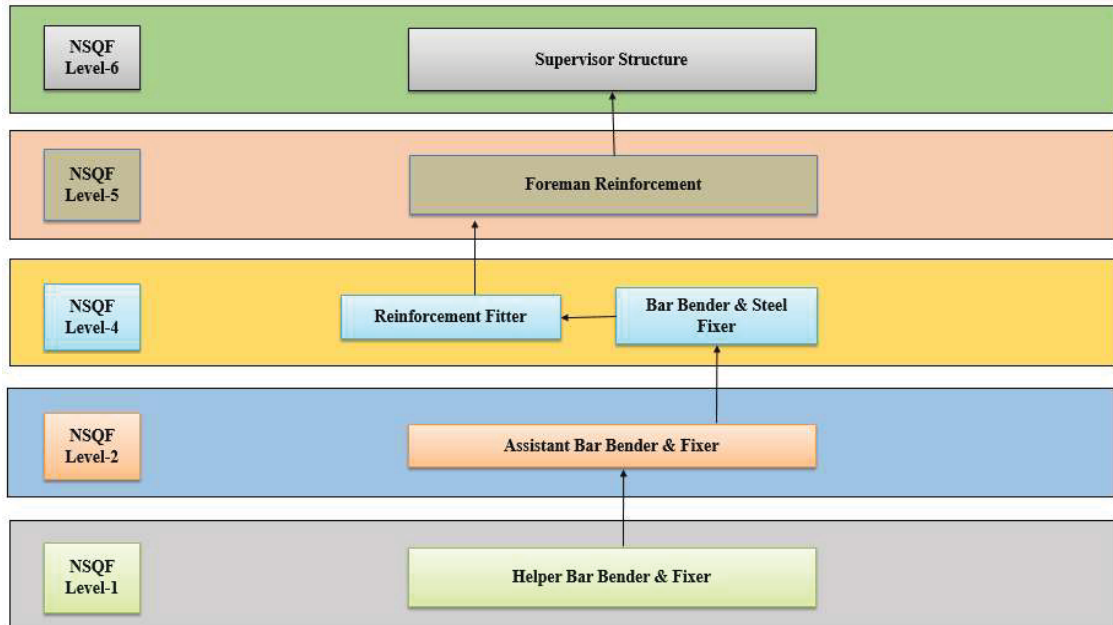


Fig 1.3.3: Career progression for bar bending and steel fixing occupation

Education and experience requirements for a current recommended job role		
Job role	Education	Experience
Bar bender and steel fixer	Preferably 5th standard	2 years site experience as a certified assistant bar bender & steel fixer

Education and experience requirements for further career progression		
Job role	Education	Experience
Reinforcement fitter	Preferably 8th standard	2 years site experience as a certified bar bender & steel fixer

These are preferred and issued for the benefit of the students but not mandatory.



Skill India
कौशल भारत-कुशल भारत



सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP



N·S·D·C
National
Skill Development
Corporation
Transforming the skill landscape



Address: 204, Aashirwad Complex, D-1, Green Park, New Delhi – 110016
E-mail: standards@csdcindia.org
Web: www.csdcindia.org
Phone: +91-11-46584466
CIN No.: 0000000000000000

Price: ₹ 161/-

978-1-111-22222-45-7

