



Maldives National Skills Development Authority



National Competency Standard for Welding Techniques

Standard Code: CONS01V2/20

Qualification Name: National Certificate III in Welding Techniques

Qualification Code: CONS01Q1L3V2/20

PREFACE

Technical and Vocational Education and Training (TVET) Authority was established with the vision to develop a TVET system in the Maldives that is demand driven, accessible, beneficiary financed and quality assured, to meet the needs of society for stability and economic growth, the needs of Enterprise for a skilled and reliable workforce, the need of young people for decent jobs and the needs of workers for continuous mastery of new technology.

TVET system in the Maldives flourished with the Employment Skills Training Project (ESTP) funded by ADB with the objective of increasing the number of Maldivians, actively participating in the labor force, employed and self-employed. The Project supported expansion of demand driven employment-oriented skills training in priority occupations and to improve the capacity to develop and deliver Competency Based Skill Training (CBST). The project supported delivery of CBST programs to satisfy employer demand-driven needs.

Recognizing the importance of developing the youth sector to enable Maldives to transition from an upper-middle-income country to high-income country, the World Bank Country Partnership Framework (CPF) proposes to finance the Maldives Enhancing Employability and Resilience of Youth (MEERY) project. As part of the MEERY project is financing for skills development and entrepreneurship in priority sectors such as tourism, ICT and construction sector MEERY continues to provide support to TVET Authority to develop National Occupational Standard, instructional materials, assessment resource book and trainees log book for the National Occupational Standard for "Welding Techniques". As part of the MEERY Project, TVET Authority has only undertaken to review standard which were developed in the ESTP Project to increase the economic opportunities for youth's trainees and promote equitable economic & social development in the country.

The National Competency Standards (NCS) provide the base for this training. Currently CBST is offered for six key sectors in the Maldives: Tourism, Fisheries and Agriculture, Transport, Construction, Social and the Information and Technology sectors. These sectors are included as priority sectors that play a vital role in the continued economic growth of the country.

The NCS are developed in consultation with Employment Sector Councils representing employers. They are designed using a consensus format endorsed by the Maldives Qualifications Authority (MQA) to maintain uniformity of approach and the consistency of content amongst occupations. This single format also simplifies benchmarking the NCS against relevant regional and international standards. NCS specify the standards of performance of a competent worker and the various contexts in which the work may take place. NCS also describes the knowledge, skills and attitudes required in a particular occupation. They provide explicit advice to assessors and employers regarding the knowledge, skills and attitudes to be demonstrated by the candidates seeking formal recognition for the competency acquired following training or through work experience. By sharing this information, all participants in the training process have the same understanding of the training required and the standard to be reached for certification. Certification also becomes portable and can be recognized by other employers and in other countries with similar standards.

NCS are the foundation for the implementation of the TVET system in Maldives. They ensure that all skills, regardless of where or how they were developed can be assessed and recognized. They also form the foundation for certifying skills in the Maldives National Qualification Framework (MNQF).

NCS are developed by the Technical and Vocational and Education Training Authority of Ministry of Higher Education. The NCS are endorsed by the Employment Sector Councils of the respective sectors and validated by the Maldives Qualification Authority.



Mohamed Hashim
Minister of State for Higher Education
TVET Authority




Ahmed Nisham
Director, Standard Development & Statistics
TVET Authority

EMPLOYMENT SECTOR COUNCILS

#	Name	Designation	Organization
01	Hassan Shameem	Managing Director	INOCA Pvt Ltd
02	Mohamed Naseer	President	Contractors Association
03	Ismail Ameen	Professional Member	Architect Association of Maldives
04	Mohamed Musthafa	Director General	Ministry of Environment and Energy
05	Mohamed Rasheed	Assistant Director, Project Management and Development	Housing Development Corporation
06	Adnan Haleem	Secretary General	Maldives National Association of Construction Industry
07	Ahmed Musthaq	General Manager Engineering and Maintenance	Maldives Airports Company Limited
08	Ahmed Migdhad	Director	Ministry of Economic Development
09	Hussain Shiyam	Civil Engineer	Association of Civil Engineers
10	Mariyam Abdul Rahman	Director	Ministry of Youth, Sports and Community Empowerment
11	Ibrahim Shareef Hassan	Manager of Academic and Student Structure Board	Maldives Institute of Technology (MIT)
12	Mohamed Haikal Ibrahim	Head of Department Engineering	Maldives National University
13	Mohamed Shahud	Assistant Engineer	Ministry of National Planning
14	Muaz Ibrahim	Assistant Manager Projects	MWSC
15	Mohamed Waheed	Assistant Lecturer Grade 2	Maldives Polytechnic

National Occupational Standard has been endorsed by:

 Hassan Shameem Chairperson Construction Employment Sector Council	Mohamed Naseer Vice-Chairperson Construction Employment Sector Council
Technical and Vocational Education and Training Authority Ministry of Higher Education Handhuvaree Hingun, M. World Dream Male', Maldives	
Date of Endorsement: 2015	Date of Revision: 28th of September, 2020

TECHNICAL PANEL MEMBERS			
#	Name	Designation	Organization
01	Ahmed Iaan	Senior Welder, Grade 3, Level 3	MACL
02	Ismail Ali	Assistant lecturer	Maldives Polytechnic
03	Abdulla Hassan	Engineer	Maldives Ports Limited
04	Mohamed Arshad	Assistant Engineer	STELCO
05	Abdulla Iyad Ahmed	Senior Technical Officer	HDC
06	Ibrahim Nishar	Freelancer	Freelancer

VERSION	DEVELOPER	DATE	STANDARD CODE
V1	TVET Authority	2015	
V2	Maldives Institute of Technology	28th of September, 2020	CONS01V2/20

Standard Development Process

To begin with, Welding Techniques occupations were profiled through study of the occupation across Maldivian workplaces. Referred occupational profiling process led to the development of the Draft Occupational Standard.

Referred draft occupational standard is then submitted to a team of Technical Panel (TP) selected from the Maldivian workplaces to review the Welding Techniques Standard. The members of the TP provided technical support by recommending changes to the Welding Techniques Standard through incorporation of units of competencies and editing of the already included competency units. Purpose of this process was to develop a standard that reflects authentic work practices of Welding Techniques across the Maldives. Technical Panel meetings continued in reviewing the Welding Techniques Standard until the Final Draft is developed and agreed among all the participating members.

Final Draft of Welding Techniques Standard is then submitted to the Construction Employment Sector Council for endorsement and validation. A brief report on how the National Occupational Standard of Welding Techniques was compiled is also presented to the Construction Employment Sector Council together with the standard. Council members ensured that the industry needs, including all the core and common competencies presented in the Welding Techniques standard reflect the work practices of Welding Techniques occupations across the Maldives. With further editing, Welding Techniques Standard has been endorsed by the Council.

With the endorsement from the Construction Employment Sector Council, final document of the National Occupational Standard of Welding Techniques is submitted to Maldives Qualification Authority (MQA) for approval. With approval from MQA, the National Occupational Standard of Welding Techniques is published on TVETA website, to be used by training providers in delivering Welding Techniques programs across the Maldives.

Description of “Welding Techniques”

Welders play an important role within the construction sector of the Maldives as they undertake creation of all kinds of structures with varying sizes, levels of complexity, and uses. To complete projects from simple structures to large, complex ones like bridges, dams, and manufacturing plants, services of qualified and competent welders are of crucial need.

National Certificate-3 in “Welding Techniques” are mapped and organized in such a way to ensure those competent in the referred qualification will have the knowledge and skills to contribute positively to the local construction industry.

Job opportunities upon completion of “National Certificate III in Welding Techniques”

Upon successful completion of the National Certificate III in Welding Techniques students can work in the following jobs.

1. *Welder at Resort*
2. *Welder at construction company*
3. *Welder at welding workshop*
4. *Welding entrepreneur*

KEY FOR CODING

Coding Competency Standards and Related Materials

DESCRIPTION	REPRESENTED BY
Industry Sector as per ESC (Three letters)	Construction Sector (CON) Fisheries and Agriculture (FNA) Information, Communication and Technology (ICT) Transport Sector (TRN) Tourism Sector (TOU) Social Sector (SOC) Foundation (FOU)
Competency Standard	S
Occupation with in an industry sector	Two digits 01-99
Unit	U
Common Competency	CR
Core Competency	CM
Optional / Elective Competency	OP
Assessment Resources Materials	A
Learning Resources Materials	L
Curricular	C
Qualification	Q1, Q2 etc.
MNQF level of qualification	L1, L2, L3, L4 etc.
Version Number	V1, V2 etc.
Year of Last Review of standard, qualification	By “/” followed by two digits responding to the year of last review, example /20 for the year 2020

1. Endorsement Application for Qualification 01		
2. NATIONAL CERTIFICATE III IN WELDING TECHNIQUES		
3. Qualification code: CONS01Q1L3V2/20		Total Number of Credits: 62
4. Purpose of the qualification The holders of this qualification will be will be competent to work as a Welder. The level III qualification presented here will facilitate preparing students to the entry level workplace tasks and the competency units are mapped in such a way to fulfil the knowledge and skills requirements of National Certificate-3 of Welding Techniques.		
5. Regulations for the qualification		National Certificate III in Welding Techniques will be awarded to those who are competent in units 1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19
6. Schedule of Units		
Unit No	Unit Title	Code
Common Competencies		
01	Apply work ethics and professionalism	CONCM01V2/20
02	Provide effective customer care	CONCM02V2/20
03	Perform basic computer operations	CONCM03V2/20
Core Competencies		
04	Apply effective communication and teamwork skills	CONS01CR04V2/20
05	Apply mathematics and drawing skills	CONS01CR05V2/20
06	Perform basic workshop practice	CONS01CR06V2/20
07	Apply safe welding practices	CONS01CR07V2/20
08	Perform soldering and brazing	CONS01CR08V2/20
09	Perform basic oxy-acetylene welding in 1G-3G positions	CONS01CR09V2/20
10	Perform basic oxy-acetylene and plasma cutting	CONS01CR10V2/20
11	Perform Manual Arc Welding on mild steel plates in 1F, 2F, 3F, 1G, 2G Positions	CONS01CR11V2/20
12	Perform Manual Arc Welding on mild steel plates 3G, 4G and 4F Positions	CONS01CR12V2/20
13	Perform pipe bending, grinding, sanding and metal polishing	CONS01CR13V2/20
14	Perform welding of Mild Steel Pipes by Manual Arc Welding in All Positions	CONS01CR14V2/20
15	Perform welding of Stainless-Steel Plates on Pipes in Flat Positions	CONS01CR15V2/20
16	Plan and Prepare Estimates for Welding	CONS01CR16V2/20
17	Apply basic TIG and cast-iron welding skills	CONS01CR17V2/20
18	Undertake welding project using flat bars and pipe	CONS01CR18V2/20
19	Apply basic sheet-metals fabrication skills	CONS01CR19V2/20

7.Accreditation requirements	The training provider should place trainees in relevant industry or sector to provide the trainees the hands-on experience exposure related to this qualification.
8. Recommended sequencing of units	As appearing under the section 06

Units Details

#	Unit Title	Code	Level	No of credits	Credit Hours	Contact Hours
01	Apply work ethics and professionalism	CONCM01V2/20	III	03	30	15
02	Provide effective customer care	CONCM02V2/20	III	05	50	25
03	Perform basic computer operations	CONCM03V2/20	III	03	30	15
04	Apply effective communication and teamwork skills	CONS01CR04V2/20	III	03	30	15
05	Apply mathematics and drawing skills	CONS01CR05V2/20	III	03	30	15
06	Perform basic workshop practice	CONS01CR06V2/20	III	02	20	10
07	Apply safe welding practices	CONS01CR07V2/20	III	02	20	10
08	Perform soldering and brazing	CONS01CR08V2/20	III	03	30	15
09	Perform basic oxy-acetylene welding in 1G-3G positions	CONS01CR09V2/20	III	03	30	15
10	Perform basic oxy-acetylene and plasma cutting	CONS01CR10V2/20	III	03	30	15
11	Perform Manual Arc Welding on mild steel plates in 1F, 2F, 3F, 1G, 2G Positions	CONS01CR11V2/20	III	05	50	25
12	Perform Manual Arc Welding on mild steel plates 3G, 4G and 4F Positions	CONS01CR12V2/20	III	05	50	25
13	Perform pipe bending, grinding, sanding and metal polishing	CONS01CR13V2/20	III	03	30	15
14	Perform welding of Mild Steel Pipes by Manual Arc Welding in All Positions	CONS01CR14V2/20	III	03	30	15
15	Perform welding of Stainless-Steel Plates on Pipes in Flat Positions	CONS01CR15V2/20	III	03	30	15
16	Plan and Prepare Estimates for Welding	CONS01CR16V2/20	III	02	20	10
17	Apply basic TIG and cast-iron welding skills	CONS01CR17V2/20	III	03	30	15
18	Undertake welding project using flat bars and pipe	CONS01CR18V2/20	III	05	50	25
19	Apply basic sheet-metals fabrication skills	CONS01CR19V2/20	III	03	30	15
Total				62	620	310

Packaging of National Qualifications:

National Certificate III in Welding Techniques will be awarded to those who are competent in units
1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19

Qualification Code: CONS01Q1L3V2/20

COMPETENCY BASED ASSESSMENT

The final assessment of the National Competency-Based Programmes conducted by the Maldives National Skills Development Authority (MNSDA) is a competency-based assessment.

The Competency-Based Assessment ensures that the students' performance meets the requirements specified in the National Competency Standards (NCS). This assessment approach is designed to verify that graduates are job-ready and meet established occupational competency requirements within their respective fields.

Eligibility for Final Assessment

To be eligible for the final Competency-Based Assessment, students must fulfil the following conditions:

- achieve a **minimum of 80%** attendance
- deemed competent in each of the units of the programme in the pre-assessment

Competency-Based Assessment Process

Upon submission of the Pre-assessment report by the training provider, MNSDA will check for all the necessary supporting documents and conduct Competency-Based Assessment through a National Assessor registered with MNSDA. It is important to note that any trainer involved in the training process is **not permitted** to conduct the assessment to maintain impartiality and integrity of the process.

The final Competency-Based Assessment conducted by MNSDA includes both:

- **Theory:** Evaluating students' knowledge and understanding of key theoretical aspects of the competency.
- **Practical:** Assessing hands-on skills and application of knowledge in real-world or simulated environments.

Once the assessment is completed, the National Assessor will send the Competency-Based Assessment Report to MNSDA.

Competency Status Requirement

For certification to be granted, the student must be officially declared "**Competent**" in each of the units of the programme by the National Assessor.

Conclusion

Competency-Based Assessment is a critical component in ensuring the quality and credibility of technical and vocational skills-based training. By adhering to the outlined procedure, MNSDA upholds the standards required to certify students who are fully prepared to meet industry demands.