

**QUALIFICATION FILE**

**Digital Construction (WorldSkills)**

Short Term Training (STT)  Long Term Training (LT)  Apprenticeship

Upskilling  Dual/Flexi Qualification  For ToT  For ToA

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

NCrF/NSQF Level: 4.5

Submitted By:

Construction Skill Development Council of India

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## Section 1: Basic Details

1.	<b>Qualification Name</b>	Digital Construction (WorldSkills)																						
2.	<b>Sector/s</b>	Construction																						
3.	<b>Type of Qualification:</b> <input checked="" type="checkbox"/> New <input type="checkbox"/> Revised <input type="checkbox"/> Has Electives/Options <input type="checkbox"/> OEM	<b>NQR Code &amp; version of existing/previous qualification:</b> <i>(change to previous, once approved)</i>		<b>Qualification Name of existing/previous version:</b> NA																				
4.	a. OEM Name b. Qualification Name <i>(Wherever applicable)</i>	NA																						
5.	<b>National Qualification Register (NQR) Code &amp; Version</b> <i>(Will be issued after NSQC approval)</i>	QG-4.5-CO-01794-2024-V1-CSDCI, v 1.0		6. NCrF/NSQF Level: 4.5																				
7.	<b>Award (Certificate/Diploma/Advance Diploma/ Any Other</b> <i>(Wherever applicable specify multiple entry/exists also &amp; provide details in annexure)</i>	Certificate																						
8.	<b>Brief Description of the Qualification</b>	Digital Construction using Building Information Modelling (BIM) is a process for creating and managing information on a construction project across the project lifecycle. One of the key outputs of this process is the digital Building Information Model, the digital description of every aspect of the built asset. This digital model draws on information assembled collaboratively and updated at key stages of a project. Creating a digital Building Information Model enables those who interact with the building to optimise their actions, resulting in a more excellent whole life value for the asset.																						
9.	<b>Eligibility Criteria for Entry for Student/Trainee/Learner/Employee</b>	a. <b>Entry Qualification &amp; Relevant Experience:</b> The Competitors must not be older than 25 years in the year of the Competition.																						
10.	<b>Credits Assigned to this Qualification, Subject to Assessment</b> <i>(as per National Credit Framework (NCrF))</i>	17		11. <b>Common Cost Norm Category (I/II/III) (wherever applicable):</b> I																				
12.	<b>Any Licensing requirements for Undertaking Training on This Qualification</b> <i>(wherever applicable)</i>																							
13.	<b>Training Duration by Modes of Training Delivery</b> <i>(Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</i>	<input checked="" type="checkbox"/> Offline <input type="checkbox"/> Online <input type="checkbox"/> Blended <table border="1" style="width: 100%; border-collapse: collapse;"> <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>150</td> <td>360</td> <td></td> <td></td> <td>510</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <i>(Refer Blended Learning Annexure for details)</i>					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	150	360			510	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																			
Classroom (offline)	150	360			510																			
Online																								
14.	<b>Aligned to NCO/ISCO Code/s</b> <i>(if no code is available mention the same)</i>	NCO-2015/2142.9900																						

15.	<b>Progression path after attaining the qualification (Please show Professional and Academic progression)</b>		
16.	<b>Other Indian languages in which the Qualification &amp; Model Curriculum are being submitted</b>		
17.	<b>Is similar Qualification(s) available on NQR-if yes, justification for this qualification</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No URLs of similar Qualifications:	
18.	<b>Is the Job Role Amenable to Persons with Disability</b>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "Yes", specify applicable type of Disability:	
19.	<b>How Participation of Women will be Encouraged</b>	No gender sensitization	
20.	<b>Are Greening/ Environment Sustainability Aspects Covered (Specify the NOS/Module which covers it)</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (CON/Nxxxx: Work organization, management and communication)	
21.	<b>Is Qualification Suitable to be Offered in Schools/Colleges</b>	Schools <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Colleges <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
22.	<b>Name and Contact Details of Submitting / Awarding Body SPOC (In case of CS or MS, provide details of both Lead AB &amp; Supporting ABs)</b>	Name: Neha Sharma Dave Email: <a href="mailto:neha@csdcindia.org">neha@csdcindia.org</a> Contact No.: 0124-4513915-18 Ext-22 Website: <a href="http://www.csdcindia.org">www.csdcindia.org</a>	
23.	<b>Final Approval Date by NSQC:</b> <span style="color: green;">06/02/2024</span>	<b>24. Validity Duration:</b> <span style="color: green;">2 years</span>	<b>25. Next Review Date:</b> <span style="color: green;">06/02/2026</span>

## 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 curriculum document.

**Th.-Theory Pr.-Practical OJT-On the Job Man.-Mandatory Training 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.	Work Organization, Management and Communication	CON/N4101	Non-Core	4.5	2	20	40			60	30	70			100	10
2.	Preparation for the Test Project	CON/N4111	Core	4.5	3	30	60			90	30	70			100	15
3.	Drawing of Test Project (Digital Construction Skill)	CON/N4112	Core	4.5	9	80	190			270	30	70			100	60
4.	Quality Check and Handover	CON/N4105	Non-Core	4.5	3	20	70			90	30	70			100	15
Duration (in Hours) / Total Marks					17	150	360			510	120	280			400	100

## 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.	<b>Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b>	B. Tech in Relevant Trade (2 Year) Diploma in Relevant Trade (3 Years) ITI in Relevant Trade (6 Years) General BA/BSc. / EX-Army/ 12th in Relevant Trade (6 Years)
2.	<b>Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)</b>	B. Tech in Relevant Trade (4 Years) Diploma in Relevant Trade (5 years)
3.	<b>Tools and Equipment Required for Training</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (If "Yes", details to be provided in Annexure)
4.	<b>In Case of Revised Qualification, Details of Any Upskilling Required for Trainer</b>	NA

## Section 4: Assessment Related

1.	<b>Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	B. Tech in Relevant Trade (2 years) Diploma in Relevant Trade (5 years) ITI in Relevant Trade (7 years)
2.	<b>Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	B. Tech in Relevant Trade (1 year) Diploma in Relevant Trade (2 years) ITI in Relevant Trade (5 years)
3.	<b>Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)</b>	B. Tech in Relevant Trade (4 year) Diploma in Relevant Trade (7 years)
4.	<b>Assessment Mode (Specify the assessment mode)</b>	Offline
5.	<b>Tools and Equipment Required for Assessment</b>	<input checked="" type="checkbox"/> Same as for training <input type="checkbox"/> Yes <input type="checkbox"/> 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): NA
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): NA
3.	Government /Industry initiatives/ requirement (Yes/No): NA
4.	Number of Industry validation provided: NA
5.	Estimated nos. of persons to be trained and employed: NA
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: NA  If "No", why:

## Section 6: Annexure &amp; Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrF/NSQF level justification based on NCrF level/NSQF descriptors (Mandatory)	Attached
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Attached
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Attached
4.	Annexure: Assessment Strategy (Mandatory)	Attached
5.	Annexure: Blended Learning (Mandatory, in case selected Mode of delivery is "Blended Learning")	NA
6.	Annexure: Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	NA
7.	Annexure: Acronym and Glossary (Optional)	Attached
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Attached
9.	Supporting Document: Career Progression (Mandatory - Public view)	NA
10.	Supporting Document: Occupational Map (Mandatory)	NA
11.	Supporting Document: Assessment SOP (Mandatory)	Attached
12.	Any other document you wish to submit:	Technical Description for Digital Construction

## Annexure 1: 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	<ul style="list-style-type: none"> <li>Process of determining the BIM modeling requirements</li> </ul>	As detailed, the entire process followed by BIM Modeler is determining the BIM modeling requirements, creating the BIM model using the BIM software, documenting and record keeping for BIM models, working according to personal health, safety	4.5

	<ul style="list-style-type: none"> <li>● Process of creating the BIM model using the BIM software</li> <li>● Process of documenting and record keeping for BIM models</li> <li>● Process of working according to personal health, safety and environment protocols at a construction site</li> <li>● Process of preparing for MEP BIM modeling</li> <li>● Process of carrying-out modeling for MEP BIM projects</li> <li>● Process of preparing for structural and formwork BIM modeling</li> <li>● Process of carrying out structural and formwork BIM modeling</li> <li>● Process of preparing for architectural and landscape BIM modeling</li> <li>● Process of carrying-out for architectural and landscape BIM modeling</li> </ul>	<p>and environment protocols, preparing for MEP BIM modeling, carrying-out modeling for MEP BIM projects, preparing for structural and formwork BIM modeling, carrying out structural and formwork BIM modeling, preparing for architectural and landscape BIM modeling, and carrying-out for architectural and landscape BIM modeling.</p> <p>As the work is routine and is repeated multiple times, the work becomes predictable.</p> <p>As the BIM Modeler is required to perform the task as per the required codes and standards following the method statement available for the task, they have a clear work situation.</p>	
<b>Professional and Technical Skills/ Expertise/ Professional Knowledge</b>	<ul style="list-style-type: none"> <li>● Know the benefits of using BIM modeling software in building construction projects</li> <li>● Understand how to identify the key stakeholders and their roles in the BIM process</li> <li>● Know the use of relevant BIM Management software for design review, clash detection, model quality check, COBie data integration, as-built model, attachment document to BIM Model</li> <li>● Understand use of appropriate BIM tools for the creation and rendering of 3D models of a building, structures, etc.</li> <li>● Understand the BIM and construction management.</li> </ul>	<p>The knowledge required for BIM Modeler is factual as it is specific and limited to the knowledge of benefits of using BIM modeling software in building construction projects, identify the key stakeholders and their roles in the BIM process, the use of relevant BIM Management software for design review, clash detection, model quality check, COBie data integration, as-built model, attachment document to BIM Model, BIM and construction management, use of appropriate BIM tools for the creation and rendering of 3D models of a building, structures, etc., importance of ensuring updated and accurate BIM documentation before their release to the client, the various Mechanical, Electrical, and Plumbing systems and components used in buildings, including Heating, Ventilation, and Air Conditioning (HVAC), electrical distribution, lighting, plumbing, fire protection, etc., the relevant building codes, regulations, and industry standards related to MEP systems, procedure of determining the MEP BIM requirements, how to</p>	4.5

	<ul style="list-style-type: none"> <li>● Know the importance of ensuring updated and accurate BIM documentation before their release to the client.</li> <li>● Understand the various Mechanical, Electrical, and Plumbing systems and components used in buildings, including Heating, Ventilation, and Air Conditioning (HVAC), electrical distribution, lighting, plumbing, fire protection, etc.</li> <li>● Know the relevant building codes, regulations, and industry standards related to MEP systems</li> <li>● Understand the procedure of determining the MEP BIM requirements</li> <li>● Know how to plan for temporary systems or installations if needed during construction</li> <li>● Understand the appropriate BIM techniques and software to be used for designing and detailing MEP systems</li> <li>● Know how to carry out formwork modeling and detailing</li> <li>● Know how to use the appropriate software for structure and formwork modeling</li> <li>● Know how to interpret the technical drawings and building plans</li> <li>● Understand the process of planning structural and formwork BIM modeling</li> <li>● Understand the importance of effective coordination</li> <li>● Know the building codes and standards</li> <li>● Know the appropriate formwork planning and detailing tasks</li> <li>● Know how to use the BIM modeling software in building construction projects</li> </ul>	<p>plan for temporary systems or installations if needed during construction, the appropriate BIM techniques and software to be used for designing and detailing MEP systems, carry out formwork modeling and detailing, appropriate software for structure and formwork modeling, interpret the technical drawings and building plans, of planning structural and formwork BIM modeling, effective coordination, building codes and standards, appropriate formwork planning and detailing tasks, BIM modeling software in building construction projects, applicable building standards and codes, pour geometry modeled in 3D to pinpoint the right angles and location, benefits and use of BIM to streamline architectural and landscape project administration and design, the architectural design principles, including space planning, building typologies, aesthetics, circulation, and functional requirements, the landscape design principles, such as site analysis, grading, planting, hardscape elements, water features, and sustainable design practices, the appropriate 3D modeling techniques and how to apply textures to architectural and landscape elements to enhance the visual representation, etc.</p> <p>therefore, their knowledge is applicable to their field of work only</p>	
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	<ul style="list-style-type: none"> <li>Understand the applicable building standards and codes</li> <li>Know how to use pour geometry modeled in 3D to pinpoint the right angles and location</li> <li>Know the benefits and use of BIM to streamline architectural and landscape project administration and design</li> <li>Understand the architectural design principles, including space planning, building typologies, aesthetics, circulation, and functional requirements</li> <li>Understand the landscape design principles, such as site analysis, grading, planting, hardscape elements, water features, and sustainable design practices</li> <li>Know the appropriate 3D modeling techniques and how to apply textures to architectural and landscape elements to enhance the visual representation</li> </ul>		
<b>Employment Readiness &amp; Entrepreneurship</b> <b>Skills &amp; Mind-set/Professional Skill</b>	<ul style="list-style-type: none"> <li>Check how to determine the project requirements, scope, objectives and constraints.</li> <li>Check the procedure of collect all the relevant project information.</li> <li>Check how to create the BIM model.</li> <li>Check how to perform BIM model review, documentation and detailing.</li> <li>Check how to carry out the documentation for BIM models.</li> <li>Check the importance of following health and safety practices at work.</li> <li>Check the applicable employability skills.</li> </ul>	As indicated the skill set required to check how to determine the project requirements, scope, objectives and constraints, check the procedure of collect all the relevant project information, check how to create the BIM model, check how to perform BIM model review, documentation and detailing, check how to carry out the documentation for BIM models, check the importance of following health and safety practices at work, check the applicable employability skills , check the process of preparing for MEP BIM modelling, check the process of preparing for structural and formwork BIM modeling, check the process of preparing for architectural and landscape BIM modeling, etc.	4.5

	<ul style="list-style-type: none"> <li>Check the process of preparing for MEP BIM modelling.</li> <li>Check the process of preparing for Structural and Formwork BIM Modeling.</li> <li>Check the process of preparing for Architectural and Landscape BIM Modeling.</li> </ul>		
<b>Broad Learning Outcomes/Core Skill</b>	<ul style="list-style-type: none"> <li>Determining the BIM modeling requirements</li> <li>Creating the BIM model using the BIM software</li> <li>Documenting and record keeping for BIM models</li> <li>Work according to personal health, safety and environmental protocols at construction site</li> <li>Preparing for MEP BIM modeling</li> <li>Carrying-out modeling for MEP BIM projects</li> <li>Preparing for structural and formwork BIM modeling</li> <li>Carrying out structural and formwork BIM modeling</li> <li>Preparing for architectural and landscape BIM modeling</li> <li>Carrying-out for architectural and landscape BIM modeling</li> </ul>	<p>The job holder is expected to determining the BIM modeling requirements, creating the BIM model using the BIM software, documenting and record keeping for BIM models, work according to personal health, safety and environmental protocols at construction site, preparing for MEP BIM modeling, carrying-out modeling for MEP BIM projects, preparing for structural and formwork BIM modeling, carrying out structural and formwork BIM modeling, preparing for architectural and landscape BIM modeling, carrying-out for architectural and landscape BIM modeling, etc.</p>	4.5
<b>Responsibility</b>	<p>The individual in this role will be responsible for below mentioned activities:</p> <ul style="list-style-type: none"> <li>Determine the BIM modeling requirements</li> <li>Create the BIM model using the appropriate BIM software</li> <li>Carry out documentation and record-keeping for BIM models</li> <li>Follow health and safety norms as defined by organization</li> </ul>	<p>A BIM Modeler is responsible for creating and managing digital BIM models of architectural, structural, Mechanical, Electrical and Plumbing (MEP), or landscape elements for construction and infrastructure projects. The individual collaborates with project stakeholders, including architects, engineers, and contractors, to ensure the successful implementation of BIM processes throughout the project lifecycle.</p>	4.5

	<ul style="list-style-type: none"><li>• Preparing for MEP, structural &amp; formwork BIM modeling, and architectural &amp; landscape BIM modeling</li><li>• Carrying-out MEP, structural &amp; formwork BIM modeling, and architectural &amp; landscape BIM modeling</li></ul>		
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MSOC Approved

## Annexure 2: Tools and Equipment (Lab Set-Up / Competition Area)

## List of Tools and Equipment

Batch Size: 30 Candidates

SI N	Tool / Equipment Name	Specification	Quantity
1	Desk Lamp	Numbers	1 pcs per Competitor
2	Anti-noise headphones	Numbers	1 pcs per Competitor
3	notepad	Numbers	1 pcs per Competitor
4	Adhesive water resistant tape (48x50)	Numbers	3 per Skill
5	padlock	Numbers	2 pcs per Competitor
6	Computer	Numbers	1 pcs per Competitor
7	Monitor 24"	Numbers	2 pcs per Competitor
8	Keyboard (QWERTY)	Numbers	1 pcs per Competitor
9	Computer	Numbers	1 pcs per Skill
10	Monitor 24"	Numbers	1 pcs per 3 Experts
11	Keyboard (QWERTY)	Numbers	1 pcs per Skill
12	Screen and projector	Numbers	1 pcs per Skill
13	TV Stand to mount	Numbers	1 pcs per Skill
14	Computer, SCM-room French partner, leni, <a href="https://www.locapc.fr/">https://www.locapc.fr/</a> , <a href="http://www.handyamo.com">www.handyamo.com</a>	Numbers	1 pcs per Expert
15	Computer, SCM-room French partner, leni, <a href="https://www.locapc.fr/">https://www.locapc.fr/</a> , <a href="http://www.handyamo.com">www.handyamo.com</a>	Numbers	1 pcs per Skill
16	TV	Numbers	1 pcs per 4 Competitors
17	Floor stand for TV	Numbers	1 pcs per 4 Competitors
18	Computer	Numbers	2 pcs per Skill
19	Monitor 24"	Numbers	4 pcs per Skill
20	Keyboard (QWERTY)	Numbers	2 pcs per Skill
21	Mousepad	Numbers	1 pcs per Competitor
22	Mousepad	Numbers	1 pcs per Skill
23	Mousepad	Numbers	2 pcs per Skill
24	Mousepad	Numbers	1 pcs per Expert
25	Cable HDMI (15 m)	Numbers	1 pcs per 4 Competitors
26	Cable DisplayPort-HDMI	Numbers	2 pcs per Competitor
27	Ethernet patch cord	Numbers	1 pcs per Competitor
28	Ethernet patch cord	Numbers	1 pcs per 2 Experts
29	Ethernet patch cord	Numbers	3 pcs per Skill
30	RJ-45 connector	Numbers	3 kits per Skill
31	RJ-45 Isolation Cover	Numbers	3 kits per Skill
32	RJ-45 Connector Installation tool	Numbers	1 pcs per Skill
33	RJ-45 Connection Tester	Numbers	1 pcs per Skill
34	Cable hose clamp	Numbers	1 pcs per Skill
35	Color Laser Printer + Scan (A3/A4)	Numbers	1 pcs per Skill
36	Monitor 24"	Numbers	2 pcs per Skill
37	Computer, SCM-room French partner, leni, <a href="https://www.locapc.fr/">https://www.locapc.fr/</a> , <a href="http://www.handyamo.com">www.handyamo.com</a>	Numbers	1 pcs per Skill
38	Computer	Numbers	1 pcs per Skill

39	HDMI splitter 1 in 8 out	Numbers	1 pcs per 4 Competitors
40	HDMI Splitter 1x2	Numbers	1 pcs per Skill
41	Cable HDMI (15 m)	Numbers	2 pcs per Skill
42	Floor stand for TV	Numbers	2 pcs per Skill
43	Wi-Fi Router	Numbers	1 pcs per Skill
44	Network switch (48 ports RJ45 + 2 Port SFP+ 10G Min.)	Numbers	2 pcs per Skill
45	Tablet for marking	Numbers	10 pcs per Skill
46	Network filter with, at least, 5 sockets	Numbers	20 pcs per Skill
47	Mousepad	Numbers	1 pcs per Skill
48	Keyboard (QWERTY)	Numbers	1 pcs per Skill
49	Network switch (48 ports RJ45 + 2 Port SFP+ 10G Min.)	Numbers	1 pcs per Skill
50	Wi-Fi Router	Numbers	1 pcs per Skill
51	Acoustic system with 2 wireless microphones	Numbers	1 pcs per Skill
52	Mouse	Numbers	1 pcs per Skill
53	Mouse	Numbers	1 pcs per 3 Experts
54	Mouse	Numbers	1 pcs per Competitor
55	Mouse	Numbers	2 per Skill
56	Mouse	Numbers	3 per Skill
57	Cable HDMI (3 m)	Numbers	2 per Competitor
58	safety lock for PC	Numbers	1 per Competitor
59	Multiple socket outlet 6 Type E (3 meters cable)	Numbers	1 per Competitor
60	Multiple socket outlet 6 Type E (3 meters cable)	Numbers	1 per 3 Experts
61	Multiple socket outlet 6 Type E (3 meters cable)	Numbers	4 per Skill
62	Revit	Numbers	1 pcs per Competitor
63	Autodesk Construction Cloud	Numbers	1 pcs per Competitor
64	Adobe Reader DC	Numbers	1 pcs per Competitor
65	Windows OS (11)	Numbers	1 pcs per Competitor
66	Revit	Numbers	1 pcs per Skill
67	Autodesk Construction Cloud	Numbers	1 pcs per Skill
68	Adobe Reader DC	Numbers	1 pcs per Skill
69	Windows OS (11)	Numbers	1 pcs per Skill
70	Revit	Numbers	1 pcs per Expert
71	Autodesk Construction Cloud	Numbers	1 pcs per Expert
72	Adobe Reader DC	Numbers	1 pcs per Expert
73	Windows OS (11)	Numbers	1 pcs per Expert
74	Revit	Numbers	3 pcs per Skill
75	Autodesk Construction Cloud	Numbers	3 pcs per Skill
76	Adobe Reader DC	Numbers	3 pcs per Skill
77	Windows OS (11)	Numbers	3 pcs per Skill
78	Navisworks	Numbers	1 pcs per Skill
79	Navisworks	Numbers	1 pcs per Expert
80	Navisworks	Numbers	2 pcs per Skill
81	Add on to Revit	Numbers	1 pcs per Skill

82	AutoCAD 2024	Numbers	1 pcs per Competitor
83	Add on to Revit	Numbers	1 pcs per Expert
84	Autodesk Addon to Revit	Numbers	3 pcs per Skill
85	Google Chrome	Numbers	1 pcs per Skill
86	Google Chrome	Numbers	1 pcs per Expert
87	Google Chrome	Numbers	1 pcs per Competitor
88	Navisworks	Numbers	1 pcs per Competitor
89	Autodesk Desktop Connector application	Numbers	3 pcs per Skill
90	Autodesk Desktop Connector application	Numbers	1 pcs per Skill
91	Autodesk Desktop Connector application	Numbers	1 pcs per Expert
92	Autodesk Desktop Connector application	Numbers	1 pcs per Competitor
93	Autodesk Desktop Connector application	Numbers	2 pcs per Skill
94	Autodesk Addon to Revit	Numbers	2 pcs per Skill
95	Adobe Reader DC	Numbers	2 pcs per Skill
96	Autodesk Construction Cloud	Numbers	2 pcs per Skill
97	Windows OS (11)	Numbers	2 pcs per Skill
98	Google Chrome	Numbers	2 pcs per Skill
99	Navisworks	Numbers	3 pcs per Skill
100	Revit	Numbers	2 pcs per Skill
101	Windows OS (11)	Numbers	1 pcs per Skill
102	Windows OS (11)	Numbers	3 pcs per Skill
103	Windows OS (11)	Numbers	2 pcs per Skill
104	Windows OS (11)	Numbers	1 pcs per Expert
105	Windows OS (11)	Numbers	1 pcs per Competitor
106	Google Chrome	Numbers	3 pcs per Skill
107	Twinmotion	Numbers	1 pcs per Expert
108	PowerBI Desktop	Numbers	1 pcs per Competitor
109	Twinmotion	Numbers	1 pcs per Competitor
110	PowerBI Desktop	Numbers	1 pcs per Expert
111	Twinmotion	Numbers	1 pcs per Skill
112	PowerBI Desktop	Numbers	1 pcs per Skill
113	PowerBI Desktop	Numbers	2 per Skill
114	Twinmotion	Numbers	2 pcs per Skill
115	Twinmotion	Numbers	3 per Skill
116	PowerBI Desktop	Numbers	3 per Skill
117	Navisworks revit exporter	Numbers	1 pcs per Competitor
118	Microsoft 365	Numbers	1 per Competitor
119	Microsoft 365	Numbers	1 per Expert
120	microsoft excel desktop	Numbers	1 per Competitor
121	Table	Numbers	1 pcs per Competitor
122	Office Chair - Chair 2	Numbers	1 pcs per Competitor
123	Trash bin (10 L)	Numbers	1 pcs per Competitor
124	Chair -Type1 (without wheels)	Numbers	2 pcs per Competitor

125	Water cooler	Numbers	1 pcs per Skill
126	Trash bin (10 L)	Numbers	2 pcs per Skill
127	Refrigerator	Numbers	1 pcs per Skill
128	Table	Numbers	1 pcs per 2 Experts
129	Office Chair - Chair 2	Numbers	4 pcs per Skill
130	Trash bin (10 L)	Numbers	2 pcs per Skill
131	Locker skill 58	Numbers	1 pcs per Expert
132	Table	Numbers	2 pcs per Skill
133	Trash bin (10 L)	Numbers	1 pcs per Skill
134	Office Chair - Chair 2	Numbers	3 pcs per Skill
135	Locker skill 58	Numbers	1 pcs per Competitor
136	Office Chair - Chair 2	Numbers	2 pcs per Skill
137	Table	Numbers	2 pcs per Skill
138	Office Chair - Chair 2	Numbers	3 pcs per Skill
139	Table	Numbers	3 pcs per Skill
140	Clothes hanger	Numbers	4 pcs per Skill
141	Pencil (HB) with rubber in one end	Numbers	50 pcs per Skill
142	Water cooler	Numbers	1 pcs per Skill
143	Locker skill 58	Numbers	1 pcs per Skill
144	Locker skill 58	Numbers	1 pcs per Skill
145	Shelving	Numbers	2 pcs per Skill
146	Clothes hanger	Numbers	1 pcs per Skill
147	Side Table	Numbers	1 pcs per Competitor
148	Highlighter Set	Numbers	1 per Competitor
149	Cable hose clamp	Numbers	1 per Skill
150	HSE First Aid Kit	Numbers	2 pcs per Skill
151	Fire extinguisher (Carbon dioxide)	Numbers	2 pcs per Skill
152	Paper for print A4	Numbers	5 pcs per Skill
153	Highlighter Set	Numbers	5 pcs per Skill
154	Stapler (20 mm)	Numbers	5 pcs per Skill
155	Staples pin	Numbers	5 pcs per Skill
156	Staple remover	Numbers	5 pcs per Skill
157	Sticky tape large	Numbers	5 pcs per Skill
158	Battery (AAA)	Numbers	10 pcs per Skill
159	Battery (AAA)	Numbers	10 pcs per Skill
160	Rubber/eraser	Numbers	30 pcs per Skill
161	Pencil Sharpener	Numbers	5 pcs per Skill
162	Clock (on the wall)	Numbers	1 pcs per Skill
163	Clock (on the wall)	Numbers	4 pcs per Skill
164	Paper for print A3	Numbers	2 pcs per Skill
165	Color Laser Printer + Scan (A3/A4)	Numbers	1 per Skill

## 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 3: 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)
NA	NA	NA	NA	NA	NA	NA	NA

## Annexure 4: Training &amp; 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
NA	NA	NA		NA	NA		NA	NA
NA	NA	NA		NA	NA		NA	NA
NA	NA	NA		NA	NA		NA	NA

*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	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

*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:

## Content availability for previous versions of qualifications:

Participant Handbook  Facilitator Guide  Digital Content  Qualification Handbook  Any Other:

## Languages in which Content is available:

## Annexure 5: Detailed Assessment Criteria

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

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
Work Organization, Management and Communication	Explain health and safety legislation, obligations, and documentation	30	70		
	check and ensure the availability of appropriate and usable Personal Protective Equipment (PPE) at the workplace				
	use the appropriate PPE according to the nature of work and ensure other personnel also do the same				
	follow and promote the appropriate measures to ensure hygiene in the workplace, e.g. regular cleaning and sanitization				
	follow the applicable emergency procedures and ensure the personnel also do the same				
	Learn precautions for the safe use of power and cordless tools				
	Apply standards and laws relating to security, safety, and hygiene in plastering and drywall systems				
	establish methods for optimal and economically organized construction site. regarding construction plan and equipment, organization and procedures, material management, staffing and timelines				
	determine the correct calculations and estimates by using principles and methods				
	store plasterboards and related products safely and securely				
	be proactive in own continuous professional development in order to keep abreast of methods of working in the construction industry and changing technologies, for example acoustics, sustainability and environmental impact				
	Work effectively as part of teams				
	Work effectively with other trades				
	Establish and maintain high quality standards and working processes				
	identify problems promptly and manage their resolution				
	select, use and store all materials safely				
	plan work areas to maximize efficiency and maintain the discipline of regular tidying				
	principles and methods for determine the correct calculations and estimates				
	understand technical terminology and symbols				
	visualize and translate customer wishes making recommendations which meet/improve their design and budgetary requirements where qualified to do so				
	Produce a cost and time estimate for customers				
	introduce related trades to support customer requirements				
	work effectively in a team to facilitate efficiency/productivity/quality and cost control				
	recognize the needs of architects and related trades				
	explain the importance of swiftly resolving misunderstandings and conflicting demands				
Preparation for the Test Project	<b>Total Marks</b>	<b>30</b>	<b>70</b>		
	Power up the equipment and activate the appropriate modelling software	30	70		
	Set up and check peripheral devices such as keyboard, and mouse				
	Use computer operating systems and specialist software to create and manage and store files proficiently both locally and to the Common Data environment BIM project				

	Select correct drawing packages from an on-screen menu or graphical equivalent				
	Use various techniques for accessing and using BIM software such as a mouse, menu, or tool bar				
Drawing of Test Project (Digital Construction)	Configure the parameters of the software				
	Interpret clients' briefs to determine: Outline requirements of each project, Client goals, Locations, Work from BEPs, client briefs and EIRs to address client and project requirements, Create and edit BIM information within CDEs as per BEPs across the lifecycle of construction projects and provide access/set permissions to the necessary folders to the BIM team				
	Total Marks	30	70		
	Open an appropriate Project Information Model from the relevant directory within the CDE				
	Populate Project Properties with given information				
	Set each model up as collaborative files				
	Create work sets				
	Set each project Location, orientation and level datum				
	Create each structural grid				
	Create BIM models as per given drawings				
	Save each BIM model with a prescribed starting View				
	Save each Project Information Model within the CDE for use by the other disciplines via Construction Cloud software				
	Adhere to the requirements of the BEP to ensure Data drops are made via the Construction Cloud software				
	Produce scaled detailed drawings to the required standard using callout and details items				
	Create 3D visuals to illustrate each building from different viewpoints				
	Apply problem-solving techniques to overcome challenges that arise during the BIM modelling process				
	Use creative and innovative thinking to propose improvements in the BIM process and to solve technical and design problems				
	Stay abreast of and apply the latest trends and advancements in BIM technology to increase efficiency and quality of models				
	Federate Structural, Architectural and specialist designer project models				
	Perform Clash Inspections as per the BEP				
	Export all tests as per the BEP and issue to the CDE				
	Save and issue federated files as per the BEP				
	Quality assure each federated project model by visually inspecting each CDE hosted model				
	Identify issues with coordination in each new build that haven't shown up in the three clash tests				
	For each issue discovered: Create the issue, Add annotation describing the issue, Assign the issue to the BIM Manager on the project, Name each view as per the BEP				
	Update Project Information Models from the published directory				
	Ensure all required assets have the required data populated as per the latest standard				

	Add classification information to each model elements – referring to the project BEP				
	Create COBie and IFC data from BIM model elements				
	Create Shared Parameter files with custom parameters for selected building elements				
	Create Custom Tags to visually express technical information from custom parameters				
	Create colour filters to visually express technical information from the custom parameters on duplicate plans, sections and 3D cut sections				
	Create schedules of project information including custom parameters				
	Plot PDF sheet sets of combined PDFs to correct scale and correct sheet sizes				
	Run visual scripts to automate data extraction				
	Visualise data with dashboards within the CDE				
	Take off quantities from PDF and 3D models				
	Incorporate sustainability considerations into the data creation and management process				
	Use BIM to support decision-making that reduces the environmental impact of construction projects				
	Carry out lifecycle analysis as part of the BIM process to support sustainable decision-making				
	Publish construction documents for construction				
	Create and complete digital safety checklists for construction site				
	Track construction site issues and assign them to stakeholders				
	Set up meetings, protocol outcomes, and assign action items to meeting attendees				
	Manage assets and track assets for construction sites				
<b>Total Marks</b>		<b>30</b>	<b>70</b>		
Quality Check and Handover	Inspect equipment, structures, and/or material to identify the nature and causes of errors, defects, or problems				
	Think critically by using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems				
	Identify actual and potential problems				
	Analyse information and evaluate options to choose and use the best solution				
	Evaluate solutions and optimize results				
	The need for all work to be presented to meet customer and related trades needs and expectations				
	The importance of joint finishing in line with the specifications provided				
	The different techniques of applying different joint finishes				
	understand the process of marking and assessment criteria of respective trade				
	respond to the juries on the queries being raised by them				
	Make and follow through decision				
	Apply appropriate techniques according to buildings' history and fabrication, whilst maintaining their integrity for both internal and external surfaces				
	Leave work areas in a suitable condition for inspection and subsequent work				
	Report positive and negative variances in work processes and results, together with their implications				
	Organize any waste material so that it can be disposed of or recycled efficiently				
<b>Total Marks</b>		<b>30</b>	<b>70</b>		

<b>Grand Total</b>	<b>120</b>	<b>280</b>		
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Msoc Approved

## Annexure 6: Assessment Strategy

**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.

- The primary aim of the Skill assessment strategy and procedures is to ensure a fair, transparent, objective, and reliable assessment process, promoting excellence in skills and providing a level playing field for all Competitors.
- This skill competition is classed as "fault finding" on all days. Therefore, no Expert and Competitor communication during the competition time, including breaks and lunch period, are allowed. For official Compatriot Communication, Competition Rules 7.3.3 is strictly applied.
- In accordance with WorldSkills Rules and guidance, on C-3 Mandatory Assessment Training will include practical assessments of each Experts' expertise both technically, and in assessment and marking. Following this, the Chief Expert and Skill Competition Manager will determine who will assess, and who will have the opportunity to enhance their expertise through observation.
- Marking Teams are based on Sub Criteria, which in turn will reflect the weightings in the WorldSkills Occupational Standards (WSOS). The criteria for determining which Marking Team will mark each Sub Criteria is in the Competition's assessment plan as well as the organization and timing of each module.
- To ensure the highest standards of marking consistency, a periodic review of marked tasks will be conducted by the Chief Expert or designated senior Experts. Any discrepancies in marking will be discussed and resolved collectively.
- One Marking Team must mark every aspect within the sub criterion.
- Where appropriate, technology-assisted assessment tools may be utilized to ensure consistency and accuracy in the marking process. However, the final decision on marks awarded will always lie with the Marking Teams.
- In accordance with the Rules, there is no blind marking and no compatriot marking. The composition of each Marking Team will ensure that these restrictions are adhered to.
- All Experts involved in the assessment process must declare any potential conflicts of interest. Steps will be taken to ensure that no Expert is placed in a position where their impartiality could be compromised.
- All assessment decisions, especially those requiring deliberation, will be documented meticulously to ensure transparency and to serve as a reference for any post-competition reviews or appeals.
- Exceptions to the rules are permissible only with the agreement of the Chair and Vice Chair of the Competitions Committee. The Skill Advisor must be contacted if this possibility is raised due to a lack of Experts with the required expertise.
- 0: performance below industry standard,
- 1: performance meets industry standard,
- 2: performance meets and, in specific respects, exceeds industry standard,
- 3: performance wholly exceeds industry standard and is judged as excellent

For more updates, kindly visit: <https://worldskills.org>

## Annexure 7: Acronym and Glossary

## Acronym

Acronym	Description
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<b>AA</b>	Assessment Agency
<b>AB</b>	Awarding Body
<b>CSDCI</b>	Construction Skill Development Council of India
<b>ISCO</b>	International Standard Classification of Occupations
<b>NCO</b>	National Classification of Occupations
<b>NCrF</b>	National Credit Framework
<b>NOS</b>	National Occupational Standard(s)
<b>NQR</b>	National Qualification Register
<b>NSQF</b>	National Skills Qualifications Framework
<b>WSC</b>	World Skills Competition

## Glossary

Term	Description
<b>National Occupational Standards (NOS)</b>	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.
<b>Qualification</b>	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
<b>Qualification File</b>	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.
<b>Sector</b>	A grouping of professional activities on the basis of their main economic function, product, service or technology.
<b>Long Term Training</b>	Long-term skilling means any vocational training program undertaken for a year and above. <a href="https://ncvet.gov.in/sites/default/files/NCVET.pdf">https://ncvet.gov.in/sites/default/files/NCVET.pdf</a>