

National Occupational Standards

Sector: Building and Construction

Occupation: Stone Mason

MQF Level: 4

Units:

- SBL401: Health and safety during work practices
- SBL402: Identification of systems, equipment, and components
- SBL403: Reading of drawings and calculations
- SBL404: Stone Mason

Last updated: 10/11/2021

SBL 401: Health and safety during work practices

This unit is about being able to use safe procedures and safe work practices. The persons carrying out this work must possess the necessary knowledge and skills to ensure that their actions do not create health and safety risks to themselves and others, and to identify risks and hazards associated with the working environment, tools, equipment, materials, and substances used.

Performance Criteria

The candidate must have the necessary knowledge and skills to supervise and ensure that:

1. Working practices are carried out safely to prevent hazards and to ensure the safety of oneself, workers, and members of the public.
2. Safe working practices are carried out when using appropriate equipment and materials to prevent damages to work areas and injuries to oneself and 3rd parties.
3. The erection and the use and dismantling of simple access platforms is carried out safely.
4. Safety barriers and adequate edge protection around a work environment are set up to protect colleagues and members of the public.
5. Protective clothing and safety equipment is used according to specifications issued by manufacturers and know the whereabouts of first aid equipment.
6. Materials hazardous to health are used, handled, and stored in a safe manner and with proper labelling.
7. The safety officer or any other competent person is assisted in carrying out a risk assessment to cover the job assigned and the working area and fully understand the content of all relevant reports.
8. Temporary or fixed electrical switch gear, systems isolating valves are located and switched-off as instructed in the health and safety procedures.
9. The site is always not accessible to unauthorized persons and according to standard procedures.

Required Knowledge

The Level 4 Stone Mason must know, demonstrate, and explain:

1. The roles and responsibilities of themselves and others under the Health and Safety Act.
2. The health and safety risks associated with their role which includes tools, materials and equipment used and working practices and procedures.
3. The potential hazardous materials commonly found at the workplace.
4. The procedures for dealing with potential hazardous material in the place of work.
5. The health concerns associated with the workplace and safe practices when carrying out work.
6. The potential hazards at the place of work (such as electricity, slippery and uneven surfaces, dust, handling and transporting, contaminants and irritants, fire, heights, improper use of tools and equipment).
7. The importance of being alert to the presence of hazards in the place of work.

Building and Construction: Stone Mason – MQF Level 4

8. The responsible persons to whom to report health and safety matters or any other occurring hazards.
9. The emergency procedures in the place of work.
10. The first aid and fire-fighting facilities that exist within the work area.
11. The best way to make use of barricades, industrial hurdles, and warning signs to make areas clearly marked out of bounds.
12. The safety procedures when using scaffold platforms (note: knowledge on how to use a scaffold safely is not limited to height. The limitation is only when erecting, dismantling and taking responsibility of the scaffold).
13. The safety requirements and regulations regarding scaffolds higher than 2m. (certification and weekly checks by competent persons).
14. The necessary safety precautions including the use of protective clothing and equipment for a range of applications.
15. The methods used for protecting customers' property as well as 3rd party property.
16. When and how it is required to isolate existing services (electricity and domestic water services from the main water supply).
17. Any toxic effect from materials commonly used at construction sites.
18. The preventive and remedial actions to be taken in the case of exposure to materials hazardous to health.

Required Skills

The Level 4 Stone Mason must be able to:

1. Identify which health and safety procedures are relevant to the working environment.
2. Seek competent person's assistance when help is needed.
3. Ensure compliance with duties and obligations as defined by the Occupational Health and Safety Act 2000 and recent amendments.
4. Follow workplace policies and supervisors' instructions for the safe use and maintenance of tools and equipment.
5. Control health and safety hazards within the job responsibility.
6. Report to relevant persons, any hazards which may present risk.
7. Follow correct procedures in the event of injuries to themselves or others.
8. Take remedial action where work methods are not in line with control measures noted and identified from risk assessment.
9. Adhere to work production and installation processes as agreed with the supervisor.
10. Apply the necessary skills to erect, use and dismantle access equipment (at height less than 2m).
11. Read, interpret, and install warning signs and set up safety barriers and edge protection around working areas.
12. Equip oneself with the appropriate protective clothing and safety equipment for all specific tasks.
13. Use, label, and store materials hazardous to health in a safe manner.
14. Monitor the workplace and maintain good housekeeping whilst keeping it free from hazards.
15. Where applicable, make sure that all existing services (water and electricity) have been isolated prior to commencement of work.
16. Communicate information regarding unfamiliar and unpredictable situations to colleagues and supervisors.
17. Advocate appropriate health and safety procedures.

SBL 402: Identification of systems, equipment, and components

This unit is about identifying the different materials for specific applications based on their technical properties and identifying direct and indirect environmental impacts.

Performance Criteria

The candidate must have the necessary knowledge and skills to supervise and ensure that:

1. Different types of masonry units and their uses are distinguished based on technical properties and characteristics.
2. Damp proof course and damp-proof membrane are distinguished based on technical specifications.
3. Materials for mortar joints and the required ratio of mixes are distinguished.
4. Different admixtures used in mixing mortar and concrete mixes are distinguished.
5. A range of metal wall-ties are distinguished when applicable.
6. A range of insulating material are distinguished when applicable.
7. Different materials and mixes used for the infilling of walls are distinguished.
8. Different types of electric machinery required to properly execute the job are distinguished.
9. The application of different procedures to minimize off-cuts and construction material waste are distinguished, and construction waste is disposed as stipulated in the environmental protection act.
10. Different roof structures are distinguished with emphasis on traditional ones.

Required Knowledge

The Level 4 Stone Mason must know, demonstrate, and explain:

1. The range of materials, products, and procedures applicable to the relevant work and their benefits.
2. Horizontal, vertical, and inclined planes and the use of levelling and aligning equipment for particular situations.
3. The different mortar mixes used as a binding layer between the different masonry units.
4. Methods and techniques to minimise wastage and to minimize environmental hazards.
5. Routine checking procedures for accuracy checks of levelling instruments.
6. Workplace storage codes and methods.

Required Skills

The Level 4 Stone Mason must be able to:

1. Distinguish between and apply the different types of materials, products, methods, and procedures applicable to limestone or concrete block laying.
2. Distinguish between and apply a range of damp proof course and damp-proof membrane products.
3. Distinguish between and apply a range of graded mortars, binding layer mortar mixes and appropriate industrial sieves.
4. Distinguish between the different types of electrical equipment for limestone or hollow concrete blocks and any other building materials.
5. Apply procedures to minimise off-cuts and construction material waste and dispose construction waste as stipulated in the environmental protection act.

SBL 403: Reading of drawings and calculations

This unit is about understanding and applying dimensions from drawings and calculating quantities in the preparation, costing, and estimation.

Performance Criteria

The candidate must have the necessary knowledge and skills to supervise and ensure that:

1. Levelling tools and equipment are selected, checked for accuracy, and used.
2. Construction and civil engineering projects site and building drawings are read and interpreted.
3. Sections and views as used in construction and building engineering drawings are read and interpreted.
4. Plans and specifications to select type of masonry units and other materials are read and interpreted.
5. Plans to establish important building datum grids and levels are read and interpreted.
6. Quantities of masonry units and other materials required are calculated to meet work schedules and workload.
7. The quantity of consumables required to meet work schedules and workload are calculated.
8. Deviations and misalignments against tolerances given are checked and investigated.

Required Knowledge

The Level 4 Stone Mason must know, demonstrate, and explain:

1. Knowledge on required permits and local statutory obligations for the proper execution of works.
2. Compilations of overall linear dimensions from drawings.
3. Calculations including those involving quantities and costs of materials.
4. Drawing annotations used for levels, gradients, and bearings.
5. The tools and equipment to be used to set out alignment.
6. The correct procedure for setting out work systems.
7. The scale working drawings from plans.
8. The spirit levels available specifically designed for building of walls on inclined planes.
9. The techniques to produce manual simplified workshop drawings.
10. The metric and imperial units of linear measurements, areas, force, pressure, and fluid measurements.
11. Check and investigate deviations and misalignments against tolerances given.
12. The calculation of ratio and percentages for mortar mixes.
13. Instructions taken from drawings to construct different types of arches of different geometry.

Required Skills

The Level 4 Stone Mason must be able to:

1. Translate drawing details to setting out of work where necessary.
2. Check spirit levels and plumpness for accuracy.
3. Translate quality specifications on actual work.
4. Calculate quantity of masonry units and other materials required for a job.
5. Take-off quantities from drawing.

Building and Construction: Stone Mason – MQF Level 4

6. Measure and comprehend calculations using metric and imperial units.
7. Read and show awareness of annotated building drawings.
8. Keep record of any variations and deviation from plans.
9. Convert between units of measurements: meters; centimetres and millimetres including imperial measurements: inches, feet, and yards.
10. Work with tradespersons and professionals to comply with sanitary and building laws of Malta on a given building project.

SBL 404: Practices for building of Stone Masonry units

This Unit is about using tools and equipment to construct walls and roof structures using masonry units including traditional methods of construction.

Performance Criteria

The candidate must have the necessary knowledge and skills to supervise and ensure that:

1. Clean, check, maintain and store plant, tools, and equipment according to manufacturer recommendations and workplace practices.
2. Teams are organised and lead to dispose unwanted materials according to project environmental policy and keep areas cleared from unwanted materials.
3. Masonry units are measured, marked, and cut to size with appropriate equipment.
4. Masonry units are laid to form single and double walls with specified ties as required.
5. Masonry units are laid to construct columns.
6. Datum grid lines and levels to lay masonry units are set out within specified tolerance.
7. 'Joint-finish' is formed as limestone units laying courses progress to meet doors and windows opening tolerances.
8. Access working platforms are assembled and used appropriately.
9. Masonry units are laid to form tall walls to meet specified tolerance such as joint alignment, level alignment, vertical alignment at corners and within bays, and lateral alignment.
10. The spirit level, plumb line, piano wire ('lenza'), straight edge and builders square ('skwerra') are used to lay masonry units within tolerance specified.
11. Shafts for skewed misalignments are checked.
12. Reinforced steel bars in bricks as given instructions are installed where applicable.
13. Construction methods and techniques associated with stereotomy are known.
14. Methods, techniques, and tools associated with stone dressing are known.
15. The learner will be able to shore beams and lintols.
16. The learner will be able to replace masonry elements such as roof slabs, lintels, course mouldings in a door jamb amongst others.
17. The learner will be able to carry out tasks of removing and replacing stones and bricks in a restoration project.
18. The learner will be able to draw and prepare any type of joints for numerous types of curved and flat arches, stairwells, and similar items.

Required Knowledge

The Level 4 Stone Mason must know, demonstrate, and explain:

1. Tools and equipment required to perform necessary works by a Stone Mason.
2. The methods of use and maintenance of equipment.
3. The types of masonry units used locally.
4. The use of the various types of equipment.

Required Skills

The Level 4 Stone Mason must be able to:

1. Confirm that materials, tools, and equipment required are fit for their intended purpose.
2. Identify, use, clean and store the basic hand tools.
3. Calculate required quantities at various intervals to confirm orders.
4. Read and interpret manufacturer instructions to lay DPC and DPM materials.

Building and Construction: Stone Mason – MQF Level 4

5. Control the quality and accuracy of cuts with power tools and equipment.
6. Check the accuracy of limestone or hollow concrete block laying methods.
7. Read, interpret, and convert metric linear dimensions to meters, cm and mm and imperial dimensions feet and inches.
8. Read, interpret and project 90/45 degree angular measurements.
9. Identify datum lines and establish procedures to check shaft/ internal yards/ rooms for skewed misalignment as work progress.
10. Use scientific calculators and digital measuring instruments to measure linear and angular measurements.
11. Communicate with other builders, steel fixers and supervisors.