

NATIONAL OCCUPATIONAL STANDARDS FOR CONSTRUCTION/ BUILDING TRADES IN NIGERIA

CARPENTRY AND JOINERY

VOLUME 1



COUNCIL OF REGISTERED BUILDERS OF NIGERIA

CORBON

Established in 1989

COUNCIL OF REGISTERED BUILDERS OF NIGERIA
(ESTABLISHED BY Builders Registration Act CAPB13 LFN 2004)



**NATIONAL BOARD FOR
TECHNICAL EDUCATION**

PREFACE

The Construction industry occupies a very critical position in the Nigerian economic landscape. It is a major contributor to the nation's GDP and one of the biggest employer of labour particularly in the artisanal level. However, there is the prevalence of skills gap in the sector which has impacted on the quality of our buildings. The need to improve the quality of works produced by Nigerian artisans and craftsmen is the primary reason for the development of the National Occupational Standards (NOS) for Building Trades in Nigeria.

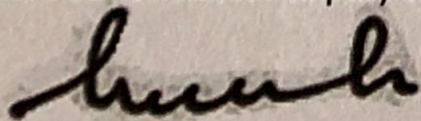
This NOS is a product of relentless efforts that started in 2014 when CORBON was assigned the role of a Sector Skills Council (SSC) under the National Vocational Qualification Framework (NVQF) programme being spearheaded by the National Board for Technical Education. Its primary objective is the promotion of skills development in the Building/ Construction Sector. The Council has since then continued to deliver on its mandates by working and collaborating with NBTE and other stakeholders in ensuring;

- " The Training of Assessors under the NVQF programme
- " Organising the conduct of training of master trainers
- " Development of Sector skills plan and maintaining skills inventory
- " Development of competency standards and Qualifications
- " Development of NOS for the appropriate skills, amongst others.

This maiden edition covers Seven (7) different trades in the industry, namely; Masonry, Carpentry, Electrical Installation, Painting and Decoration, Welding and Fabrication, Tiling, and Plumbing. This document will serve as a uniform standard training tool for up-skilling our Artisans and Craftsmen under the NVQF programme, as they are critical and indispensable in Building Production delivery. Moreover, these set of quality personnel are very scarce in the Nigerian market today.

It is my pleasure to state that we appreciate the effort and substantial contributions of all individuals and stakeholders who have made valuable contributions in the development of this NOS.

I am happy with the current efforts made so far because it is a measure of our readiness and preparedness to grapple with the task ahead of us to reposition the building / construction sector to play the key role in industrialising Nigeria.



Mr. Babatunde Raji Fashola, SAN
Minister for Power, Works and Housing
Federal Republic of Nigeria

FOREWORD

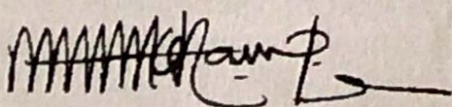
It is evident that young people out of employment, under employed, having left education too early or completed with inadequate skills, are everywhere in Nigeria. These are at high risk of economic marginalization and social exclusion. Upgrading their skills is essential in helping them to enter, or return to the labour market or become entrepreneurs. So the challenge is hugely depended on how Nigeria can transform this youthful population into highly skilled and competent citizens. A major part of the responsibility for preparing such a workforce rests on our Nation's education and training systems. It is for this reason that National Board for Technical Education (NBTE) has been spearheading skills development programmes in Nigeria through the National Vocational Qualifications Framework (NVQF) in line with the practice adopted by many countries.

NVQF is a system for the development, classification and recognition of skills, knowledge and competencies acquired by individuals, irrespective of where and how the training or skill was acquired. The system gives a clear statement of what the learner must know or be able to do whether the learning took place in a classroom, on-the-job, or less formally. The framework is the instrument through which National Vocational Qualifications (NVQs) are delivered. The NVQs are based on National Occupational Standards (NOS) dictated by industry bodies or employers. At the moment in Nigeria, different industries, organisations and companies have their standards which do not attract national certification and recognition. However, with the coming of CORBON as the sector skills council for the building industry, it has harmonised and standardised learning outcomes and competencies to be attained irrespective of how and where the learning took place. The outcome is what we have in this document as the classified NOS.

National Occupational Standards (NOS) specify the standard of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding they need to meet that standard consistently. Essentially NOS are benchmarks of good practice. Each NOS defines one key function in a job role and describes functions, standards of performance and knowledge/understanding.

The preparation and maintenance of the NOS are tasks which cannot be completed once and for all in our expanding economy, changes in techniques and scientific developments are continually introducing new job opportunities requiring new occupational skills in the new industrial processes the preparation and the maintenance work will, therefore, be a continuous process. I therefore appeal to all stakeholders to partner and support CORBON achieve this laudable objectives. It is an essential requirement for the production of competent, flexible and competitive workforce in Nigeria.

I call on other regulatory agencies and the organised Private Sector to partner with NBTE, as they actually have the leading role, and stand to derive the greatest benefit from a successful NVQF in Nigeria.



Dr. M.A. Kazaure, mni
Executive Secretary, NBTE



CARPENTRY AND JOINERY

Level 1

Carpentry and joinery are two special trades in construction woodworking. Carpentry entails the assembly of sawn Timber, chiefly for structural timber works. Joinery, on the other hand, involves the use of planed Timber to produce finished products such as doors, windows, frames of doors and windows, furniture, wooden floors, walls, stairs, etc. Carpentry works include formworks, falseworks, installation of wooden parts of buildings, etc. Carpentry processes take place on-site. In contrast, joinery involves joining smoothened Timber into building components in the workshop.

The National Occupational Standards (NOS) For Building Construction Trades in Nigeria provide training criteria and performance benchmarks for various trades in the Nigerian construction industry. The overarching aim is to equip trainees with requisite skills and knowledge in any specific construction trade of choice. These trades are further divided into levels of qualifications, known as the Nigerian National Skills Qualification (NSQ) Levels.

For the Carpentry and Joinery, three qualification levels are offered. The Level 1 qualification (NSQ Level 1) for the Carpentry and joinery trade is made up of fourteen (14) units, with a credit value of fifteen (15) and Guided Learning Hours (GLH) of 150. The Candidate must complete a minimum of fifteen (15) credits. Twelve (12) credits must be achieved from the mandatory units, while three (3) credit from the optional units. Evidence requirements for this level are Direct Observation (DO), Question and Answers (QA), Professional Discussion (PD) and Witness Testimony (WT).

A summary of the NSQ Level 1 qualification details are presented in the table below.

LEVEL 1: CARPENTRY AND JOINERY					
UNIT	Credit Value	GLH	UNIT REFERENCE	UNIT TITLE	REMARK
1	1	10	CON/CJ/001/L1	Health and Safety in Carpentry and joinery work environment	Mandatory
2	1	10	CON/CJ/002/L1	Communication system in a work environment	Mandatory
3	1	10	CON/TL/003/L1	Team Work	Mandatory
4	1	10	CON/MS/001/L1	Site Clearance and Excavation	Optional
5	2	20	CON/CJ/003/L1	Identification and use of basic tools and equipment	Mandatory



6	2	20	CON/CJ/004/L1	Identification and use of carpentry and joinery materials	Mandatory
7	3	30	CON/CJ/005/L1	Materials handling and storage	Mandatory
8	3	30	CON/CJ/006/L1	Sizing, Cutting and Drilling of Timber/Plywood and making joints.	Mandatory
9	2	20	CON/CJ/007/L1	Erect and dismantle different types of scaffolding	Optional
10	4	40	CON/CJ/009/L 1	Install frames, linings, and side hung doors	Optional
11	2	20	CON/CJ/10/L1	Sizing, Cutting and Drilling of Timber/Plywood and making joints.	Optional
12	2	20	CON/CJ/011/L 1	Erect and strike Formwork in foundation to include columns, lintels, column bases, floor slabs and beams.	Optional
13	5	50	CON/CJ/012/L 1	Erect and dismantle access/working platform	Optional
14	3	30	CON/TL/006/L1	Surface preparation for Tiling	Optional
QUALIFICATION:			Carpentry and Joinery		

At the end of the NSQ Level 1 for Carpentry and Joinery, the Learner should be able to:

1. Understand and demonstrate safe work practices and instruction
2. Recognise safety hazards and risks
3. Recognise the various types of Personal Protective Equipment (PPE) relevant to the task being executed
4. Take appropriate actions in case of personal accidents/injuries.
5. Carry out lifting, loading/off-loading and stacking of materials appropriately.
6. Use a non-complex communication system in a work environment.
7. Develop the ability to identify the source of information in a work environment.
8. Demonstrate the use of various communication means in a work environment.
9. Understanding of essential hand tools used in joinery and carpentry work.
10. Understanding of portable power tools and equipment used in Carpentry and joinery.
11. Recognise the various types of timbers
12. Recognise various plywood (manufacture boards)
13. Understanding of timber bonding materials



14. Understanding of wood finishes
15. Handling various materials processes
16. Recognise the effects of gaseous, liquid and solid materials on self and work environment.
17. Understanding of timber/manufactured board and their preparation.
18. Understanding of the various wood joints
19. Understanding of methods and procedure in joint construction and assembling
20. Correct drilling operation on a simple framework.



CARPENTRY AND JOINERY

Level 2

Carpentry involves installation or fixing of Timber as either a structural member or a system that supports or contains structural members, for a specific duration, before dismantling. Carpentry further covers the installation of joinery products, such as fixing of frames of doors and windows, installation of building walls, floors, stairs, etc., and fitting of wardrobes, cupboards, bookshelves, etc.

The Level 2 qualification (NSQ Level 2) for Carpentry and joinery is made up of fourteen (14) units, with a credit value of twenty-six (26) and Guided Learning Hours of 260. To have the level 2 qualification in Carpentry and Joinery, the Candidate is expected to undertake and achieve the 18 credits of the mandatory units and 8 credits from optional units. Evidence requirements for this level are Direct Observation (DO), Question and Answers (QA), Witness Testimony (WT), Work Product (WP), Personal Statement (reflective account) and Recognition of Prior Knowledge (RPK).

A summary of the National Vocational Qualification (NVQ) Level 2 Qualification details are presented in the table below.

LEVEL 2: CARPENTRY AND JOINERY					
UNIT	Credit Value	GLH	UNIT REFERENCE	UNIT TITLE	REMARKS
UNIT 01	3	30	CON/CJ/001/L2	Health and Safety in Carpentry and Joinery Work Environment.	Mandatory
UNIT 02	1	10	CON/CJ/002/L2	Communication System in a Work Environment	Mandatory
UNIT 03	5	50	CON/CJ/013/L2	Teamwork	Optional
UNIT 04	2	20	CON/CJ/003/L2	Identification and Use of Tools and Equipment	Mandatory
UNIT 05	2	20	CON/CJ/008/L2	Erect Timber Walls and Floors	Optional
UNIT 06		40	CON/CJ/004/L2	Materials Handling and Storage	Mandatory
UNIT 07	2	20	CON/MS/001/L2	Site Clearance and Excavation	Mandatory
UNIT 08	2	20	CON/CJ/007/L2	Erect and Strike Formwork in foundation to include Columns, Lintels, Column Bases, Floor slabs and Beams.	Optional
UNIT 09	2	20	CON/CJ/009/L2	Sizing, Cutting and Drilling of Timber/Plywood and Making Joints.	Optional
UNIT 10	2	20	CON/CJ/010/L2	Erect and Dismantle Different Types of Scaffolding	Mandatory



UNIT 11	4	40	CON/CJ/010/L2	Erect and Dismantle access/working platform	Mandatory
UNIT 12	5	50	CON/CJ/012/L2	Erect Timber Walls and Floors	Optional
UNIT 13	4	40	CON/CJ/012/L2	Install frames, linings, and slide hung doors	Optional
UNIT 14	5	50	EPS/SO/004/L3	Information and Communication Technology (ICT)	Optional
UNIT 15	1	24	CON/TL/004/L3	Lay and Repair Tiles	Optional
UNIT 16		12	CON/TL/007/L3	Tiling Curved Surface	Optional

At the end of the NVQ Level 2, the Learner should be able to:

1. Install frames, linings and side hung doors.
2. Identify Tools requirement for the installation of frames, linings and side hung doors.
3. Identity Types of PPE relevant to executed in a work environment.
4. Understand Safe work practices
5. Source information in a work environment relating to the task.
6. Understand the effects of gaseous, powder, solids and liquids on self and the work
7. Understand materials handling and storage.
8. Identify chemicals in the work environment.
9. Identify bonding materials used in Carpentry and joinery.
10. Identify various types of manufactured boards.
11. Identify the range of materials used in Carpentry and joinery.
12. Understand health and safety in the work environment in handling materials and storage.
13. Understand the use of basic hand tools effectively in Carpentry and joinery.
14. Identify the use of various power tools and equipment in carpentry and joinery work.
15. Maintain and deploy communication equipment
16. Source information in a work environment.
17. Understand the complex communication system in a work environment
18. Communicate clearly to the assistant carpenter on H&S.
19. Identify various types of PPE in the work environment.
20. Identify safety hazards and risks in the work environment.
21. Understand Work practices and instruction in the work environment.



CARPENTRY AND JOINERY

Level 3

A trained individual in Carpentry is known as a Carpenter; whereas, a specialist in joinery is called a Joiner.

Training to become either a Carpenter or a Joiner entails learning and passing various tests on various materials, machines, processes, safe practice and governing laws guiding the practice of construction trades in Nigeria.

The Level 3 qualification (NSQ / QCF Level 3) for Carpentry and joinery is made up of twenty-one (21) units, with a credit value of thirty-Eight (38) and Guided Learning Hours of three hundred and Eighty (280). Being a 38-credit qualification, the Candidate for the Level 3 Carpentry and Joinery is expected to undertake and achieve 27 credits from the mandatory units and 11 credits from the optional units, to have Level 3 qualification.

Evidence requirements for this level are Direct Observation (DO), Question and Answers (QA), Witness Testimony (WT), Work Product (WP), Personal Statement (reflective account), Assignment / Case study and Recognition of Prior Learning (RPL). A summary of the National Vocational Qualification (NSQ / QCF) Level 2 qualification details are presented in the table below.

LEVEL 3: CARPENTRY AND JOINERY					
UNIT	Credit Value	GLH	UNIT REFERENCE	UNIT TITLE	REMARK
UNIT:01	3	30	CON/CJ/001/L 3	Health and Safety in Carpentry and joinery work environment	Mandatory
UNIT: 02	2	20	CON/CJ/002/L 3	Communication system in a work environment	Mandatory
UNIT: 03	2	20	CON/CJ/003/L 3	Teamwork	Mandatory
UNIT: 04	2	20	CON/CJ/004/L 3	Identification and use of hand tools and equipment in Carpentry and joinery work environment	Mandatory
UNIT: 05	4	40	CON/CJ/005/L 3	Erect timber walls and floors	Mandatory
UNIT: 06	2	20	CON/CJ/006/L 3	Identification and use of Carpentry and Joinery Materials	Mandatory
UNIT: 07	3	30	CON/CJ/007/L 3	Materials handling and storage	Mandatory
UNIT: 08	2	20	CON/CJ/001/L2	Site Clearance and Excavation	Optional
UNIT: 09	6	60	CON/CJ/009/L 3	Erect and strike Formwork in foundation to include columns, lintels, column etc.	Optional
UNIT: 10	4	40	CON/CJ/008/L 1	Sizing, Cutting and Drilling of Timber/Plywood Joints.	Optional



UNIT: 11	5	50	CON/CJ/009/L 3	Erect and dismantle different types of scaffolding	Optional
UNIT:12	3	30	CON/CJ/008/L 3	Erect and dismantle access/working platform	Mandatory
UNIT: 13	5	50	CON/CJ/010/L 3	Construction of roofs and ceiling	Mandatory
UNIT: 14	3	30	EPS/SO/004/L3	Information and Communication Technology (ICT)	Mandatory
UNIT: 15	5	50	CON/CJ/014/L 3	Install frames, linings, and side hung doors	Optional
UNIT: 16	4	40	CON/CJ/006/L 3	Produce edge treatment finishes to wood and wood-based product	Optional
UNIT:17	5	50	CON/CJ/004/L 4	Business study	Optional
UNIT:18	3	30	CON/CJ/005/L 1	Mix preparation	Optional
UNIT: 19	3	30	CON/CJ/006/L 1	Surface preparation	Optional
UNIT:20	3	30	CON/CJ/0010/L3	Math skill in Tiling	Optional
UNIT:21	3	30	CON/CJ/0010/L3	Project planning	Optional

At the end of the Units within this level, the Learner should be able to:

1. Demonstrate and apply knowledge and understanding of health and safety work
2. Practices in the work environment
3. Relate knowledge and understanding of health and safety & PPE
4. Relate knowledge and understanding of safe methods and procedures in lifting and stacking of materials in Carpentry and joinery works environment
5. Use of complex communication system in a work environment
6. Locate the source of information in a work environment
7. Use of various communication means in a work environment
8. Relate and apply knowledge and understanding of basic hand tools use in Carpentry and joinery work environment
9. Relate knowledge and understanding of portable power hand tools use in Carpentry and joinery works environment
10. Demonstrate and apply knowledge of fixed woodworking machines
11. Use in the Carpentry and Joinery work environment
12. Interpret Information
13. Understand safe working practices
14. Meet the contract specifications
15. Meet Allocated time (Guided Learning Hours)
16. Use basic hand tools in Carpentry and joinery in a work environment
17. Use portable power hand tools in Carpentry and joinery in a work environment
18. Fix woodworking machines in use in Carpentry and joinery work environment
19. Identify types of Timber in use in Carpentry and Joinery in a work environment



20. Identify various manufactured boards
21. Identify wood bonding/fastening materials and their uses in Carpentry and joinery in a work environment
22. Use wood finishes
23. Understand Lifting and stacking Techniques
24. Understand Lifting and handling gaseous, liquid and solid materials
25. Construct different type of roofs

On satisfying completion of the mandatory units and any of the optional units in carpentry and joinery works, this qualification is for a Senior Carpenter.

