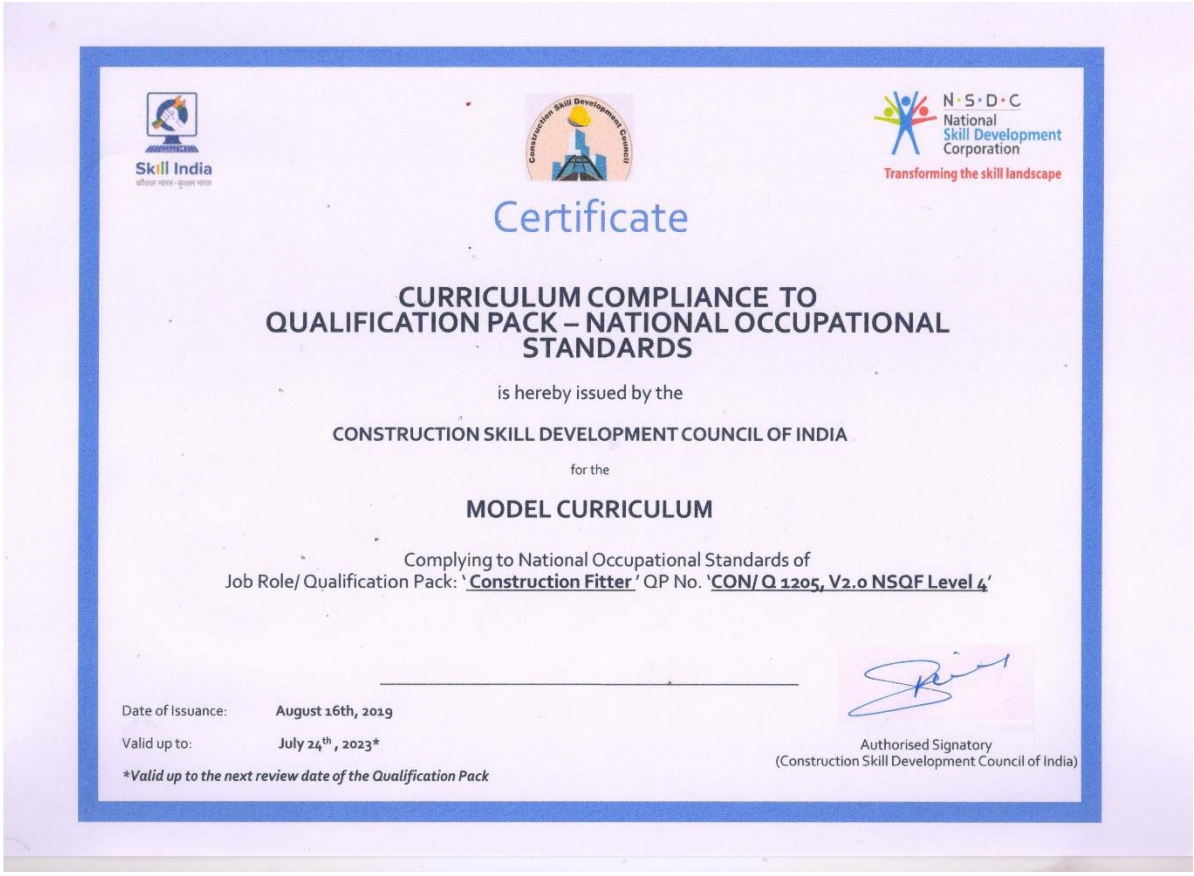
Model Curriculum

Construction Fitter

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: Fabrication
REF ID: CON/Q01205, Version 2.0
NSQF LEVEL: 4



Skill India

Construction Skill Development Council

N·S·D·C National Skill Development Corporation

Transforming the skill landscape

Certificate

CURRICULUM COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

CONSTRUCTION SKILL DEVELOPMENT COUNCIL OF INDIA

for the

MODEL CURRICULUM

Complying to National Occupational Standards of
Job Role/ Qualification Pack: '**Construction Fitter**' QP No. '**CON/ Q 1205, V2.0 NSQF Level 4**'

Date of Issuance: **August 16th, 2019**

Valid up to: **July 24th, 2023***

Valid up to the next review date of the Qualification Pack

Authorised Signatory
(Construction Skill Development Council of India)

TABLE OF CONTENTS

Construction Fitter

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "Construction Fitter", in the "Construction" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	**Construction Fitter**		
Qualification Pack Name & Reference ID	CON/Q1205, Version 2.0		
Version No.	2.0	**Version Update Date**	14-09-2017
Pre-requisites to Training	Nil		
Training Outcomes	**After completing this programme, participants will be able to:** • Demonstrate marking on structural steel elements to complete the fit-up in accordance with shop drawing • Demonstrate fit-up of assemblies in fabrication yard • Interact effectively in a team to deliver results at a construction site • Follow safety norms as per organisational and environment protocol at construction site		

This course encompasses 4 out of 4 National Occupational Standards (NOS) of "Construction Fitter" Qualification Pack issued by "Construction Skill Development Council of India".

S.No.	Module	Key Learning Outcomes	Equipment Required
1	**Introduction to fabrication** **Theory Duration** (hh:mm) 08:00 **Practical Duration** (hh:mm) 00:00	• Explain role and responsibilities of the construction fitter • Explain personal attributes required in fabrication occupation • Discuss career growth paths for construction fitter	
2	**Carry out marking on structural steel elements to complete the fit-up in accordance with shop drawing** **Theory Duration** (hh:mm) 32:00 **Practical Duration** (hh:mm) 76:00 **Corresponding NOS Code** CON/N1208	• Explain basic arithmetic and geometry • Explain standard procedure of construction fitting work. • Explain procedure involved in fabrication of structural steel assemblies • Explain different symbols on the drawing sheet and their correct interpretations • Describe nomenclature for assemblies, components under fabrication • Discuss plate development drawing/ complex shop drawings/ hand sketches relevant to fit-up operation of structural steel section and assemblies. • Identify orientation of sections from show drawings. • Compute dimensions (both angular and linear) of sections from show drawings. • Select the correct materials and sections based on shape, size and grade from shop drawings. • Demonstrate how to check for bevel angle, scalloping, drilling of holes etc. • Demonstrate how to clean the steel sections to remove dust, paints, oil and rust • Identify the start point for measuring and marking on section as per drawing • Demonstrate use of different tools and tackles for measurement and marking on structural steel sections • Demonstrate how to inscribe appropriate marks on the section at required lengths.	• Drilling machine with bits • Electric screw gun • Electric hexa saw • Welding tools and accessories • Gas cutting tools and accessories • Grinding tools and accessories • Pliers • Files • Temperature gun/ chalk • Clamps and anchors • Vices • Forklift • Slings • Wire ropes • Shackles • Spreader board • Chain • Link • Eye hook • Eye bolts

S.No.	Module	Key Learning Outcomes	Equipment Required
			• Bull dog grips • Clamp • socket • metric tape • line dori • scale • welding gauge • hammer • punch
3	**Carry out fit-up of assemblies in fabrication yard** **Theory Duration** (hh:mm) 60:00 **Practical Duration** (hh:mm) 156:00 **Corresponding NOS Code** CON/N1209	• Explain different kind of supports and applications of temporary supports in fit-up work • Explain different types of clamps, jacks and anchorages, their use and operation • Describe the maintenance and upkeep of tools and tackles • Explain need and importance of Tack welding • Explain importance of preparing fabrication platform or bed • Explain different methods and process for making connections in metal sections • Explain standard quality norms and organisational procedures related to fit up e.g. reports and data required • Estimate the required number of fixtures such as clamps etc. for completing the assigned task • Erect/install all temporary supports and clamps at required places after visually checking them for workability • Identify the orientation of the sections from drawings • Demonstrate how to restrict the movement of the sections while lowering • Demonstrate how to place section as per marking • Demonstrate how to maintain the root gap between the sections • Demonstrate the operational procedure of striking, realignment etc. for accurate positioning of the components • Supervise the process of tack welding • Demonstrate how to check for dimensions of post welded assembles to confirm shrinkage is within tolerance • Demonstrate how to bend and straighten the sections • Demonstrate how to correct distortions by applying appropriate methods like application of heat, force or a combination of both	• Drilling machine with bits • Electric screw gun • Electric hex saw • Welding tools and accessories • Gas cutting tools and accessories • Grinding tools and accessories • Pliers • Files • Temperature gun/ chalk • Clamps and anchors • Vices • Forklift • Slings • Wire ropes • Shackles • Spreader board • Chain • Link • Eye hook • Eye bolts • Bull dog grips

S.No.	Module	Key Learning Outcomes	Equipment Required
			• Clamp • socket • metric tape • line Dori • scale • welding gauge • hammer • punch
4	**Work effectively in a team to deliver desired results at the workplace** **Theory Duration** (hh:mm) 8:00 **Practical Duration** (hh:mm) 16:00 **Corresponding NOS Code** CON/N8001	• Demonstrate effective communication skills while interacting with co-workers, trade seniors and others during the assigned task. • Interpret work sketches, construction fitter works formats, permits, protocols, checklists etc. • Interpret scope of construction fitter works • Demonstrate effective reporting to seniors as per applicable organisational norms. • Explain effects and benefits of timely actions relevant to construction fitter works with examples • Explain importance of team work and its effects relevant to construction fitter works with examples • Demonstrate team work skills during assigned task.	
5	**Work according to personal health, safety and environment protocol at construction site** **Theory Duration** (hh:mm) 12:00 **Practical Duration** (hh:mm) 32:00 **Corresponding NOS Code** CON/N9001	• Explain the types of hazards at the construction sites and identify the hazards specific to the construction fitter work • Recall the safety control measures and actions to be taken under emergency situation • Explain the classes of fire and types of fire extinguishers • Demonstrate the operation of fire extinguisher. • Demonstrate different methods involved in providing First aid to the affected person. • Explain the importance of participation of workers in safety drills • Demonstrate wearing of various Personal Protective Equipment (PPE) like helmet, safety shoe, safety belt, safe jackets and other safety equipment relevant to construction fitter job • Explain the reporting procedure to the concerned authority in case of emergency situations • Describe the standard procedure for handling, storing and stacking of material, tools, equipment and accessories • Explain different types of waste and their disposal method, which are general to the construction sites	• Leather Hand Gloves • Jump suit • Wire brush • Hand & Leg guards leather • Safety goggles • Nose mask • Ear protection • Fire extinguishers • Sand buckets Flashback arrestors • Welding helmet

S.No.	Module	Key Learning Outcomes	Equipment Required
		• Explain the purpose and importance of vertigo test at construction site • Demonstrate vertigo test • List out basic medical tests required for working at construction site • Explain the types and benefits of basic ergonomic principles, which should be adopted while carrying out specific task at the construction sites • Explain the importance of housekeeping • Demonstrate housekeeping practice followed after construction fitter works	• Welding glass
	Total Duration **Theory Duration 120:00** **Practical Duration 280:00**	Unique Equipment Required: Drilling machine with bits; Electric screw gun; Electric hex saw; Welding tools and accessories; Gas cutting tools and accessories; Grinding tools and accessories ; Pliers; Files; Temperature gun/ chalk; Clamps and anchors; Vices; Forklift; Slings; Wire ropes; Shackles; Spreader board; Chain; Link; Eye hook; Eye bolts; Bull dog grips; Clamp; socket; metric tape; line dori ; scale; welding gauge; hammer; punch; Safety Helmet ; Safety goggles ; Safety shoes ; Safety belt; gloves; Ear plugs ; Reflective jackets; Dust mask; Fire Prevention kit; Barricade tape; Safety Tags; Jacks (manual and mechanical); Leather Hand Gloves; Jump suit; Wire brush; Hand & Leg guards leather; Safety goggles; Nose mask; Ear protection; Fire extinguishers; Sand buckets Flashback arrestors; Welding helmet; Welding glass Classroom aids and other requirements: Black/White board, marker, Projector/LED Monitor, Computer, Trade specific charts, Safety tags, Safety Notice board registers and other teaching aids	

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: "Construction Fitter" mapped to Qualification Pack: "CON/Q1205", 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/Q1205 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/12th standard pass
4a	**Domain Certification**	Certified for the job role "Construction Fitter" mapped to QP:"CON/Q1205 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/12th 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