

National Occupational Standards

Sector: Building and Construction

Occupation: Residential Aluminium Fabricator

MQF Level: 3

Units:

- RAF301: Apply Occupational Health and Safety during Work-Practices
- RAF302: Identify systems, equipment and components
- RAF303: Reading of drawings and calculations
- RAF304: Fabricate and install aluminium residential doors and windows

RAF301: Apply Occupational 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, identify risks and hazards associated within the working environment, tools and equipment and materials and substances used.

Performance Criteria

The candidate must have the necessary knowledge and skills to:

1. Carry out safe working practices to prevent hazards and to ensure the safety of oneself, workers and members of the public.
2. Carry out safe working practices when using appropriate equipment and materials to prevent damages to work areas and injuries to oneself and 3rd parties.
3. Carry out the safe erection, use and dismantling of system access platforms less than 2m high.
4. Set up safety barriers around a work environment hazard to protect colleagues and members of the public.
5. Use protective clothing and safety equipment according to specifications issued by manufacturers and know the whereabouts of first-aid equipment.
6. Use, handle and store materials hazardous to health in a safe manner.
7. Carry out a risk assessment to cover the job assigned and the working area.
8. Locate and switch-off temporary or fixed electrical switch gear, systems isolating valves as instructed in the health and safety procedures.

Required Knowledge

The Level 3 Residential Aluminium Fabricator must know 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 material 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 hazards and potential hazards at the place of work (such as electricity, slippery and uneven surfaces, dust and fumes, 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.
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 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.
13. The necessary safety precautions including the use of protective clothing and equipment for a range of applications.
14. The methods used for protecting customers' property.
15. When it is required to isolate domestic water services from the main water supply.
16. Any toxic effect from materials commonly used at construction sites.

17. The preventative and remedial actions to be taken in the case of exposure to materials hazardous to health.

Required Skills

The Level 3 Residential Aluminium Fabricator must be able to:

1. Identify which health and safety procedures are relevant to the working environment.
2. Seek expert 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 employers' instructions for the safe use and maintenance of tools and equipment.
5. Control health and safety hazards within the job responsibility.
6. Report any hazards which may present risk to relevant persons.
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 employer.
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 sets up safety barriers, around working areas.
12. Equip oneself with the appropriate protective clothing and safety equipment for the fabrication and installation of door and windows tasks and some other specific tasks when assisting other workers, such as, gauntlets, gloves, safety glasses, hard hats, safety shoes; overalls and safety harness.
13. Use 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. Communicate complex information regarding unfamiliar and unpredictable situations to colleagues and supervisors.
16. Advocate appropriate health and safety procedures.

RAF302: Identify systems, equipment and components

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

Performance Criteria

The candidate must have the necessary knowledge and skills to:

1. Distinguish between the different types of profiles by size, by the manufacturer's designated purpose and ensure the safety installation of the aperture.
2. Distinguish between the different types of glass and prepare the necessary tools and equipment for installation.
3. Distinguish between the different types of fittings for doors and windows and prepare the necessary tools and equipment for installation.
4. Select and remove waste and scrap material for disposal or recycling as required.

Required Knowledge

The Level 3 Residential Aluminium Fabricator must know and explain:

1. How to handle profiles and prevent scratches and other damages.
2. Glass specifications, such as, annealed glass, safety glass, patterned glass, tinted glass, heat reflective and insulated glass units.
3. Weight of individual items and when in bundle.
4. Nesting techniques to minimise off cuts and scrap material.
5. Various types of screws and other fittings, such as, locks, wheels, stays, hinges, springs and balances.
6. How to determine the appropriate structural requirements for the safe installation of the aperture.

Required Skills

The Level 3 Residential Aluminium Fabricator must be able to:

1. Distinguish between and apply the different types of materials, products, methods and procedures applicable to the fabrication and installation of aluminium doors and windows.
2. Distinguish between and apply a range of rubber/ silicon/ vinyl and other types of seals and gaskets available on the market.
3. Distinguish between and apply a range of door and window profiles and fittings;
4. Distinguish between the different types of cutting disks suitable for aluminium profiles;
5. Apply procedures to minimise off-cuts and fabrication material waste and, dispose fabrication waste as stipulated in the environmental protection act.

RAF303: 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:

1. Read and interpret drawings and specifications to select type of aluminium profile and related fittings.
2. Read and interpret drawings to establish important building datum grids and levels, floor and windowsill levels and the numbering of items.
3. Calculate the quantities of profiles, fittings and consumables required to meet work schedules and workload.
4. Check and investigate deviations, misalignments against tolerances given.
5. Measure all openings accurately to the required tolerances.

Required Knowledge

The Level 3 Residential Aluminium Fabricator must know and explain:

1. Compilations of overall linear dimensions from drawings.
2. Calculations including those involving quantities and costs of materials.
3. Which tools and equipment are used to set out levels and datum of doors and windows and establish best size to fit.
4. Software available to assist in the material take-off procedure.
5. Types of building drawings.
6. The method to transpose metric units.
7. The appropriate manner of measuring all openings accurately to the required tolerances.

Required Skills

The Level 3 Residential Aluminium Fabricator must be able to:

1. Translate drawing details to setting out of work.
2. Check spirit levels and other measuring instruments for accuracy.
3. Translate quality specifications on actual work.
4. Take-off quantities from drawing.
5. Measure and comprehend calculations using metric units.
6. Read and interpret annotated building drawings.
7. Measure all openings accurately to the required tolerances.

RAF304: Fabricate and install aluminium residential doors and windows

This Unit is about using tools and equipment to fabricate and Install residential aluminium doors and windows to required size and quality.

Performance Criteria

The candidate must have the necessary knowledge and skills to:

1. Check that the windowsill and door floor level is as stipulated in drawings and specifications and note any discrepancies.
2. Assemble doors and windows in accordance with recognized manufacturer specifications and design specifications.
3. Inspect for quality doors and windows after fabrication and the installation.
4. Modify activities to cater for variations in workplace controls and environment.
5. Read and interpret simplified drawings and user machine/ tools manuals.
6. Collaborate and work in a team to optimize workflow and productivity.
7. Correct any existing defects in the opening prior to the appropriate installation of the aperture.

Required Knowledge

The Level 3 Residential Aluminium Fabricator must know and explain:

1. The process to fabricate and install doors and windows.
2. Work order procedures and formats.
3. How to communicate effectively regarding work requirements.
4. The proper use of assembly benches; hand, drop and up-saws; pneumatic equipment; hydraulic and manual presses; frame and sash tooling; routers; millers; crimpers; screwdrivers.
5. How to set out requirements of machines.
6. Mathematical techniques to correctly complete measurements.
7. Methods to correct any existing defects in the opening prior to the appropriate installation of the aperture.
8. Methods to protect existing finishes during work.

Required Skills

The Level 3 Residential Aluminium Fabricator must be able to:

1. Confirm that materials, tools and equipment required are fit for their intended purpose.
2. Draw cutting list and set machines accurately.
3. Know that fittings, fixings and joining devices or materials are selected in accordance to manufacturer specifications and approved drawings and standards.
4. Identify the tools and equipment according to installation procedure.
5. Check tools and equipment to ensure that they are appropriate, serviceable and in a safe condition.
6. Check against specifications door and window hardware.
7. Set machines to cut profiles and slots to the required accuracy.
8. Prepare housing for fittings in accordance with workplace practice.
9. Install windows and doors using appropriate fixing methods and approved installation specifications.
10. Inspect and clean work area.
11. Inspect, clean and maintain tools, equipment and unused materials as appropriate.
12. Draw up workshop reports/ documentation as agreed with supervisor and employer.
13. Assemble frames including glass, gasket, tapes, sealants, fasteners, reveal linings and flashings.
14. Label frames and fittings.

15. Correct any existing defects in the opening prior to the appropriate installation of the aperture.
16. Protect existing finishes during work.