



0454 Overhead doors

Document version: 2.0

Published date: 30/11/2022

Disclaimer: The information within this document once printed/exported will be classed as an uncontrolled copy. Its currency must be checked by visiting the EFSG/Technical Standards website prior to using the information for any purposes.

Table of contents

0454 Overhead doors.....	0
Table of contents.....	1
List of tables	1
List of figures	1
00 Design principles.....	2
0.01 Main considerations	2
Specification	2
01 General.....	2
02 Product	2
2.1 Sectional overhead doors.....	2
2.3 Roller shutters.....	6
2.4 Roller shutters – administration.....	7
2.5 Roller grilles	8
2.6 Roller shutters – internal timber slat type.....	10
03 Execution.....	11
04 Selections	11

List of tables

Table 01: Roller grilles schedule.....	8
--	---

List of figures

No table of figures entries found.

00 Design principles

0.01 Main considerations

It is a requirement to undertake the [00 PLANNING AND DESIGN/0001R - DESIGN REFERENCE](#) and [GLOSSARY OF TERMS](#) information into all aspects of design, detailing and delivery when developing the content here within. Clear demonstration of adherence to these requirements is part of the services and will be called upon at key points in the project and during at the discretion of the Department of Education (DoE).

The selection of the type, size, finish and hardware of doors is to be undertaken on the basis of a Whole of Life consideration in order to provide overhead doors that will be cost effective and the most appropriate for the individual location.

When selecting doors, the following characteristics should be considered:

- **Functionality:** Choose frame, leaf and hardware as appropriate to the function of the door and the use of the space to which the door is providing access.
- **Durability:** Doors in pupil accessible areas are subject to extensive wear and tear. In order to be fit for purpose, the frame, door leaf and hardware need to be robust.
- **Maintainability:** door hardware needs to be readily available, easy and economical to maintain.
- Consider safety when planning for doors opening onto circulation spaces.

Specification

01 General

As per current NATSPEC.

02 Product

As per current NATSPEC except as follows:

2.1 Sectional overhead doors

GUIDE NOTE: Replace the text for sectional overhead doors nominated in the NATSPEC building template with the following:

Sectional overhead doors

Type: A proprietary system comprising a door with 2 off, linked horizontal panels hinged together inclusive of the necessary operating gear, hardware and accessories. The doors are to be weather lapped at the horizontal joints and fitted with rollers running on inside tracks that guide the doors.

Door structure

The door frame to be of an all welded construction.

Material: Rolled hollow section steel members.

Thickness, Material: 1.6 mm

Design: Beams to be designed for max dead load deflection of 1/300th part of the span and shall be designed for wind load and operational requirements.

Preparation: The framework and fittings shall be abrasive blast cleaned to grade 2.5.

Protective coat: Factory applied inorganic zinc primer.

Undercoat: Factory applied two-pack polyurethane.

Finish: Polyurethane paint.

GUIDE NOTE: Refer to [06 FINISH/0671 PAINTING](#) and Australian Paint Approval Scheme (APAS).

Side tracks: Side tracks, pulleys, link arms and linkages are fabricated from minimum 3.0 mild steel finished equal to door structure.

Counterbalancing: Counterweight system with the counterweights hung on galvanised 6.19 flexible multi-strand steel cable. Safety Factor: 6:1 (minimum)

Steel sheaves: Machined to correctly bed the cables and having a sheave to cable diam. ratio of at least 19:1, sheaves shall have bearings of sufficient load carrying capacity.

Counterweight cover: Boxed section fixed to wall to a height of 2400mm

Operation:

Motorised: By an electric motor incorporating a proprietary heavy-duty cam drive electric operation system, designed to fully open or close the door Travel time (Opening or Closing): 4 to 5 seconds (approx.) per metre of opening height.

Motor and transmission: 1 HP (0.75kw) continuously rated 3 phase motor, close coupled to a matched reduction gearbox fitted with a torque limiting safety clutch. The power drive is to be transmitted through an overhead shaft of suitable torsion capacity.

Controls: Supply a control station for installation with a keyed non-latching pushbutton for both opening and closing door/s. Note: It is important the pressure be maintained on the pushbutton to open and close the door/s.

- Key tag: Plastic key tag labelled "AUTHORISED USE ONLY". Attach tag to key with split ring and hand over to the Principal's Authorised Person / Principal's Representative at completion of work.
- Safety signs: Refer to [05 INTERIOR/0581 SIGNAGE](#)

Additional requirements: 415-volt 3 phase power with neutral, terminated at a power isolating switch where required by the Supply Authority, is required adjacent to the operating side of the doorway opening.

Seals:

- Brush seals to surround of door
- Proprietary rubber seals to hinge line with a nominal gap of 30mm between top and bottom door leaf.
- Chain guards: Removable

Safety signs: Refer to [05 INTERIOR/0581 SIGNAGE](#)

Safety zones:

- Provide door operation safety zone markings on floor/pavements to each sidetrack. The marked safety zones are intended to restrict people from entering the zoned area when the door is in operation.
- The safety zone markings are to be of sufficient distance to prevent people from reaching the track mechanism.
 - Minimum distance from track to line marking: 800mm
- Refer to [06 FINISH/0671 PAINTING](#) and [05 INTERIOR/0581 SIGNAGE](#)

Chain guards: Removable

Cog/chain guard: Permanently fixed to the base of each track to effectively cover cog/chain mechanism.

External linings:

Type: Solid Aluminium sheet

- Metal type and thickness: 100% marine grade solid aluminium panel Non-combustible to AS1570.1
- Finish: external cladding panel surface factory prefinished both sides by the supplier with a fluoropolymer coating. 30-micron thickness
- Panel thickness: 3mm

Type: Glass infill

- Laminated safety glass

Colour: For colour and finish requirements refer to [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - FINISH](#).

GUIDE NOTE: For full description of internal lining required, refer to the lining worksection of this specification.

Internal linings:

Generally: Provide perforated corrugated metal wall lining to the upper internal leaf of the door and unperforated metal wall lining to the lower internal leaf only.

Corrugated sheet metal lining material to be fixed vertically.

Type:

- Preformed perforated/unperforated metal internal wall lining.
- Thickness (minimum): 0.48 mm B.M.T. (Base Metal Thickness).
- Corrugated, perforated/unperforated COLORBOND® pre-painted steel sheet and purpose made accessories forming part of a proprietary system.
- Sheet material: Protected steel to AS /NZS 2728 with a minimum yield stress of 550MPa (Grade 550)

Colour: For colour and finish requirements refer to [00 PLANNING AND DESIGN/0001C DESIGN CHECKLIST - FINISH](#).

- Perforations (nominal) to cover approximately 11% of lining surface. Perforations to be 2.38 mm diameter @ 6.74 mm centres, with a staggered diagonal pitch, set symmetrically across the sheet.

Acoustics: Black liner and thermally bonded textile purpose designed acoustic blanket.

2.3 Roller shutters

GUIDE NOTE: These roller shutters are not intended for administration reception locations. Delete roller shutters nominated in the NATSPEC Building Template and include the following

Roller shutters

Curtain:

- Size: 50 mm or 100 mm wide x 0.6 mm thick.
- Slat end pieces: Windlock

Bottom curtain rail: A box section stiffening member interlocking with the bottom edge or lowest slat of the curtain, extending between the inner face of the vertical guides, formed or adapted where necessary to follow the contour of a sloping floor or threshold. The rail may also be adapted to house the locking device

- Material: Cold rolled steel.
- Size: 2 mm thickness.
- Finish: Galvanised.

Wind-locks:

Wind lock end clips and guides to retain the curtain.

Vertical guides:

Material: Cold rolled steel channels.

Size: 2.5 mm thickness, section to suit "Wind-locks".

Finish: Galvanised.

Drum:

Material: Solid drawn seamless steel tube.

Size: 168 mm outside diameter.

Finish: Galvanised.

Deflection: Not more than 1/400 of span manual in centre span.

Brackets:

Material: 8 mm mild steel welded.

Finish: Galvanised.

Bracket fixing: Not less than three 12 mm diameter anchors to each bracket.

Locking:

The roller shutter must be capable of being locked in the fully closed position.

Operation:

Method of raising and lowering the curtain:

- Spring loaded manual operation.
- Operating gear located in side.

Force required: Install so that the force required to operate the shutter manually does not exceed 220 N.

2.4 Roller shutters – administration

GUIDE NOTE: These roller shutters are intended for administration reception locations.

GUIDE NOTE: Delete roller shutters nominated in NATSPEC Building Template and include the following:

Roller shutters

Curtain:

- Size: 50 mm x 0.6 mm thick.
- Slats: Interlocking, roll formed from galvanised steel.
- Slat end pieces: Windlock or other locking lugs

Bottom curtain rail:

- Extruded aluminium section fitted with shoot bolts or a two-way locking system.
- The roller shutter must be capable of being locked in the fully closed position and at partly opened positions of 200mm intervals. The intervals are to be regularly spaced for the full effective opening height.

Brackets: mild steel with suitable bosses to receive the roller drum axle

Side guides: Formed from 75 x 40 x 2mm thick galvanised steel. The guides must be capable of receiving the proprietary curtain locking lugs.

Roller drum: Steel tube encasing helical springs of high-grade spring wire revolving on a steel axle.

Pull handles: 2 x 125mm chrome on brass pull handles centrally located at 600mm centres. Screw fix two pull handles on the bottom rail of shutter.

Handles to be installed on the clerical – administration/printing side of the shutter

Refer to [04 ENCLOSURE/0455 DOOR HARDWARE](#)

Finish:

- Powder coating
- Colour:

Or

- Galvanneal steel

Operation:

Method of raising and lowering the curtain:

- Spring loaded manual operation.

2.5 Roller grilles

GUIDE NOTE: Refer to NATSPEC Building Template/commentary. The Roller grilles schedule below is to be read in conjunction with the applicable schedule in the NATSPEC Building Template.

Table 01: Roller grilles schedule

Door code	RG1	>
Horizontal grille members:		
Material	Aluminium tube	>
Size (mm)	10mm diameter	>
Finish	Clear anodized	>
Links:		
Material	Aluminium	>

Door code RG1 >		
Finish	Clear anodized	>
Locating	Sleeve spacers	>
Spacing and pattern	200mm (nominal) centres in “brick bond”	>
Sleeves: Material	Aluminium tube	>
Finish	Clear anodized	>
End pieces	Nylon, every tube end	>
Bottom curtain rail: Form	Tee section	>
Size	67 x 44mm (nominal)	>
Vertical guides: Material	Aluminium with built in PVC buffers	>
Finish	Clear anodized	>
Fixing method	Concealed	>
Drum: Material	Steel	>
Size	>	>
Finish	Protective coat	>
Brackets: Material Finish Fixing	Mild steel Protective coat To manufacturer's instruction	>
Operation method	Manual - Spring counter balanced mechanism	>
Hardware: Locking	2 x lockable shoot bolts fitted to bottom rail. Shoot bolts to have provision for padlocks. The roller grille must be capable of being locked in the fully closed position and at partly opened positions of 200mm intervals. The intervals are to be regularly spaced for the full effective opening height.	>

Door code	RG1	>
Pull handle	<p>2 x 125mm chrome on brass pull handles centrally located at 600mm centres. Screw fix two pull handles on the bottom rail of shutter. Handles to be installed on the clerical – administration/printing side of the shutter.</p> <p>Refer to 04 ENCLOSURE/0455 DOOR HARDWARE</p>	>

2.6 Roller shutters – internal timber slat type

Type: Machined timber roller shutter with mated edge profiles.

The roller shutter system must be designed to allow continuous smooth operation.

GUIDE NOTE: nominate an appropriate timber species. check with manufacture regarding timber species available.

- Timber species:

Moulded timber slats:

- Mortice slats into side guides at equal spacings with matched end profiles.
- Dimensions (nominal) (W x T): 38 to 45mm wide x 16 to 18mm thick.

Side guides:

- Recessed guides to be compatible with slats. The recess to be of sufficient depth to allow for easy continuous operation of roller door.

Or

- Extruded aluminium channel with nylon felt buffers to allow for easy continuous operation of the roller door. The channel to be recessed flush into timber members.

Bottom rail: To be compatible with slats.

Roller drum:

- Must be designed to give minimum deflection over span.
- Fitted with a spring counter balance mechanism.
- 150 to 230mm (nominal) diameter spiral ducted lock tube attached to self-lubricating drum wheels and bearing, rotating on a 34 to 40mm (nominal) OD shaft.

Support brackets:

- Galvanised mild steel plates or angles.
- Thickness (BMT): 3mm (minimum).
- Fixing: Securely fixed to wall or head of opening.

GUIDE NOTE: Delete mullions if not required

Mullions: Lift out type

- Machined timber to match curtain.
- Specifically designed to suit installation.

Operation: Manual

Size: As shown on the drawings.

GUIDE NOTE: Solvent or latex coatings not to be used as it may stick and hinder the smooth operation of the shutter.

Finish: Clear timber polish.

03 Execution

As per current NATSPEC.

04 Selections

As per current NATSPEC.