National Occupational Standards

Sector: Building and Construction

Occupation: Roofer Assistant

MQF Level: 3

Units:

WRA301: Transport and Handling of Goods
WRA302: Measurements and Maths
WRA303: Materials and Technical Requirements in Waterproofing
WRA304: Health and Safety: Security During Work Practices

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Introduction

Waterproofing plays an important role in the building and construction industry, that of producing a sealed and healthy environment inside our houses. Waterproofing is fundamental during the early and late stages of construction in order to prevent rising damp and to protect and prevent water intake from the sides and the roof. Over 80% of structural damages are in one way or another linked to water intake. In most cases, this is due to bad waterproofing systems adopted, or lack of proper waterproofing planning. Waterproofing is the process of making something resistant to water and making it remain unaffected by it and the weather elements in general. It is critical in keeping not just the roof watertight, but the whole building.

There are many waterproofing systems available in the marketplace, and the installer's key to success is to learn about their abilities and limitations. In most cases, when lack of knowledge prevails, the decisions taken are purely based on price, usually the cheaper the better. This produces a series of repercussions as many outdated solutions are just not suitable anymore. They do not withstand today's modern buildings exigencies.

Some people walk in the rain, others just get wet. This famous phrase describes precisely the difference between a good and a bad roofer. We know it all… and we have been doing it this way for many, many years… This classic phrase is what we usually hear from many self-thought installers. The fact that a person is doing the same thing for many years does not qualify it as the right thing to do or the right waterproofing solution. Many times, the proposed and adopted solutions are not what are actually required to properly waterproof certain structures. This is very bad when one considers the large-scale damage caused by seen or unseen water penetration, not to mention the high costs involved to replace a failed waterproofing system. The "one product fits all" is nothing but a fairy tale when it comes to this line of business.

Water is life and we simply cannot live without it. Yet many people hate rainy days. This naked truth is always related to a particular reason, usually because it disrupts our daily plans or occasionally a bad water infiltration experience. A good protective waterproofing system that suits the exigencies of our island must withstand the intensive heat caused by UV Rays, and must also be resistant to traffic and stagnation; all this combined with the right elasticity to produce enough crack bridging to sustain any structural movements. Materials alone cannot guarantee success.

The result of a good waterproofing system also depends on a good support preparation. Materials cannot speak; their only way to let you know that there is something wrong with their application or the product itself is by letting you down when you need them the most, and this happens most of the time. Acid rain also plays an important factor when it comes to waterproofing. The pollutants that form the acid rain are principally sulphur dioxide and nitrogen oxides; both are released from the combustion of fossil fuels like coal and oil. Acid rain is precipitation that is much more acidic than normal rainfall. Other than having

detrimental effects on animal and plant life, acid rain can also cause considerable damage to certain materials, including the waterproofing systems that are in use today.

All the above mentioned is just but a fraction of what needs to be taken into consideration when installing a waterproofing system. A lot of preparation is required in this line of trade, and the scope of these occupational standards is to teach, as best as possible, how to implement a diversity of waterproofing solutions, thus helping the installer to provide efficient waterproofing solutions that will help them achieve the best results. These occupational standards are divided into three different categories, or grades, and they reflect the ability and experience of the waterproofing installer.

The first level is Grade 3, This grade comprises assistants and/or apprentices, who are not able to work unattended. The second level is Grade 4. This grade comprises sprayers of hot spray expanding insulation foam. The third level is also at Grade 4. This level recognises and certifies experienced installers that are able to work unattended and can produce a complete variety of certified waterproofing systems.

This introduction may be concluded with some words of advice. Knowledge is the key to success; the more you know the better. Investing in knowledge is not a waste of time, it is the secret of all successful waterproofing installers. Always learn from your mistakes, but most of all, learn from other roofer's mistakes. This way you will enrich your knowledge portfolio without going through the same unwanted situations.

Finally, when in doubt, always seek guidance from the right people, if you want to get the right solution.

WRA301: Transport and Handling of Goods
Proper handling and transport of tools and materials in a correct and safe way. **Performance Criteria** The candidate must have the necessary knowledge and skills to: 1. Communicate effectively; 2. Perform duties with manual dexterity; 3. Handle tools and machinery in a basic manner; 4. Follow instructions; 5. Evidence basic literacy skills; 6. Complete simple arithmetic calculations; 7. Understand basic health and safety regulations; 8. Use protective clothing to carry out work duties; 9. Observe work and be able to provide all that is required to produce a good waterproofing job.
Required Knowledge
The Level 3 Roofer Assistant must know and explain: 1. How to evaluate identified project tasks and identify corresponding activities required to carry them out; 2. How to read and interpret instructions according to method statements; 3. How to determine and interpret the sequence of events required to carry out the assigned tasks; 4. How to observe all health and safety procedures which may include the removal of hazards and the erection of temporary perimeter walls; 5. Why they must not venture around the place of work before any protective barriers and other protections are in place; 6. Why they must wear and use all required protective equipment when on site (safety shoes, helmets, protective eyewear, gloves, and clothing). Materials: 7. That cans cannot be opened in closed and unventilated areas without protective respiratory masks; 8. That solvent-based products cannot be places or stored in areas subject to direct sunlight or elevated temperatures; 9. That solvent-based materials are highly flammable, and that cans must be intact and opened away from heat sources or flames; 10. That solvent-based materials must be stored away before implementing the torch weld bitumen membrane.

Required Skills
The Level 3 Roofer Assistant must be able to: 1. Transport and handle goods like machinery, liquid primers and membranes cans, bitumen rolls, and basic hand-held tools; 2. Carry all solvent-based primers and membranes with the use of appropriate protective clothing and store these at temperatures below 25°degrees; 3. Handle and store bitumen carpet rolls in an upright position; 4. Carry goods and other materials in a safe way avoiding heavy loads and long distances.

WRA302: Measurements and Maths
The Metric system is the most common and widely used system around the world. Measurements are important to determine the size, capacity, or quantity of an area. Candidates must have a basic knowledge of this. **Performance Criteria** The candidate must have the necessary knowledge and skills to: 1. Communicate effectively; 2. Perform duties with manual dexterity; 3. Handle tools and machinery in a basic manner; 4. Follow instructions; 5. Evidence basic literacy skills; 6. Complete simple arithmetic calculations; 7. Understand basic health and safety regulations; 8. Use protective clothing to carry out work duties; 9. Observe work and be able to provide all that is required to produce a good waterproofing job.
Required Knowledge
The Level 3 Roofer Assistant must know and explain: 1. Their basic knowledge of mathematics (adding, subtraction, multiplication, and division); 2. Their knowledge of measurements in metres and centimetres; 3. How to measure and quantify the square metres of the surface area that requires waterproofing services; 4. Their knowledge of product consumptions; 5. How to establish how much material is required for the job.
Required Skills
The Level 3 Roofer Assistant must be able to: 1. Take measurements prior to any work being carried out.

WRA303: Materials and Technical Requirements in Waterproofing
This unit covers the basic knowledge that Roofer Assistants must know, along with the basic requirements related to properly carrying out assisting work. **Performance Criteria** The candidate must have the necessary knowledge and skills to: 1. Communicate effectively; 2. Perform duties with manual dexterity; 3. Handle tools and machinery in a basic manner; 4. Follow instructions; 5. Evidence basic literacy skills; 6. Complete simple arithmetic calculations; 7. Understand basic health and safety regulations; 8. Use protective clothing to carry out work duties; 9. Observe work and be able to provide all that is required to produce a good waterproofing job.
Required Knowledge
The Level 3 Roofer Assistant must know and explain: 1. The different products used in waterproofing services; 2. The difference between water-based and solvent-based liquid membranes; 3. How to use rollers and brushes; 4. How to identify the various types of membranes (cementitious, bitumen, resin, plastics) and how to use them; 5. How to identify hazards in the place of work; 6. The risks of handling the torch flame; 7. How to handle bitumen rolls; 8. Relevant health and safety procedures.
Required Skills
The Level 3 Roofer Assistant must be able to: 1. Apply water-based and solvent-based liquid membranes by roller or brush; 2. Apply primers before any waterproofing application; 3. Apply primers over a clean and cohesive surface; 4. Observe the time frame of primers; Water-based and Solvent-based Liquid Resin Membranes: 5. Apply the correct amount of product in coats; 6. Implement a reinforcement mesh between coats;

Bitumen Carpet Membranes:

7. Assist in handling the torch flame and weld the bitumen carpet rolls;
8. Transport and store the bitumen rolls in an upright position;
9. Work according to different application modalities.

WRA304: Health and Safety: Security During Work Practices
This unit covers the basic health and safety knowledge that Roofer Assistants must know, together with secure working practices. **Performance Criteria** The candidate must have the necessary knowledge and skills to: 1. Communicate effectively; 2. Perform duties with manual dexterity; 3. Handle tools and machinery in a basic manner; 4. Follow instructions; 5. Evidence basic literacy skills; 6. Complete simple arithmetic calculations; 7. Understand basic health and safety regulations; 8. Use protective clothing to carry out work duties; 9. Observe work and be able to provide all that is required to produce a good waterproofing job.
Required Knowledge
The Level 3 Roofer Assistant must know and explain: 1. How to interpret knowledge on health and safety aspects; 2. How to read and interpret warning and safety signs; 3. How to identify potential hazards; 4. How to take necessary actions to mitigate the risks;
Required Skills
The Level 3 Roofer Assistant must be able to: 1. Take the necessary actions and follow procedures in case of accident, injury, or ill health