



QUALIFICATION FILE

Construction Welder

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☐ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☒ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☐ Future Skills ☐ OEM

NCrF/NSQF Level: 4

Submitted By:

Construction Skill Development Council of India

Address: CPB - 201 & 202, Block-4B, DLF Corporate Park, Phase - III, MG Road, Near Guru Dronacharya Metro Station, Gurugram, Haryana - 122002

Submitting Body Contact Details:

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Section 1: Basic Details

1.	Qualification Name	Construction Welder	
2.	Sector/s	Construction	
3.	Type of Qualification: ☐ New ☒ Revised ☒ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: 2019/CON/CSDCI/03114, v 1.0	Qualification Name of existing/previous version: Construction Welder
4.	a. OEM Name b. Qualification Name <i>(Wherever applicable)</i>	NA	
5.	National Qualification Register (NQR) Code &Version <i>(Will be issued after NSQC approval)</i>	QG-04-CO-04206-2025-V1-CSDCI & v 2.0	6. NCrF/NSQF Level: 4
7.	Award (Certificate/Diploma/Advanced Diploma/ Any Other) <i>(Wherever applicable specify multiple entry/exits also & provide details in annexure)</i>	Certificate	
8.	Brief Description of the Qualification	A Construction Welder is responsible for joining, cutting, and repairing metal components at construction sites using various welding techniques. They work with steel structures, pipelines, and other metal frameworks, ensuring high-quality welds that meet industry standards and project specifications.	

9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience:		
		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
		1.	12th grade pass	
		2.	10 th grade pass with 2 years of ITI (in Welder Trade)	
		3.	11th grade pass	1-year relevant experience
		4.	10 th grade pass	2-year relevant experience
		5.	8th grade pass	4-year relevant experience
		6.	Previous relevant qualification of NSQF Level 3.5 (Construction Fitter)	1.5-year relevant experience
		7.	Previous relevant qualification of NSQF Level 3 (Assistant Construction Fitter)	3-year relevant experience
		b. Min. Job Entry Age: As per Govt. Norms		
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	16	11. Common Cost Norm Category (I/II/III) (wherever applicable): I	
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NA		

13.	Training Duration by Modes of Training Delivery (<i>Specify Total Duration as per selected training delivery modes and as per requirement of the qualification</i>)	Minimum Duration: - ☒ Offline ☐ Online ☐ Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>120</td> <td>300</td> <td>60</td> <td>-</td> <td>480</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (Refer Blended Learning Annexure for details) Maximum Duration: - ☒ Offline ☐ Online ☐ Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>240</td> <td>720</td> <td>120</td> <td>-</td> <td>1080</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (Refer Blended Learning Annexure for details)	Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	120	300	60	-	480	Online						Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	240	720	120	-	1080	Online					
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Online																																						
14.	Aligned to NCO/ISCO Code/s (<i>if no code is available mention the same</i>)	NCO-2015/7212.0303																																				
15.	Progression path after attaining the qualification (<i>Please show Professional and Academic progression</i>)	Senior Construction Welder																																				
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																																				
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:																																				
18.	Is the Job Role Amenable to Persons with Disability	☐ Yes ☒ No If "Yes", specify applicable type of Disability:																																				

19.	How Participation of Women will be Encouraged	To encourage women to participate in Fabrication job roles, it is important to provide education, mentorship and networking opportunities, as well as training and development programs. Flexible work arrangements and promoting successful women in Welding can also inspire and encourage women to pursue careers in this field. Creating a culture of inclusion and diversity can help women feel welcome and valued in Fabrication job roles, through policies and practices that support work-life balance, equal pay and promotion opportunities, and a safe and respectful workplace.	
20.	Are Greening/ Environment Sustainability Aspects Covered <i>(Specify the NOS/Module which covers it)</i>	☒ Yes ☐ No CON/N9001	
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☐ Yes ☒ No Colleges ☒ Yes ☐ No	
22.	Name and Contact Details of Submitting / Awarding Body SPOC <i>(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	Name: Abhisek Prasad Mishra Email: abhisek@csdcindia.org Contact No.: 0124-4513915-18 Ext-23 Website: www.csdcindia.org	
23.	Final Approval Date by NSQC: 08-05-2025	24. Validity Duration: 3 Years	25. Next Review Date: 30-04-2028

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non- Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Carry out grinding activities on structural steel elements	CON/N1206 & v 4.0	Core	3	3	20	40	30	-	90	30	70	-	-	100	10
2.	Work according to personal health, safety and environment protocol at construction site	CON/N9001 & v 3.0	Core	4	1	05	25	-	-	30	30	70	-	-	100	5
3.	Work effectively in a team to deliver desired results at the workplace	CON/N8001 & v 3.0	Non- Core	4	1	05	25	-	-	30	30	70	-	-	100	5

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/ Non- Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
4.	Employability Skills (30 Hours)	DGT/VSQ/NO 101 & v 1.0	Non-Core	2	1	30	-	-	-	30	20	30	-	-	50	5
Duration (in Hours) / Total Marks					6	60	90	30	-	180	110	240	-	-	350	25

Elective NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

Elective 1: Metal Inert Gas (MIG) Welding

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core / Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Carry out preparatory works for Metal Inert Gas (MIG) Welding operations	CON/N1253 & v 2.0	Core	4	3	20	60	10	-	90	30	70	-	-	100	25
2.	Carry out Metal Inert Gas (MIG) Welding as per requirement in fabrication workshop or construction site	CON/N1254 & v 2.0	Core	4	7	40	150	20	-	210	30	70	-	-	100	50
Duration (in Hours) / Total Marks					10	60	210	30	-	300	60	140	-	-	200	75

Elective 2: Tungsten Inert Gas (TIG) Welding

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core / Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Carry out preparatory works for Tungsten Inert Gas (TIG) Welding operations	CON/N1255 & v 2.0	Core	4	3	20	60	10	-	90	30	70	-	-	100	25
2.	Carry out Tungsten Inert Gas (TIG) Welding as per requirement in fabrication workshop or construction site	CON/N1256 & v 2.0	Core	4	7	40	150	20	-	210	30	70	-	-	100	50
Duration (in Hours) / Total Marks					10	60	210	30	-	300	60	140	-	-	200	75

Elective 3: Shielded Metal Arc Welding (SMAW)

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core / Non-Core	NCrF/ NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Carry out preparatory work for Shielded Metal Arc Welding (SMAW) operations	CON/N1257 & v 2.0	Core	4	3	20	60	10	-	90	30	70	-	-	100	25
2.	Carry out Shielded Metal Arc Welding (SMAW) as per requirement in fabrication workshop or construction site	CON/N1258 & v 2.0	Core	4	7	40	150	20	-	210	30	70	-	-	100	50
Duration (in Hours) / Total Marks					10	60	210	30	-	300	60	140	-	-	200	75

Optional NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer to the curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core / Non-Core	NCrF/NSQF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Duration (in Hours) / Total Marks			NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: ____% (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Preferable Training Experience	
				Years	Specialization	Years	Specialization
		B.E. / B.Tech	Mechanical Engineering	2	Welding of Structures at Site	1	Fabrication and Welding
		OR					
		Diploma	Mechanical Engineering	3	Welding of Structures at Site	1	Fabrication and Welding
		OR					
		ITI	"Welder" Trade	6	Welding of Structures at Site	1	Fabrication and Welding
		OR					
		Ex-Army Graduate	in any Stream	6	Welding of Structures at Site	1	Fabrication and Welding

2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	<table border="1"> <tr> <th data-bbox="785 224 1066 362" rowspan="2">Minimum Educational Qualification</th> <th data-bbox="1066 224 1276 362" rowspan="2">Specialization</th> <th colspan="2" data-bbox="1276 224 1394 362">Relevant Industry Experience</th> <th colspan="2" data-bbox="1394 224 1610 362">Preferable Training Experience</th> </tr> <tr> <th data-bbox="1276 305 1394 362">Years</th> <th data-bbox="1394 305 1610 362">Specialization</th> <th data-bbox="1610 305 1709 362">Years</th> <th data-bbox="1709 305 1923 362">Specialization</th> </tr> <tr> <td data-bbox="785 362 1066 472">B.E. / B.Tech</td> <td data-bbox="1066 362 1276 472">Mechanical Engineering</td> <td data-bbox="1276 362 1394 472">6</td> <td data-bbox="1394 362 1610 472">Welding and Fabrication Work</td> <td data-bbox="1610 362 1709 472">1</td> <td data-bbox="1709 362 1923 472">Welding of Structures at Site</td> </tr> <tr> <td colspan="6" data-bbox="785 472 1923 509">OR</td> </tr> <tr> <td data-bbox="785 509 1066 620">Diploma</td> <td data-bbox="1066 509 1276 620">Mechanical Engineering</td> <td data-bbox="1276 509 1394 620">8</td> <td data-bbox="1394 509 1610 620">Welding and Fabrication Work</td> <td data-bbox="1610 509 1709 620">1</td> <td data-bbox="1709 509 1923 620">Welding of Structures at Site</td> </tr> <tr> <td colspan="6" data-bbox="785 620 1923 657">OR</td> </tr> <tr> <td data-bbox="785 657 1066 768">Existing TOT certified Trainer in Skill Qualification</td> <td data-bbox="1066 657 1276 768">Construction Welder / Fabricator</td> <td data-bbox="1276 657 1394 768">2</td> <td data-bbox="1394 657 1610 768">Welding and Fabrication Work</td> <td data-bbox="1610 657 1709 768">5</td> <td data-bbox="1709 657 1923 768">Welding of Structures at Site</td> </tr> </table>	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Preferable Training Experience		Years	Specialization	Years	Specialization	B.E. / B.Tech	Mechanical Engineering	6	Welding and Fabrication Work	1	Welding of Structures at Site	OR						Diploma	Mechanical Engineering	8	Welding and Fabrication Work	1	Welding of Structures at Site	OR						Existing TOT certified Trainer in Skill Qualification	Construction Welder / Fabricator	2	Welding and Fabrication Work	5	Welding of Structures at Site
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Existing TOT certified Trainer in Skill Qualification	Construction Welder / Fabricator	2	Welding and Fabrication Work	5	Welding of Structures at Site																																					
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)																																								
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA																																								

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	<table border="1"> <tr> <th data-bbox="785 289 1073 402" rowspan="2">Minimum Educational Qualification</th> <th data-bbox="1073 289 1444 402" rowspan="2">Specialization</th> <th colspan="2" data-bbox="1444 289 1562 402">Relevant Industry Experience</th> </tr> <tr> <th data-bbox="1444 337 1562 402">Years</th> <th data-bbox="1562 337 1940 402">Specialization</th> </tr> <tr> <td data-bbox="785 402 1073 440">B.E. / B.Tech</td> <td data-bbox="1073 402 1444 440">Mechanical Engineering</td> <td data-bbox="1444 402 1562 440">2</td> <td data-bbox="1562 402 1940 440">Welding of Structures at Site</td> </tr> <tr> <td colspan="4" data-bbox="785 440 1940 477">OR</td> </tr> <tr> <td data-bbox="785 477 1073 514">Diploma</td> <td data-bbox="1073 477 1444 514">Mechanical Engineering</td> <td data-bbox="1444 477 1562 514">5</td> <td data-bbox="1562 477 1940 514">Welding of Structures at Site</td> </tr> <tr> <td colspan="4" data-bbox="785 514 1940 552">OR</td> </tr> <tr> <td data-bbox="785 552 1073 589">ITI</td> <td data-bbox="1073 552 1444 589">"Welder Trade"</td> <td data-bbox="1444 552 1562 589">7</td> <td data-bbox="1562 552 1940 589">Welding of Structures at Site</td> </tr> </table>	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Years	Specialization	B.E. / B.Tech	Mechanical Engineering	2	Welding of Structures at Site	OR				Diploma	Mechanical Engineering	5	Welding of Structures at Site	OR				ITI	"Welder Trade"	7	Welding of Structures at Site
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ITI	"Welder Trade"	7	Welding of Structures at Site																									
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	<table border="1"> <tr> <th data-bbox="785 626 1073 708" rowspan="2">Minimum Educational Qualification</th> <th data-bbox="1073 626 1444 708" rowspan="2">Specialization</th> <th colspan="2" data-bbox="1444 626 1562 708">Relevant Technical Experience</th> </tr> <tr> <th data-bbox="1444 675 1562 708">Years</th> <th data-bbox="1562 675 1940 708">Specialization</th> </tr> <tr> <td data-bbox="785 708 1073 745">Graduation</td> <td data-bbox="1073 708 1444 745">In Relevant Stream</td> <td data-bbox="1444 708 1562 745">1</td> <td data-bbox="1562 708 1940 745">-</td> </tr> <tr> <td colspan="4" data-bbox="785 745 1940 782">OR</td> </tr> <tr> <td data-bbox="785 782 1073 820">Diploma</td> <td data-bbox="1073 782 1444 820">In Relevant Stream</td> <td data-bbox="1444 782 1562 820">2</td> <td data-bbox="1562 782 1940 820">-</td> </tr> </table>	Minimum Educational Qualification	Specialization	Relevant Technical Experience		Years	Specialization	Graduation	In Relevant Stream	1	-	OR				Diploma	In Relevant Stream	2	-								
Minimum Educational Qualification	Specialization	Relevant Technical Experience																										
		Years	Specialization																									
Graduation	In Relevant Stream	1	-																									
OR																												
Diploma	In Relevant Stream	2	-																									
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	<table border="1"> <tr> <th data-bbox="785 898 1073 979" rowspan="2">Minimum Educational Qualification</th> <th data-bbox="1073 898 1444 979" rowspan="2">Specialization</th> <th colspan="2" data-bbox="1444 898 1562 979">Relevant Industry Experience</th> </tr> <tr> <th data-bbox="1444 946 1562 979">Years</th> <th data-bbox="1562 946 1940 979">Specialization</th> </tr> <tr> <td data-bbox="785 979 1073 1016">B.E. / B.Tech</td> <td data-bbox="1073 979 1444 1016">Mechanical Engineering</td> <td data-bbox="1444 979 1562 1016">10</td> <td data-bbox="1562 979 1940 1016">Welding of Structures at Site</td> </tr> <tr> <td colspan="4" data-bbox="785 1016 1940 1053">OR</td> </tr> <tr> <td data-bbox="785 1053 1073 1091">Diploma</td> <td data-bbox="1073 1053 1444 1091">Mechanical Engineering</td> <td data-bbox="1444 1053 1562 1091">13</td> <td data-bbox="1562 1053 1940 1091">Welding of Structures at Site</td> </tr> </table>	Minimum Educational Qualification	Specialization	Relevant Industry Experience		Years	Specialization	B.E. / B.Tech	Mechanical Engineering	10	Welding of Structures at Site	OR				Diploma	Mechanical Engineering	13	Welding of Structures at Site								
Minimum Educational Qualification	Specialization	Relevant Industry Experience																										
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B.E. / B.Tech	Mechanical Engineering	10	Welding of Structures at Site																									
OR																												
Diploma	Mechanical Engineering	13	Welding of Structures at Site																									
4.	Assessment Mode (Specify the assessment mode)	Offline																										
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)																										

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Yes
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validation provided: 27
5.	Estimated nos. of persons to be trained and employed: 2,000 & 1,400
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: (If “No”, why): No, Last Communication was on 09/04/2025

Section 6: Annexure & Supporting Documents Checklist

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>	Yes
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Yes
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Yes
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Yes
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is “Blended Learning”)</i>	No
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	No
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	Yes
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Yes
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Yes
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	Yes
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	Yes
12.	Any other document you wish to submit:	No

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional / Theoretical Knowledge/Process	Construction Welder is expected to perform MIG welding as per the Welding Procedure Specification (WPS), which includes the necessary details required to obtain the desired weld. A MIG welder also perform the following tasks: • Prepare welding equipment for welding • Prepare base metal for welding • Perform MIG / TIG / SMAW welding in 1G, 1F, 2G, 2F, 3G, 3F • Perform Visual Inspections on the weld • Perform grinding works for finishing and repairing the weld	As detailed out, the entire process followed by Construction Welder- MIG results in completion of weld for one joint, they therefore perform a familiar and routine work for completing the welding of an entire component. As the work is routine and is repeated multiple times, the work becomes predictable As the construction fitter is required to perform the task as per drawings and specifications (WPS) and due to availability of method statements for each process, they have a clear work situations.	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	Construction Welder is expected to have factual knowledge to • Read and interpret fabrication drawings and symbols • Set up and assemble the MIG / TIG / SMAW welding equipment correctly • correctly set the welding parameters on the MIG / TIG / SMAW welding equipment • understand the relation between various parameters of welding and their effect on final weld	The knowledge required for Construction Welder is factual as it is specific and limited to the requirements of performing welding and grinding operations. Further, as the welder does not understand the process and need for other activities involved in the process of fabrication, their knowledge is applicable to their field of work only	4

	- understand the preparation of base metal & its importance - identify various types of defects in welding - different type of consumables required for MIG/TIG/SMAW welding - understand various safety protocols and parameters applicable at site.		
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	- preparatory works for conducting welding - Preparation of base metal for welding - MIG/TIG/SMAW welding in 1G, 1F, 2G, 2F, 3G, 3F positions - Visual Inspections on the weld - grinding works for finishing and repairing the welding	As indicated the skill set required to perform as a Construction Welder is only applicable for MIG / TIG / SMAW. The skill set required to perform as a Construction Welder is applicable for only a very narrow range of works as the limited to the repetitive work of fit-up and routine corrections. The construction welder also demonstrates the skills to use appropriate tools for measurement, placing and fixing steel sections etc. while performing fit-up Further, they are also expected to recall and demonstrate skill for visual and dimensional checking of prepared sections, thereby demonstrating orientation to quality	4
Broad Learning Outcomes/Core Skill	The job holder must be able to	As the outcomes require the job role to perform basic arithmetic calculations, read drawings and instructions and communicate work done to seniors.	4

	• read fabrication drawings and welding procedure specifications to interpret required details of welding, • interpret work instructions and other communications and pass on the same to co-workers. • Read and understand the safety parameters and instruct subordinates to perform work safely	This job role is demonstrating core skill required for NSQF level 4	
Responsibility	The job holders is responsible for • completing the assigned task correctly and within specified time • conducting simple checks visually for defects in welds at their own level and • communicate any discrepancies in the completed sections to their seniors. • offering the completed work for quality inspections to trade seniors to carry out any repair works	The job holder is responsible for ensuring the completion of own work in expected time and with required quality.	4

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30 Candidates

S. No.	Tool / Equipment Name	Unit	Quantity for Specified Batch Size
1.	Portable/ Hand/ Angle grinder	Number	30
2.	Measuring Tape – 5m	Number	30
3.	Hammer	Number	30
4.	Tweezers	Number	30
5.	Clamps	Number	30
6.	Vice	Number	15
7.	Spark lighter	Number	30
8.	Welding Transformer with all accessories	Number	3
9.	Inverter based welding machine with all accessories	Number	3
10.	D.C Arc welding rectifiers set with all accessories	Number	3
11.	AC/DC SMAW and GTAW welding machine with water- or air-cooled torch and standard accessories	Number	3
12.	Argon Regulator	Number	3
13.	Gas hose	Number	30
14.	Water Circulating System	Number	3

15.	Trolley for cylinder	Number	3
16.	Electrode holders	Number	30
17.	Gas regulators	Number	30
18.	Flashback arrestors	Number	30
19.	Chipping hammer	Number	30
20.	Chisel	Number	30
21.	Wire brush	Number	30
22.	Hand and Leg guards' leather	Number	30
23.	Cleaning Solutions	Number	30
24.	Ventilation/ exhaust fan	Number	30
25.	Jigs and fixtures	Number	30
26.	Anchors	Number	30
27.	Ball Peen Hammer	Number	30
28.	Needle Nose Pliers	Number	30
29.	Lineman's Plier	Number	30
30.	Combination Square	Number	30
31.	Flat Cross-Cut Bastard File	Number	30
32.	Round Cross-Cut Bastard File	Number	30

33.	Scribe	Number	30
34.	Soap Stone	Number	30
35.	GMAW welding machine inclusive of regulators	Number	30
36.	Welding Gun	Number	30
37.	Filler wire spool	Number	30
38.	Wire feeding machine	Number	30
39.	Arc welding cables	Number	30
40.	Universal Weld measuring gauge	Number	30
41.	Temp stick	Number	30
42.	Shielding Gas	Number	30
43.	Shielding gas trolley with chains	Number	30
44.	Tungsten Electrode	Number	30
45.	Soap Stone	Number	30
46.	Welding glass	Number	30
47.	shielding gas trolley with chains	Number	30
48.	Welding helmet	Number	30
49.	Safety Helmet	Number	30
50.	Safety Shoes	Pair	30

51.	Safety Belt/Harness	Number	30
52.	Leather Hand Gloves	Number	30
53.	Safety Goggles	Number	30
54.	Nose Mask	Number	30
55.	Reflective Jackets	Number	30
56.	Jump suit	Number	30
57.	Fire Extinguishers	Number	3
58.	Sand Buckets	Number	5
59.	Fire Prevention Kit	Number	2
60.	First Aid Box	Number	2
61.	Safety Tags	Number	5

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Training Kit (Trainer Guide, Presentations)
2. Whiteboard/ Blackboard
3. Marker
4. Projector
5. Working Model

Annexure: Industry Validations Summary

Provide the summary information of all the industry validations in the table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Larsen and Toubro Ltd	J Raguraman	Head, CSTD	PB No 979, Mount Poonamallee Road, Manapakkam, Chennai, 600089	9943247482	jraguraman@Intecc.com	
2	National Academy of Construction	M Indra Kiran	Director	Near SS Convention Center, Labbipet, Vijayawada, Andhra Pradesh, PIN: 520010	984947 0249	nacaptrainings@gmail.com	
3	Indian Institute of Infrastructure and Construction	Prof. (Dr.) B. Sunil Kumar	Director, IIIC	Near Chavara Bridge, AMC, Puthanthura Post, Neendakara - 69L582, Kollam. Kerala	9895013924	director@iiic.ac.in	
4	JK Cement Ltd	Ashish Singh	General Manager	Kamla Tower, Kanpur Nagar, UP, 208001	9468837057	ashish.singh1@jkcement.com	
5	Kamac Engineers Pvt Ltd	Yudhajit Saha	Manager – Contracts & Planning	Ramkrishna Samity Building, Panitanki More, 40/107, Sevoke Rd, Ward 11, Near Pani Tanki More (Clock Tower), Siliguri, West Bengal 734001	8240040261	planning@kamac.in	

6	One Naga Construction Private Limited	Tunito Alex Zhimomi	CEO	DR.N. Theuno; Bayavu; Near N.B.S Office Area; Kohima; Kohima; Nagaland; 797001; India	7005715093	alexzim881@gmail.com	
7	OP Jindal Community College	Om Prakash Verma	Principal	O P Jindal Industrial Park, Tumidih, Chhattisgarh 496107		omprakash.verma@opjc craigarh.edu.in	
8	Poddar Infratech Pvt Ltd	Ms. Neha Devgan	Contracts Manager	202, Crowne Heights, Sector 10 , Rohini , New Delhi	8449521881	letters@poddarinfra.com	
9	Santi Nath Basak	Sandip Mandal	Sr. Project Engineer	Bankadaha, Bankura, West Bengal-722164	6295834148	smandal014@gmail.com	
10	Solidstone Constructions	Pragadeeshwaran R J	Principal Designer & Chief Execution (Civil)	7/2 Perumal Nagar, No4 Veerapandi, CBE – 19	7904788630	solidstone.projects@gmail.com	linkedin.com/in/pragadeeshwaran-r-j-6baab7193
11	Star Projects Services Pvt Ltd	H. Asgar	9811376288	K-108 A, First Floor, Above JD Saloon, Thokar No. 5, Abul Fazal Enclave Part –I, Jamia Nagar, Okhla, N. Delhi 25	9811376288	starprojectsservices@gmail.com	
12	Uralungal Labour Contract Co-operative Society	Prem Anand C	Deputy Manager, Learning & Development	Madappally College, Vadakara, 673102 Kozhikode - 673102. Kerala, India	8921763984	prem.anand@ulccs.com	

13	AK Consulting	Nirman Jain	Technical Head	6th Cross Rd, 1st Stage, Kadugondanahalli, Bengaluru, Karnataka 560045	7042447336	nirmanjain777@gmail.com	
14	Artificial Intelligence Technologies Ltd	Rohit Kumar Sharma	Sr. Developer	A-21 Kailash Colony, New Delhi – 110048	9927564461	rohit.sharma@aitunivers al.com	
15	Asirbadh Projects and Infrastructure Limited	Kunwar Jee	GM (Projects)	A.G. Office Road, Doanda, Ranchi-834002, Jharkhand.	7858801901	ahplmd@yahoo.com	
16	Donge Project Management Consultants Pvt. Ltd.	Balkrishna Kulkarni	President	401, Imperial Heights, Akshar Chowk, OP Road, Vadodara	9819657656	balkrishna.kulkarni@don grepmc.com	
17	Ephicacy Lifescience Analytics	Rahul Kumar Kaushik	Sr. Manager	2nd Main Rd, Sarvobhogam Nagar, Arekere, Bengaluru, Karnataka 560076	8859885973	rahul.Kaushik@ephicacy .com	
18	Freelance Architect (Individual Consultant)	Garvit Sharma	Architect	A-101 Radha Krishna Lane, Kaushambi, Ghaziabad, U.P	9971967901	grsharma97@gmail.com	
19	Institute of Management Technology	Sandeep Sharma	Chief Project Engineer & Senior Counsellor	Raj Nagar, Ghaziabad, UP, 201001	9810566031	sharma.sandyk@gmail.c om	
20	Know How Schools	Dipesh Bafna	Partner	Know How Schools LLP, C 601, Royal Casa, Ravet, Pune, 412101	9405266123	learn@knowhowschools .com	

21	L& T Skill Trainers Academy	DK Sharma	Principal - CSTI	Larsen & Toubro Ltd. Near Custom House, Versova Creek Madh Jetty, Madh, Mumbai, 400061	7660986699	deepaks@Intecc.com	
22	LK Engicons	Sameer	Owner	114, Bhawanpur, Meerut, UP, 250001	9808170639	sales@lkengicons.com	
23	Manpower Group Services India	Durgesh Begariya	Head Branch Operations	Unit-4 A/1 and A/2, 4th Floor, Plot No. 6, Uppal Plaza, Jasola, New Delhi	9824054165	durgesh.b@manpower.co.in	
24	Senryaku Management Private Limited	Udit Kumar	Consultant	UTC031, DLF The Ultima, Sector 81, Gurugram, HR 122004	9690909024	udit.kau@gmail.com	
25	Shrikant Gajanan Mhatre -Consulting Engineer & Valuer	Shrikant Gajanan Mhatre	Consulting Engineer & Valuer	Reg. No. CCRDP / R / 2022 / APL/ 00305 Approved Valuer No. -LM / CAT - I/ F - 4860, C P No. -180. SHIV NIWAS / Sagar Society, Private High School Road I Pen -Raigad -Maharashtra - India . 402 107.	9689728209	sshri1000@gmail.com	
26	Sunbright Manpower Solutions Pvt. Ltd	Arun Kumar	Supervisor	Shop No. 3144, Main Road, Narasapura, Kolar Taluk, Bangalore, Karnataka, 563133	7338463588	bangalore@sunbrightgroup.com	
27	ATS Homekraft	Bhumit Kamboj	General Manager, Program	ATS HomeKraft, 4th Floor, ATS Tower, Plot no-16, Sector-135, Noida-201305	9873951040	bhumit.kamboj@homekraft.in	

Annexure: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2025-26	500	350	225	168	0	0
2026-27	700	490	300	225	0	0
2027-28	800	560	375	281	0	0

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Trained	Assessed	Certified	Trained	Assessed	Trained	Assessed
V 2.0	2022-23	0	0	0	0	0	0	0	0	0	0	0	0
V 2.0	2023-24	0	0	0	0	0	0	0	0	0	0	0	0
V 2.0	2024-25	0	0	0	0	0	0	0	0	0	0	0	0

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented: NA

Content availability for previous versions of qualifications:

☒ Participant Handbook ☒ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available: English

Annexure: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out grinding activities on structural steel elements	<i>Carry out preparatory works for grinding structural steel sections, plates, tubes and pipes</i>	15	35		
	PC1. ensure that the grinder is in proper working condition				
	PC2. check that guard is installed on the machine and is secure and effective				
	PC3. check and notify any inadequacy like incorrect type of grinder, incorrect consumable issued etc. in the grinding tool to appropriate authority				
	PC4. check the accessibility (in between joints, large distance from power source etc.) of the grinder for the work				
	PC5. identify the location of surface to be grinded				
	PC6. clean the metal surface to remove any foreign matter like dust, rust, paint, oil etc				
	PC7. clamp and fix the metal before grinding				

	PC8. select appropriate consumables as per work requirement				
	PC9. select and use appropriate grinding wheel as per work requirement				
	<i>Grind the structural steel sections, plates, tubes and pipes to required dimensions as per instructions</i>	15	35		
	PC10. gather and identify information from superiors regarding the dimensions of grinding, angle of grinding etc				
	PC11. select proper body position so that hand movements are comfortable and smooth				
	PC12. move the grinding tool in desired patterns as per work requirements				
	PC13. provide proper pressure at correct angle as per work requirement to minimize the waste age of consumables				
	PC14. grind off defective weld joints to required depth joints				
	PC15. grind off excessive root reinforcements in welded joint if required				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Work effectively in a team to deliver desired results at the workplace	<i>Interact and communicate in an effective manner</i>	18	42		
	PC1. pass on work related information/ requirement clearly to the team members				
	PC2. inform co-workers and superiors about any kind of deviations from work				
	PC3. report any unresolved problem to the supervisor immediately				
	PC4. obtain instructions from superiors and respond on the same				
	PC5. communicate to team members/subordinates for appropriate work technique and method				
	PC6. seek clarification and advice as per the requirement				
	<i>Support co-workers to execute the project requirements</i>	6	14		
	PC7. hand over the required material, tools, tackles, equipment and work fronts timely to interfacing teams				
	PC8. work together with co-workers in a synchronized manner				
	<i>Practice inclusion</i>	6	14		
	PC9. maintain cultural inclusivity at workplace				
	PC10. maintain disability friendly work practices				

	PC11. follow gender neutral practices at workplace				
	PC12. address discriminatory and offensive behaviour in a professional manner as per organizational policy				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Work according to personal health, safety and environment protocols at construction site	<i>Follow safety norms as defined by the organization</i>	6	14		
	PC1. identify and report any hazards, risks or breaches in site safety to the appropriate authority				
	PC2. follow emergency and evacuation procedures in case of accidents, fires, natural calamities				
	PC3. follow recommended safe practices in handling construction materials, including chemical and hazardous material whenever applicable				
	PC4. follow all the protocols and safety techniques conveyed during safety awareness programs like Tool Box Talks, safety demonstrations and mock drills conducted at the site				

	PC5. select and operate different types of fire extinguishers corresponding to various types of fires as per EHS guideline	15	35		
	PC6. identify near miss, unsafe condition and unsafe act				
	<i>Adopt healthy & safe work practices</i>				
	PC7. use 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)				
	PC8. handle all required tools, tackles, materials and equipment safely				
	PC9. follow safe disposal of waste, harmful and hazardous materials as per EHS guidelines				
	PC10. check and install all safety equipment as per standard guidelines				
	PC11. follow safety protocols and practices as laid down by site EHS department				
	PC12. obtain "height pass" clearance for working at heights				

	<i>Implement good housekeeping practices</i>	6	14		
	PC13. collect, segregate and deposit construction waste into appropriate containers based on their toxicity or hazardous nature				
	PC14. apply ergonomic principles wherever required				
	<i>Follow infection control guidelines as per applicability</i>	3	7		
	PC15. follow recommended personal hygiene, workplace hygiene and sanitization practices				
	PC16. clean and disinfect all materials, tools and supplies before and after use				
	PC17. report immediately to concerned authorities regarding signs and symptoms of illness of self and others				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Employability Skills (30 Hours)	<i>Introduction to Employability Skills</i>	1	1		
	PC1. understand the significance of employability skills in meeting the job requirements				
	<i>Constitutional values – Citizenship</i>	1	1		
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices				
	<i>Becoming a Professional in the 21st Century</i>	1	3		
	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.				
	<i>Basic English Skills</i>	2	3		
	PC4. speak with others using some basic English phrases or sentences				
	<i>Communication Skills</i>	1	1		
	PC5. follow good manners while communicating with others				
	PC6. work with others in a team				

	<i>Diversity & Inclusion</i>	1	1		
	PC7. communicate and behave appropriately with all genders and PwD				
	PC8. report any issues related to sexual harassment				
	<i>Financial and Legal Literacy</i>	3	4		
	PC9. use various financial products and services safely and securely				
	PC10. calculate income, expenses, savings etc.				
	PC11. approach the concerned authorities for any exploitation as per legal rights and laws				
	<i>Essential Digital Skills</i>	4	6		
	PC12. operate digital devices and use its features and applications securely and safely				
	PC13. use internet and social media platforms securely and safely				
	<i>Entrepreneurship</i>	3	5		
	PC14. identify and assess opportunities for potential business				
	PC15. identify sources for arranging money and associated financial and legal challenges				

	<i>Customer Service</i>	2	2		
	PC16. identify different types of customers				
	PC17. identify customer needs and address them appropriately				
	PC18. follow appropriate hygiene and grooming standards				
	<i>Getting ready for apprenticeship & Jobs</i>	1	3		
	PC19. create a basic biodata				
	PC20. search for suitable jobs and apply				
	PC21. identify and register apprenticeship opportunities as per requirement				
NOS Total		20	30	-	-

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out preparatory works for MIG welding operations	<i>preparatory works for MIG welding operations</i>	15	35		
	PC1. use appropriate PPEs catering to welding works				
	PC2. inspect and clear the work area of any flammable objects like boxes, plastic etc.				
	PC3. inspect electric connections for adequate tightness and secure them prior to commencing the work				
	PC4. ensure that work clamps are adequately secured and are in correct polarity (negative on welding bed and positive on electrode)				
	PC5. ensure that contact tip, tip holder, diffuser, and nozzle are in order				
	PC6. make initial adjustments of electrode consumption rate and voltage as per requirement				
	PC7. ensure that proper lighting and ventilation arrangement is available at workplace				
	PC8. ensure that the gas cylinders are in upright positions				

	PC9. inspect and adjust the gas valves ensuring there is no leakage				
	PC10. ensure that electrodes are compatible with base metal and weld requirements.				
	<i>Prepare base metal of thickness 1 mm and above</i>	15	35		
	PC11. clean the surface to be welded and ensure it is free from irregularities, oxides, dust/foreign particles, paints, etc. and is not galvanized				
	PC12. check that adequate root gap is available				
	PC13. check the bevel angle visually				
	PC14. ensure that the element is properly anchored to restrict distortion				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out MIG welding as per requirement in fabrication workshop or construction site	<i>Carry out welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1 mm and above</i>	15	35		
	PC1. interpret weld requirements like position of weld, type of joint, number of passes required, etc., from fabrication drawings/specification				
	PC2. estimate the number or length of filler material required to complete the weld				
	PC3. pre heat the base material before welding if required				
	PC4. maintain correct body posture as per requirement of weld				
	PC5. adjust the wire stick out and regulate the gas flow rate accordingly				
	PC6. . use appropriate patterns of welding as per position and type of joints				
	PC7. hold the welding gun at proper angle as per requirement				
	PC8. make required number of steady passes of weld to ensure proper heat generation and penetration				

	PC9. make adjustments in welding machine if required				
	PC10. disconnect the equipment correctly and store the same as per manufacture guidelines and site safety parameters				
	PC11. clean the welded joint				
	<i>Carry out visual inspection during and post welding</i>	15	35		
	PC12. ensure proper penetration of weld				
	PC13. ensure that the weld is properly shielded by shielding gas				
	PC14. ensure proper heat input through arc				
	PC15. ensure the spatter spray is reduced during the welding				
	PC16. check the root pass for cracks				
	PC17. check visually for spatters, craters, undercuts				
	PC18. check the welded joint visually for cracks				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out preparatory works for TIG welding operations	<i>Carry out preparatory works for TIG welding</i>	15	35		
	PC1. identify the joints to be welded, their location and position of welding				
	PC2. interpret the weld specifications like the type of joint, throat for fillet, number of passes required, specifications of filler rod, required heat input, preheat temperature etc. form relevant charts and drawings				
	PC3. use appropriate PPEs catering to welding works				
	PC4. inspect and clear the work area of any flammable objects like boxes, plastic, etc.				
	PC5. ensure that proper lighting and ventilation arrangement is available at the workplace				
	PC6. keep the shielding gas cylinders in an upright position only				
	PC7. inspect and adjust the gas valves ensuring there is no leakage				
	PC8. ensure that shielding gas is purely inert e. g Argon				
	PC9. check the pipes, valves/ regulator, and flow meter is securely connected				
	PC10. taper the tungsten rod and sharpen the point of the electrode for better arc stability				

	PC11. adjust the tungsten stick out as per requirement based upon type of joint, base metal properties etc				
	PC12. estimate the number or length of filler material/electrodes required and stack them per instructions				
	PC13. clean the filler rod to remove any foreign particles in order to avoid weld contamination				
	PC14. ensure that filler material is compatible with base metal and as per weld specifications				
	PC 15. ensure that work clamps are adequately secured and in correct polarity (positive on welding bed and negative on electrode)				
	PC16. ensure that electrical connections are tight, secure, and compatible with the equipment				
	<i>Prepare base metal of thickness 1 mm and above</i>	15	35		
	PC17. clean the surface to be welded and ensure it is free from irregularities, oxides, dust/foreign particles, paints etc. and is not galvanized				
	PC18. check that adequate root gap is available				
	PC19. check the bevel angle visually				
	PC20. ensure that the joint is properly secured against any movement				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out tungsten inert gas welding as per requirement in fabrication workshop or construction site	<i>Carry out welding operation in 1G, 1F, 2G, 2F, 3G,3F positions for structural elements of thickness 1 mm and above</i>	15	35		
	PC1. ignite the arc by superimposing the high frequency over high voltage				
	PC2. ensure that the tungsten rod doesn't touch the base metal				
	PC3. ensure that the filler rod is always inside the shielding gas cover to avoid contamination during welding operation				
	PC4. follow ergonomic principles for smooth welding works				
	PC5. position head such that weld is clearly visible				
	PC6. ensure that weld location is properly illuminated and ventilated				
	PC7. use appropriate patterns of welding as per position and type of joints				
	PC8. hold the welding gun at proper angle as per requirement (70-80 from base plate)				
	PC9. ensure that the arc length is not too large and is as per heat requirement				

	PC10. adjust the travel speed of weld to ensure proper penetration				
	PC11. make required number of steady passes of weld to ensure proper heat generation and penetration				
	PC12. make required adjustments in welding machine				
	PC13. disconnect the equipment correctly and store the same as per manufacture guidelines and site safety parameters				
	PC14. clean the welded joint				
	<i>Carry out visual inspection during and post welding</i>	15	35		
	PC15. ensure proper penetration of weld				
	PC16. ensure that the weld is properly shielded by shielding gas				
	PC17. ensure proper heat input through arc				
	PC18. ensure that the spatter spray is reduced during the welding				
	PC19. check the root pass for cracks				
	PC20. check visually for spatters, craters, undercuts				
	PC21. check the welded joint visually for cracks				
NOS Total		30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out preparatory work for shielded metal arc welding operations	<i>Conduct preparatory works for setting up the welding kit and prepare the base metal of thickness 1 mm and above</i>	30	70		
	PC1. use appropriate PPEs catering to welding works				
	PC2. inspect and clear the work area of any flammable objects like boxes, plastic, etc.				
	PC3. ensure that proper lighting and ventilation arrangement is available at the workplace				
	PC4. inspect electric connections to be adequately tight and secure prior to commencing the work				
	PC5. ensure that electrodes are compatible with base metal and weld requirements				
	PC6. ensure that work clamps are adequately secured and are in correct polarity (negative on welding bed and positive on electrode)				
	PC7. clean the surface to be welded (base metal) and ensure it is free from irregularities, oxides, dust/foreign particles, paints etc. and is not				

	galvanized				
	PC8. check that adequate root gap is available				
	PC9. check the bevel angle visually				
	PC10. attach the work clamps to the base metal				
	PC11. extract the weld specifications like type of joint, throat for fillet, number of passes required, specifications of filler rod, required heat input, preheat temperature, type of welding process, type of weld required consumables, required welding process parameters, base metal, joint design, type of edge preparation welding position, backing, preheat temp, post weld heat treatment, welding techniques etc. form relevant charts and drawings				
	PC12. estimate the quantity of filler material required to complete the weld				
	PC13. identify the joints to be welded, their location and position of welding				
	PC14. ensure that the joint is properly secured against any movement				
	PC15. ensure that the temperature at joint is as per specifications				
	NOS Total	30	70		

NOS/Module Name	Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Carry out shielded metal arc welding as per requirement in fabrication workshop or construction site	<i>Carry out shielded metal arc welding operation in 1G, 1F, 2G, 2F, 3G, 3F positions for structural elements of thickness 1mm and above</i>	15	35		
	PC1. ignite the arc by striking the electrode on the base metal like a match				
	PC2. maintain correct body posture as per requirement of weld				
	PC3. position head such that weld is clearly visible				
	PC4. ensure that weld location is properly illuminated and ventilated				
	PC5. use appropriate patterns of welding as per position and type of joints				
	PC6. push or drag the arc as per requirement				
	PC7. ensure that the arc length is not too large and is as per heat requirement				
	PC8. adjust the travel speed of weld to ensure proper penetration				

	PC9. make required number of steady passes of weld to ensure proper heat generation and penetration				
	PC10. clean the weld after each pass to scrap out the slag formed on the surface of weld				
	PC11. make required adjustments in welding machine				
	PC12. disconnect the equipment correctly and store the same as per manufacturer's guidelines and site safety parameters				
	PC13. dispose of the stubs of electrode left after completing the welding appropriately				
	PC14. clean the welded joint by removing slag formed during the welding process				
	<i>Carry out visual inspection during and post welding</i>				
	PC15. ensure proper penetration of weld				
	PC16. ensure that the weld is properly shielded throughout the operation				
	PC17. ensure proper heat input through arc				

	PC18. ensure that the spatter spray is reduced during the welding				
	PC19. check the root pass for cracks, porosity, slag inclusion, incomplete penetration, root concavity, incomplete fusion, undercut etc.				
	PC20. check visually for spatters, craters, undercuts				
	PC21. check the welded joint visually for cracks				
NOS Total		30	70		

Annexure: 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:

Assessment is done through CSDCI affiliated Assessment Agencies. Assessors are trained & certified by CSDCI after Training Of Assessor (TOA) program. Assessments is conducted to gauge and assess the trainee's skill and knowledge competency in the specified areas. The assessment will have both theory and practical components in 30:70 ratio for **Construction Welder** job role.

During the practical task, trainees are assessed on their workmanship, quality of finished product and time management. They will be graded for all their assessments based on the approved assessment strategy which is signed off by CSDCI. The Assessor submits an assessment plan to CSDCI prior to assessments.

The assessment plan contains the following information:

- What will be assessed, i.e. the competency based on each NOS based on theory and practical questions
- How assessment will occur i.e. methods of assessment
- When the assessment will occur
- Duration of assessment
- Where the assessment will take place i.e. context of the assessment (workplace/simulation)
- The criteria for decision making i.e. those aspects that will guide judgments
- Where appropriate, any supplementary criteria used to make a judgment on the level of performance.

2. Testing Environment:

- Training partner shares the batch start date and end date, number of trainees and the job role.
- Assessment will be fixed for a day after the end date of training. It could be next day or later. Assessment will be conducted at the training venue/test center.
- The knowledge/theory assessments is conducted with proper seating arrangements with enough space between the candidates to prevent mal-practicing.
- Question set for theory and practical will be distributed to each candidate by the Assessor. Theory testing will include multiple choice questions, pictorial question, etc. which will test the trainee on his theoretical knowledge of the subject. The skill /practical assessments will be conducted in the approved test centers. The training provider will ensure adequate tools and materials are available to conduct the practical test.
- If number of candidates are more than 30, more assessors will be organized on same day to complete the assessment.
- The assessment has to comprise of two components, namely:

- Knowledge assessment (theory/viva assessment)
- Skill assessment (practical/hands-on skill assessment)

3. Mode of assessment:

- Demonstration/Practical for Performance /Skill Assessment
- Synoptic multiple-choice question test
- Viva for Knowledge Assessment

4. Performance/skill assessment:

- The performance/skill assessment will be conducted through demonstration/practical
- For the practical test trainees are assessed through a given task, which they have to complete correctly for them to be marked as passed.
- The assessment is conducted in a simulated working environment. Due to this fact, the assessors must note that the naturally occurring evidence of competence is unavailable or infrequent. Simulation must be undertaken in a Realistic Working Environment which provides an environment that replicates the key characteristics of the workplace in which the skill to be assessed is normally employed.

5. Knowledge Assessment:

- The knowledge assessments are conducted through written test/ viva.
- Synoptic test is used for this. It is an MCQ (Multiple Choice Question) test which are prepared externally and externally marked, meaning by agency having no link with training partners. The test may be conducted by the assessor in the oral mode, if required, considering the lack of reading and comprehending acumen (skills) of trainees. In such cases, the assessor will mention it on top of the MCQ submitted to CSDCI.
- The assessment strategy, weightage and duration of assessment for **Construction Welder** is summarized below

Assessment Type	Formative or Summative	Strategies	Weightage	Duration (hours)
Knowledge	Summative	MCQ/Viva	30	1.5
skill	Summative	Structured Practical Task	70	5.5

6. Assessment Quality Assurance framework:

- CSDCI has developed assessment criteria framework for each Qualification pack as per National Occupational Standards. The criteria framework includes weightages/marks for each criterion under knowledge and skill. The criteria ensure quality assurance as it ensures valid, consistent and fair assessments at all locations. Issued to the affiliated Assessment body. The Assessment body develop questions based on CSDCI issued assessment criteria.
- Evidences in the form of answer sheets in case of knowledge assessments are collected. For skill assessments videos and photographs are prepared as evidence. These are submitted by the assessor to the assessment agency. CSDCI does random checks of the same with the participant/ trainee's ID and ascertains authenticity and validity of assessments.

- The training partner will intimate the time of arrival of the assessor and time of leaving the venue. Random spot checks/audit is conducted by CSDCI to monitor assessment.

7. Methods of Validation:

- Unless the trainee is registered, the person cannot undergo assessment. To further ensure that the person registered is the person appearing for assessment, ID verification is carried out. Aadhar card number is part of registering the candidate for training. This forms the basis of further verification during the assessment.
- Assessor conducts the assessment through theory and practical questions developed in accordance with the assessment criteria and guidelines issued by CSDCI. This too is verified by random audits carried out by CSDCI.
- Evidences for assessments are to be collected and submitted to CSDCI for verification as per demand.
- Assessment agency is responsible to put details in SIP. CSDCI will also validate the data and result received from the assessment agency.

8. Method of assessment documentation and access:

- The assessment agency will upload the result of assessment in the portal. The data will not be accessible for change by the assessment agency after the upload. The assessment data will be validated by CSDCI assessment team. After upload, only CSDCI can access this data.
- CSDCI approves the results within five days after which results are uploaded on SIDH by Assessment Agency.

9. On the Job:

- On job training (OJT), candidates undergo training and learning 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.

Annexure: Acronym and Glossary

Acronym

Acronym	Description
MSDE	Ministry of Skill Development and Entrepreneurship
NCVET	National Council for Vocational Education and Training
NSDC	National Skill Development Corporation
CSDCI	Constriction Skill Development Council of India
SIDH	Skill India Digital Hub
AB	Awarding Body
SSC	Sector Skill Council
PMKVY	Pradhan Mantri Kaushal Vikas Yojana
DDU-GKY	Deen Dayal Upadhyaya Grameen Kaushalya Yojana
SANKALP	Skill Acquisition and Knowledge Awareness for Livelihood Promotion
STRIVE	Skills Strengthening for Industrial Value Enhancement
JSS	Jan Shikshan Sansthan
STT	Short Term Training
RPL	Recognition of Prior Learning
NAPS	National Apprenticeship Promotion Scheme
AA	Assessment Agency
TP	Training Provider / Training Partner
TC	Training Centre
ITI	Industrial Training Institute
NSQC	National Skill Qualification Committee
NSQF	National Skills Qualification Framework
Q-File	Qualification File
QP	Qualification Pack
MC	Model Curriculum
NOS	National Occupational Standards
PC	Performance Criteria
KU	Knowledge and Understanding
GS	Generic Skills

MCQ	Multiple Choice Question
EHS	Environment Health and Safety
PPE	Personal Protective Equipment
QA/QC	Quality Assurance / Quality Control
IS Code	Indian Standards Code
PMI	Positive Material Identification
MCB	Miniature Circuit Breaker
WPS	Welding Procedure Specification
PQR	Procedure Qualification Record
MIG	Metal Inert Gas Welding
TIG	Tungsten Inert Gas Welding
SMAW	Shielded Metal Arc Welding
GMAW	Gas Metal Arc Welding
GTAW	Gas Tungsten Arc Welding
FCAW	Flux Cored Arc Welding
SAW	Submerged Arc Welding
PAW	Plasma Arc Welding
LBW	Laser Beam Welding
EBW	Electron Beam Welding
ESW	Electro Slag Welding
UT	Ultrasonic Testing (NDT Method)
RT	Radiographic Testing (X-ray Inspection)
PT	Penetrant Testing (Dye Penetrant Test)
MPT	Magnetic Particle Testing
VT	Visual Testing
FAB	Fabrication
HSS	Hollow Structural Section
CJP	Complete Joint Penetration
PJP	Partial Joint Penetration
HFW	High-Frequency Welding
ISMC	Indian Standard Medium Channel
ISMB	Indian Standard Medium Beam
ISWB	Indian Standard Wide Flange Beam

Glossary

Term	Description
National Occupational Standards (NOS)	NOS defines the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf

Annexure: Career Progression