Model Curriculum

Helper Fabrication

SECTOR: Construction
SUB-SECTOR: Real Estate and Infrastructure Construction
OCCUPATION: Fabrication
REF ID: CON/Q01201, V2.0
NSQF LEVEL: 2
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: ‘Helper Fabrication’ OP No. ‘CON/Q 3309, V2.0 NSQF Level 2’

Date of issue: August 16th, 2019
Valid up to: July 24th, 2023*

*Valid up to the next review date of the Qualification Pack

Authorized Signatory
(Construction Skill Development Council of India)
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Helper Fabrication

CURRICULUM / SYLLABUS

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

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Helper Fabrication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualification Pack Name &amp; Reference ID</td>
<td>CON/Q1201, V2.0</td>
</tr>
<tr>
<td>Version No.</td>
<td>2.0</td>
</tr>
<tr>
<td>Pre-requisites to Training</td>
<td>NIL</td>
</tr>
<tr>
<td>Training Outcomes</td>
<td>After completing this programme, participants will be able to:</td>
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<tr>
<td></td>
<td>- Identify materials, tools, tackles and consumables which are relevant to fabrication work.</td>
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<tr>
<td></td>
<td>- Demonstrate handling procedure for materials, tools, tackles and consumables used in fabrication work.</td>
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<tr>
<td></td>
<td>- Assist in fabrication activities.</td>
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<tr>
<td></td>
<td>- Follow safety norms as defined by organization, adopt healthy and safe work practices.</td>
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</tbody>
</table>
This course encompasses 3 out of 3 National Occupational Standards (NOS) of “Helper Fabrication” Qualification Pack issued by “Construction Skill Development Council of India”.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Module</th>
<th>Key Learning Outcomes</th>
<th>Equipment Required</th>
</tr>
</thead>
</table>
| 1       | Introduction to fabrication occupation | • Describe the role and responsibilities of a helper fabrication.  
• Apply the basic knowledge of units, measurement, and arithmetic calculation relevant to fabrication work  
• Recall the basic terms used in the occupation of the fabrication.  
• Discuss the career progression options of a helper fabrication. | |
|         | Theory Duration |  
(hh:mm)  
08:00 | |
|         | Practical Duration |  
(hh:mm)  
00:00 | |
|         | Corresponding NOS Code | Bridge Module | |
|         | CON/N1201 | |
| 2       | Identify, and handle materials, tools, tackles and consumables | • Describe welding method and classify different types of welding (MIG/TIG/SMAW/SAW).  
• List different types of equipment, consumables and tools required for different types of welding (MIG/TIG/SMAW/SAW).  
• Identify the materials used for fabrication (classification based upon shape and size.)  
• Recognize physical properties of metals.  
• Identify different types of filler materials used in different methods of welding.  
• Demonstrate do’s and don’ts while lifting and shifting lightweight materials (ergonomic principles of lifting and shifting).  
• Define methods of stacking and storing various materials, tools and equipment used in fabrication (including cables, welding machines, gas cylinders, grinding machine, anchors, vices, jacks etc.).  
• Demonstrate stacking and storing of various materials, tools and equipment used in fabrication.  
• Identify different types of grinders and gas cutting equipment used for fabrication operation.  
• List different types of gases used in the various fabrication process (cutting and welding). | • 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  
• Bull dog grips  
• Clamp  
• socket  
• metric tape  
• line dori |
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Module</th>
<th>Key Learning Outcomes</th>
<th>Equipment Required</th>
</tr>
</thead>
</table>
|        |        | • Demonstrate the process to handle, stack and shift fabrication materials such as tools, tackles and consumables. | • scale  
|        |        | • Explain safety requirements for transportation of gas cylinders. | • welding gauge  
|        |        | • Identify the impurities and explain the importance of clean joints. | • hammer  
|        |        | • Describe different types of impurities that can be found in the fabrication yard. | • punch  
|        |        | • Explain different methods for cleaning the metal surface. | • Safety Helmet  
|        |        | • Demonstrate do’s and don’ts to be followed while cleaning the metal surface. | • Safety goggles  
|        |        | • Demonstrate correct method for shifting and stacking tools and equipment. | • Safety shoes  
|        |        | • Explain the importance of lighting and ventilation during welding works. | • Safety belt  
|        |        | • Describe common terms used in fabrication occupation | • gloves  
|        |        | • Explain about fabrication platform | • Ear plugs  
|        |        | • Explain the method to prepare the platform. | • Reflective jackets  
|        |        | • Explain fit-up procedures (such as measuring, marking, cutting, edge preparation, lifting & shifting, placing, positioning, anchoring etc.) | • Dust mask  
|        |        | • Describe bolting operation and different types of tools required for bolting of components in a bolted assembly. | • Fire Prevention kit  
|        |        | • Explain different procedures for bolting. | • Barricade tape  
|        |        | • Recall do’s and don’ts while conducting measuring and marking on metals. | • Safety Tags  
|        |        | • Identify common trade terminologies used in bolting and fit-up. | • Drilling machine with bits  
|        |        | • Demonstrate storing and stacking of the consumables, tools and tackles | • 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  
|        |        | | • Bull dog grips  
|        |        | | • Clamp  

**3 Provide support and assistance to fabrication activities**

**Theory Duration**  
(hh:mm)  
36:00

**Practical Duration**  
(hh:mm)  
138:00

**Corresponding NOS Code**  
CON/N1202
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Module</th>
<th>Key Learning Outcomes</th>
<th>Equipment Required</th>
</tr>
</thead>
</table>
| 4      | Work according to personal health, safety and environment protocol at construction site | • Demonstrate to carry out removal of scrap materials from the fabrication platform, placing clamps and arrestors and positioning of lightweight materials to proper position as per instruction | • 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 |

Theory Duration (hh:mm)  
12:00  
Practical Duration (hh:mm)  
36:00  
Corresponding NOS Code  
CON/N9001
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Module</th>
<th>Key Learning Outcomes</th>
<th>Equipment Required</th>
</tr>
</thead>
</table>
|         |        | • Explain different types of waste and their disposal method, which are general to the construction sites  
|         |        | • 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 fabrication works |

<table>
<thead>
<tr>
<th>Theory Duration</th>
<th>66:00 hours</th>
<th>Practical Duration</th>
<th>234:00 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand tools</td>
<td>Stud Wrenches, Open-End Wrenches, Crescent Wrenches, Hammer, Nibbler, pliers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power tools</td>
<td>Drilling machine with bits, Electric screw gun, Electric hexa saw, Welding tools and accessories, Gas cutting tools and accessories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measuring tools</td>
<td>Measuring tape, Plumb Bob, Spirit level, Chalks line, Try square, Water level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment and Machinery</td>
<td>Tower crane, Mobile crane, Forklift, Scissor lift, Hydraulic jacks, Electric Wire Rope Hoist, Electrical winch, Electrical chain hoist, derrick</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifting accessories</td>
<td>Belts, Slings, Wire ropes, Shackles, Spreader board, Chain, Link, Eye hook, Eye bolts, Bull dog grips, Clamp, socket</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety instruments</td>
<td>Safety Helmet, Safety goggles, Safety shoes, Safety belt, Cotton gloves, Ear plugs, Reflective jackets, Dust mask, Fire Prevention kit, Barricade tape, Safety Tags</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Classroom Requirement</td>
<td>Classroom of 30 student’s capacity, Black/White board, Projector/LED Monitor, Computer, Trade specific charts and other teaching aids.</td>
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</tr>
</tbody>
</table>

Grand Total Course Duration: 300 Hours, 0 Minutes

(This syllabus/curriculum has been approved by Construction Skill Development Council of India)
## Trainer Prerequisites for Job role: “Helper Fabrication” mapped to Qualification Pack: “CON/Q1201”, Version 2.0”

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Area</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Description</td>
<td>To deliver accredited training service, mapping to the curriculum detailed above, in accordance with the Qualification Pack “CON/Q1201, Version 2.0”.</td>
</tr>
<tr>
<td>2</td>
<td>Personal Attributes</td>
<td>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</td>
</tr>
<tr>
<td>3</td>
<td>Minimum Educational Qualifications</td>
<td>ITI/12th standard pass</td>
</tr>
<tr>
<td>4a</td>
<td>Domain Certification</td>
<td>Certified for the job role “Helper Fabrication” mapped to QP: “CON/Q1201 Version 2.0” Minimum accepted score is 80%</td>
</tr>
<tr>
<td>4b</td>
<td>Platform Certification</td>
<td>Certified for the job role “Trainer” mapped to QP: “MEP/Q2601” Minimum accepted score is 80%</td>
</tr>
<tr>
<td>5</td>
<td>Experience</td>
<td>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.</td>
</tr>
</tbody>
</table>

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