



Door and Window Fixing

Carpentry - Residential Construction

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TAFE NSW Training and Education Support, Industry Skills Unit Orange and Granville
68 South Street
Granville NSW 2142
Telephone: (02)9846 8101

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DOOR AND WINDOW FIXING OVERVIEW

This text introduces a variety of subject matter related to Building and Construction, at a basic level. Definitions related to doors and windows, including associated accessories, the materials used and the preparation of members to allow for frame, door and sash manufacture.

Timber and metal frames, doors and windows are dealt with in relation to installation requirements, manufacturers details and schedules.

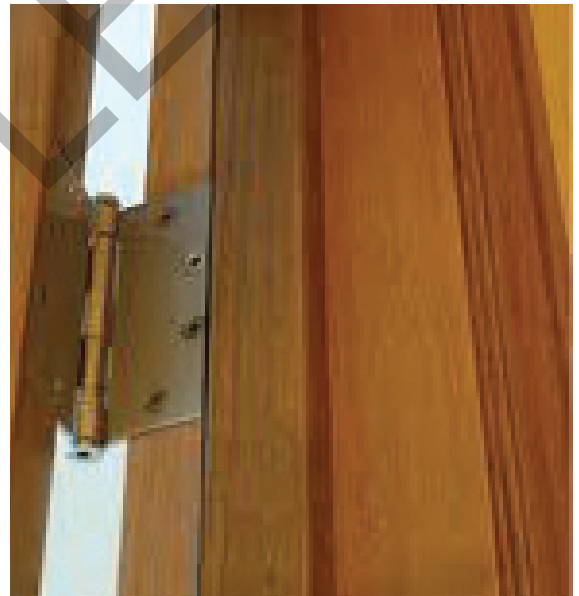
Flashings for heads and sills are described, including materials used and methods of finishing off the frames internally and externally.

There are many types of timber and metal windows available, but the basic operation for both is similar. The primary function is to provide natural light and ventilation.

DOOR JAMBS AND THRESHOLDS

MATERIALS

There are a variety of timbers used for external jambs and thresholds, which have good durability qualities to resist the ravages of the weather. Less durable timbers such as Oregon, Meranti, Tasmanian oak, etc. may also be used for jamb linings provided they are well protected from direct weathering and have a durable surface finish applied.



USE	TIMBER	USE	TIMBER
T	• Kwila	T	• Tallowwood
J,T	• Rose Mahogany	J,T	• Western Red Cedar
J	• Messmate	T	• Blackbutt
T	• Yellow Siris	J,T	• Kapur
T	• Sydney Blue Gum	J,T	• Queensland Maple
T	• Red River Gum	J	• Silky Oak
T	• Karri	J,T	• Grey Gum

COMMON TIMBER PROFILES

Stiles and Heads

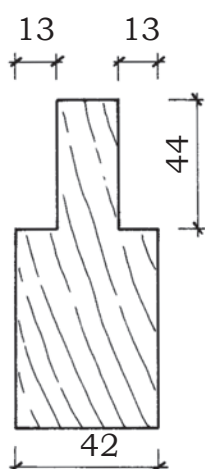
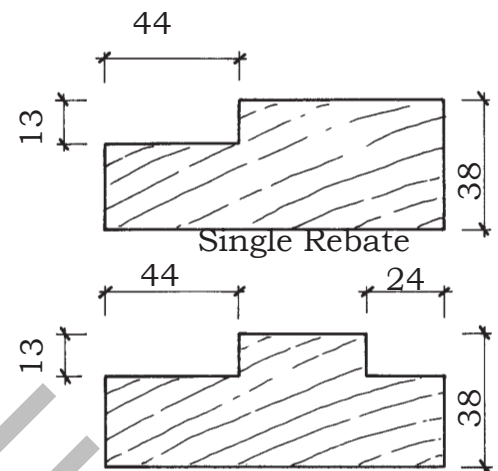
Single and double rebated profiles are available in the following standard nominal sizes:

- 75 x 38
- 100 x 38
- 125 x 38
- 150 x 38
- 175 x 38

Special sizes are also available with thicknesses out of 50 to 75mm, for increased security.

Entry doors are thicker than internal doors, for increased security, therefore the rebate size will be 42 x 12mm up to 44 x 13mm.

Double rebated jambs are available to allow for secure fitting of external security screen doors.



Mullions and Transoms

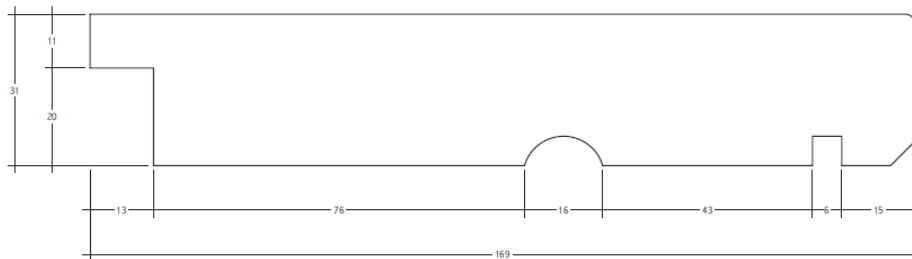
The mullions are the vertical double rebated members placed between the stiles to allow the door to be hung on a stile and locked to the mullion or hung on one mullion and locked to the other. The purpose of two mullions is to allow fixed timber or glass sidelight panels to be inserted on either side of the door.

A transom is the horizontal member placed between the top edge of the door and the head of the door-frame, to allow the fixing of glass.

Mullions and transoms are available in the same widths as stiles but have heavier nominal thicknesses of 50 to 75mm.

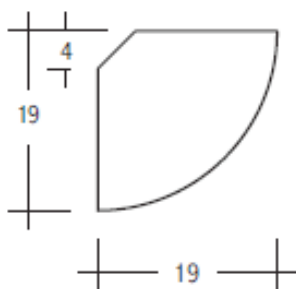
Thresholds

A threshold is placed across the base of the door-frame to provide a border for floor coverings to abut, provide a serviceable entry surface for foot traffic and provide weatherproofing from driven rain.



Thresholds may be made of solid rebated hardwood timber, solid stone, slate, ceramic tiles or precast terrazzo (imitation stone).

Storm moulds

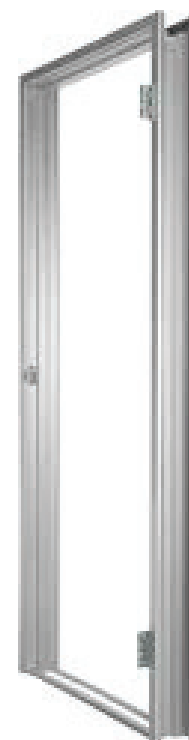


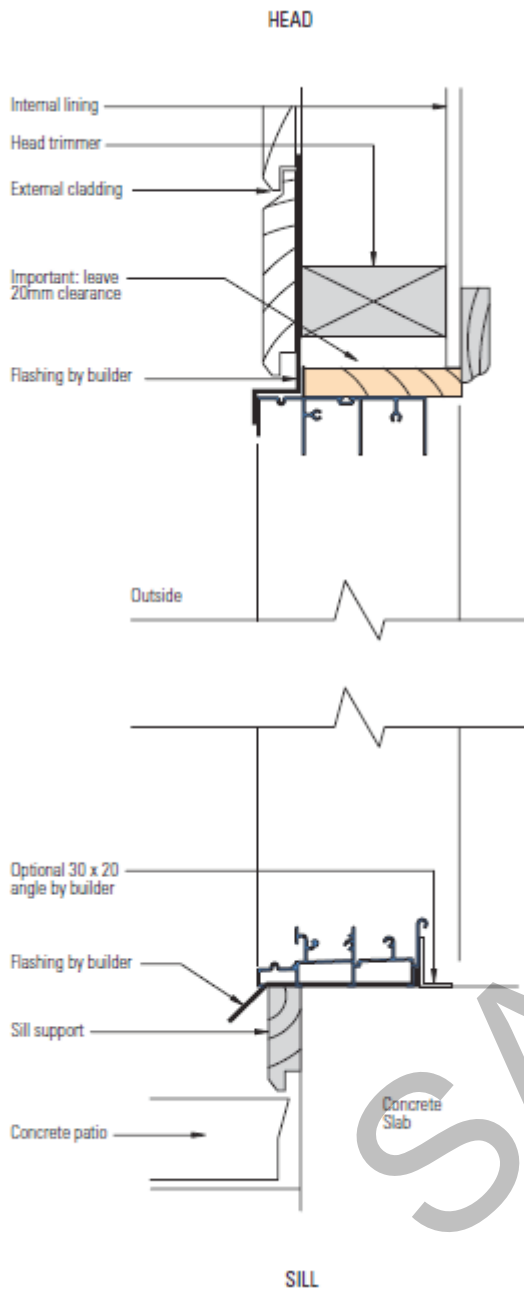
Storm moulds are fitted and tacked to the face edge of the jamb stiles and head prior to the installation of the jamb. The sides may be adjusted to suit brick bond, but ideally they should be set in 5 to 10mm from the outside of the stiles. This provides a weathered joint between the brickwork and the jamb, to prevent rain and wind being driven straight through, and it allows the brick bed joints to remain full behind the mould. Storm moulds may be quadrant, splayed or square dressed in profile.

COMMON METAL PROFILES

Steel Door-frames

These steel door-frames are usually prefabricated, primed, fitted with welded or riveted hinges and have a strike plate assembly fitted to the lock stile. Although these frames may be used internally and externally in brick veneer construction, they are generally used in conjunction with a single skin of brickwork for the rear garage entry door, for residential work. The mitred joints may be of a tab and slot or welded connection. The frames come with temporary spreaders across the base to assist with installation.





Aluminium Door-frames

These door-frames come pre-assembled with timber reveal linings and flashings. The profiles consist of a series of extruded aluminium fins connected to form tracks and the supporting frame itself. The head, stile and sill extrusions are screwed together with stainless steel self-tapping screws and sealed with a flexible silicon sealant. The sill has a flashing fitted behind the weathering fin allowing it to be built into timber framed, brick veneer or cavity construction. Standard door-frames may be manufactured to take hinged or sliding doors, however the most common type for residential construction is the horizontal sliding door system.

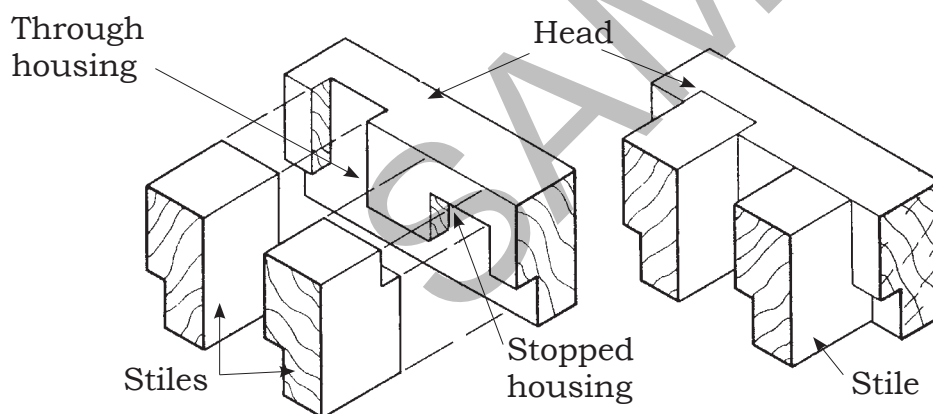
TIMBER DOOR-FRAME ASSEMBLY

JOINTS

The four acceptable methods of joint construction between solid head and jamb stiles are:

1. Trenched head and fully let-in jamb (through housing)
2. Trenched head and bare-faced tenon (shouldered housing)
3. Partly trenched head and stepped jamb (stopped housing)
4. Morticed head and tenon on jamb (shouldered mortice and tenon).

The most commonly used are the *Trenched head and fully let-in jamb* and the *Partly trenched head and stepped jamb*. To create an accurate tight-fitting joint, use a short off-cut section of jamb stock material, when setting out the head to take the stiles. The Partly trenched or stopped housing method is used on stained or clear finished work where the architraves do not cover the joint.



SET OUT, CUT AND ASSEMBLE DOOR-FRAMES

The following steps outline the method used to set out, cut and assemble door-frames ready to be installed into the external wall of a brick veneer cottage, using a stock size 2040 x 820 x 40mm door.

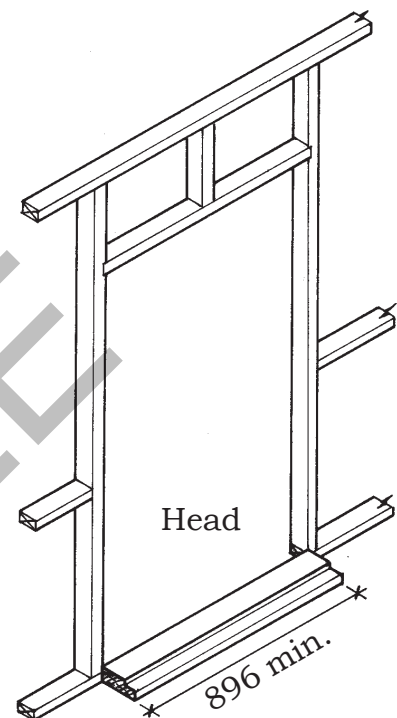
- STEP 1** Select a length of jamb stock material, square one end and mark the length, which should be equal to the width of the wall frame opening.

Note: Allow 2mm clearance either side for stain and 3mm either side for a paint finish.

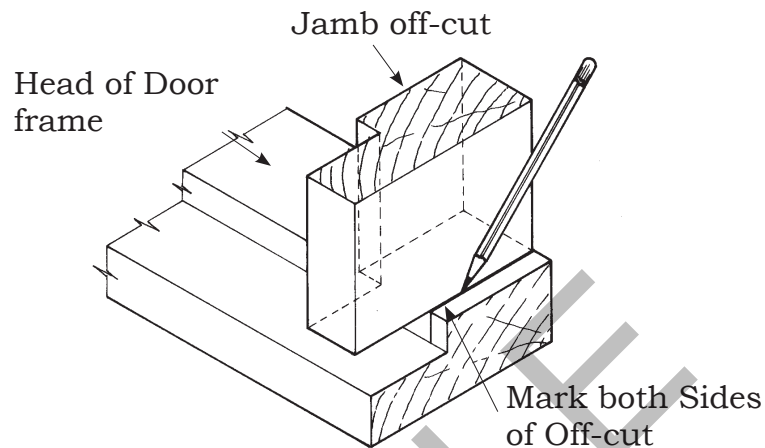
Formula:

$$\begin{aligned} \text{Length} &= \text{door width} + \text{jamb} + \text{clearances} \\ &= 820 + (25 + 25) + (3 + 3) + (10 + 10) \end{aligned}$$

$$\text{Minimum opening width} = 896\text{mm}$$



- STEP 2** Measure in 10mm from one end and square a line across the face of the head.
Use an off-cut length of jamb stock material, on its end, to set out the width for the through housing, then square a parallel line across the face of the head.



- STEP 3** Lay the rebated section of the off-cut over the outside edge of the head and mark the depth of the rebate, which will also be the depth of the housing.

