LMFGG3017B
Fabricate and install commercial glazing

Learner Workbook
Version 1

Training and Education Support
Industry Skills Unit
Meadowbank

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Fabricate and Install Commercial Glazing

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A Copy of the training package is accessible at:  
Introduction to the resource

This resource is designed to assist participants undertaking the National Furnishing Curriculum competency LMFGG3017B – Fabricate and Install Commercial Glazing. This workbook is structured so you can progress through the Learning Tasks with the assistance of a teacher.

A large part of the glass industry is commercial glazing. In this competency you will learn how to measure, fabricate and install glass in commercial shopfronts, doors and windows in accordance with the relevant building standards and develop an understanding of the different applications available.

Competency purpose

The purpose of this competency is to develop knowledge of how to design, fabricate and install commercial glazing.

Nominal duration

It will take you approximately 40 hours to complete this competency. However, this is a suggested time only, as the time required to gain competency in this competency will vary from person to person.

Relationship to Competency Standards

This competency relates to the following National Furnishing Industry Competency Standards.

Structure

This competency content is divided into seven (7) Sections:

Section 1: Design
Section 2: Site Management and Safety
Section 3: Fabrication
Section 4: Installation
Section 5: Glazing
Section 6: Aluminium Technology
Section 7: Balustrading
STUDENT ASSESSMENT GUIDE

Unit of competency name  
Fabricate and install commercial glazing

Unit of competency number  
LMFGG3017B

Unit Purpose

At the completion of this unit you should be able to plan, fabricate and install glass in commercial shopfronts, doors and windows.

Reporting of assessment outcomes

Your result will be recorded and reported to you as Competent or Not yet Competent.

Requirements to successfully complete this unit of competency

To achieve this unit of competency you will need to demonstrate your ability to:

- Interpret work order/job instruction and locate and apply relevant information to fabricate and install commercial glazing.
- Apply safe handling requirements for equipment, products and materials, including use of personal protective equipment.
- Follow work instructions, operating procedures and inspection practices to:
  - minimise the risk of injury to self and others
  - prevent damage to glass, frames, equipment and products
  - maintain required production output and product quality.
- To complete a minimum of:
  - measuring for the installation of commercial windows, shopfronts and doors
  - work from product specification data sheets and specified software programs
  - identify and select product materials in relation to wind loading requirements
  - fabricate frame and sash components including cutting, tooling/milling, routing, drilling and crimping
  - identify, select and install component hardware including weather seals, wheels, stays, hinges and COC pivots, guides and locks
  - select and cut glass to AS1288 and AS4667
  - assemble frames including glass, gaskets, tapes, sealants, adhesives, fasteners in accordance with AS2047
  - install commercial windows, framed and frameless shop fronts and returns, supporting fins and doors
  - calculate the cost of commercial windows, shopfronts and doors.
- Work effectively with others.
- Modify activities to cater for variations in workplace contexts and environment.
- Identify
  - The types, qualities and characteristics of glass, including the hazards and handling requirements.
  - The techniques, methods, materials and process of fabricating and installing commercial glazing.
  - Workflow in relation to the fabrication and installation of commercial glazing.
  - Relevant Australian Standards.
**Glossary of terms**

The following list of basic building terms is common throughout the Australian construction industry. Understanding their meanings is essential for day to day communications both on-site and off-site. This is by no means a comprehensive list; however every effort has been made to include those terms used throughout this text, plus many other words you will come in contact with.

**Aluminium**
- alloy metal, light weight corrosive resistant, shaped for various Applications

**Acoustic material**
- material with specific acoustic properties for sound absorption

**Anchor**
- a special fastener placed in a pre-drilled hole and expands to lock in place when tightened

**Anodise**
- a protective film oxide placed on aluminium by electrolysis, hard wearing corrosion resistant available in many colours

**Backing rod**
- foam material placed in compression joint, used as a backing for sealants

**Bead**
- small mould used to secure glass in place or cover small gaps

**Bulk head**
- box structure over openings

**Beam**
- structural member usually horizontal to support loads across an opening

**Bi fold**
- panels hinged together so that when opened one folds in front of another

**Brace**
- a diagonal structural member which resists lateral forces

**Caulking**
- a water proofing compound for sealing cracks or joins

**Cladding**
- outer covering of external walls

**Close cellulose foam**
- plastic material density reduced by numerous small air pockets used as a backing for caulking

**Closer**
- a mechanical device fitted to automatically close doors

**Cylinder locks**
- lock with a key from the outside and a knob or latch on the inside
What will I learn in this Section?
To identify the relevant standards and list shopfront components as well as an ability to recognise different design options in commercial glazing.

What must I do to complete this Section?
In this section you will:
- Identify the relevant building standards
- List different shopfront components
- Display an understanding of different shopfront and door designs.

Fast track
If you think you can display competence in these criteria ask your teacher for Assessment Task LMFGG3017B. If you are unsure or require help to achieve competency continue with this Section and complete the Learning Tasks in this workbook.

Section overview
The purpose of this Section is for you to develop an understanding of the relevant standards and the available designs and components used in fabricating and installing commercial glazing.

Materials required
Have available the following items:
- Workshop resources
- paper
- pen
- calculator
Introduction

Shopfronts give a building distinction and provide an appealing, unique style that generates interest for potential customers. The design of the shopfront must be attractive to look at as well as providing a functional part of building. The facades of many commercial buildings including office blocks, hospitals libraries etc may be designed and constructed similar to those used in shopfronts.

Shopfronts will all vary to some degree, however they all comprise of, a main shopfront frame, display area, doorway, signage etc. The design of the shopfront should complement the existing structure and the design of the building itself whether traditional or modern.

When constructing shopfronts all building work must conform to the local regulations and relevant building standards. Such codes and regulations can affect the design and manufacturer of the shopfront. Specialist companies and architects create the design following these codes. The shopfront is then constructed by the fabricator, both off-site or on-site, installed and glazed.
Codes and regulations that affect design

- BCA. The building code of Australia
- AS 1170. Structural design, wind loads, moments of inertia
- AS 1288. Glass installation and safe wind loads
- AS 1664. Aluminium structures.
- AS 2047. Windows in buildings selection and installation
- AS 4284. Testing of Building Facades.

For more information check with your local building authority and Standards Australia (www.standards.com.au)

Photo number 2: modern commercial entry

Modern shopfronts are more streamlined in comparison with traditional shopfronts, having large glass areas with sophisticated door mechanisms. Some modern facades are constructed of glass only fixed with special architectural hardware, while others have an aluminium framing or panel system. Aluminium produces clean unbroken lines with maximum sight lines, by using pocket glazing. Various thickness glass panels can be used without the need of heavier framing sections.
Activity: Written Questions

Exercises Required to Complete this Section

Write answers to the following questions.

Question 1
What two standards would you refer to if you wanted to check wind loads on a shopfront?

Question 2
What are the following components of a shopfront?

Mullion

Subsill

Stile

Question 3
The critical structural members are?

Question 4
Automatic Entry Doors must comply with what?