

**0454P GRIFCO IN OVERHEAD DOORS****Branded worksection**

This branded worksection *Template* has been developed by NATSPEC in conjunction with **GRIFCO** (the Product Partner) and may be used whilst the Product Partner is licensed to distribute it. The copyright remains with NATSPEC. As with all NATSPEC worksections, it is the responsibility of the user to make sure it is completed appropriately for the project. The user should also review its applicability for local conditions and regulations. Check [www.natspec.com.au](http://www.natspec.com.au) for the latest updated version.

**Worksection abstract**

This branded worksection *Template* is applicable to GRIFCO operators for sectional overhead doors, and rolling curtain and shutter doors (including fire-resistant roller shutters) for commercial and industrial applications. Manual and motorised operation are covered.

**How to use this worksection**

Customise this worksection *Template* for each project. See A guide to NATSPEC worksections ([www.natspec.com.au](http://www.natspec.com.au)) for information on *Template* structure, word styles, and completing a worksection.

**Related material located elsewhere in NATSPEC**

If a listed worksection is not part of your subscription package and you wish to purchase it, contact NATSPEC.

Related material may be found in other worksections. See for example:

- *0455 Door hardware* for manufacturers' non-standard hardware.

**Material not provided by GRIFCO**

This branded worksection *Template* includes generic material which may not be provided by the Product Partner including:

- Sectional and rigid (tilting) overhead doors.
- Rolling curtain and shutter doors (including fire-resistant shutters).

**Documenting this and related work**

You may document this and related work as follows:

- If documenting manufacturer's standard and non-standard hardware in *0455 Door hardware*, list the hardware requirements for each overhead door in a door and hardware schedule.
- In bushfire-prone areas, document bushfire protection requirements to AS 3959 (2018) and the NCC. If documenting bushfire shutters here, see AS 3959 (2018) clause 3.7 and *0457 External screens*.

**Specifying ESD**

The following may be specified by including additional text:

- Improved corrosion resistance for low maintenance and to extend door service life, e.g. steel frames with galvanic protection under paint coating, Class I anodic coatings.
- Heavy duty weatherstripping including vinyl or wool pile weatherstrips along jambs, neoprene bulb wiper strips at the front of curtains, and neoprene baffles at the top of coils to improve air penetration resistance.

Refer to NATSPEC TECHreport TR 01 on specifying ESD.

**1 GENERAL**

GRIFCO is part of Chamberlain Group International, the world's largest manufacturer of commercial and residential door operators. With over 100 years of Australian manufacturing, Grifco has won awards for Manufacturing and Excellence in sustainable operations.

Grifco door operators are easily integrated into Building, Dock or Fire Management Systems, coupled with a range of access control solutions, including myQ® smart technology, safety and warning systems to suit any application.

**1.1 RESPONSIBILITIES****General**

Requirement: Provide overhead shutters and doors with GRIFCO operators, as documented.

*Documented* is defined in *0171 General requirements* as meaning contained in the contract documents.

**1.2 COMPANY CONTACTS****Grifco technical contacts**

Website: [www.grifco.com.au/contact-us/](http://www.grifco.com.au/contact-us/)

### 1.3 CROSS REFERENCES

#### General

Requirement: Conform to the following:

- 0171 General requirements.

0171 General requirements contains umbrella requirements for all building and services worksections.

List the worksections cross referenced by this worksection. 0171 General requirements references the 018 Common requirements subgroup of worksections. It is not necessary to repeat them here. However, you may also wish to direct the contractor to other worksections where there may be work that is closely associated with this work.

NATSPEC uses generic worksection titles, whether or not there are branded equivalents. If you use a branded worksection, change the cross reference here.

### 1.4 STANDARDS

#### General

Garage doors and other large access doors: To AS/NZS 4505 (2012).

Fire-resistant roller shutters: To AS 1905.2 (2005).

Design wind pressure: To AS/NZS 1170.2 (2021).

Bushfire shutters: To AS 3959 (2018).

### 1.5 MANUFACTURER'S DOCUMENTS

#### Technical manuals

Website: [www.grifco.com.au/downloads/](http://www.grifco.com.au/downloads/)

### 1.6 INTERPRETATION

#### Definitions

General: For the purposes of this worksection, the definitions in AS/NZS 4505 (2012) and AS 1905.2 (2005), and the following apply:

See AS/NZS 4505 (2012) for the following definitions:

- Sectional overhead door.
- Rigid overhead door.
- Rolling curtain door.
- Rolling shutter door.

See AS 1905.2 (2005) for the definition of fire-resistant roller shutters.

- Wicket: Door side-hung on the vertical guide and interlocking with the closed curtain.

Edit the **Definitions** subclause to suit the project or delete if not required. List alphabetically.

### 1.7 SUBMISSIONS

#### Certification

Fire-resistant roller shutters: Submit evidence of compliance of installation to AS 1905.2 (2005).

Drivers for openers: Submit evidence of compliance and suitability to AS/NZS 60335.1 (2022) and AS/NZS 60335.2.103 (2016).

Certificates of compliance or suitability are available from Grifco online or on request.

#### Operation and maintenance manuals

Requirement: Submit manual to **COMPLETION, Operation and maintenance manuals.**

#### Products and materials

Type tests: Submit the following:

- Fire-resistance level: Verification from an Accredited Testing Laboratory of fire-resistance level tested to AS 1530.4 (2014).
- Bushfire resistance: Verification from an Accredited Testing Laboratory of bushfire resistance tested to AS 1530.8.1 (2018) and AS 1530.8.2 (2018).
- Acoustic performance: Verification from an Accredited Testing Laboratory of weighted sound reduction index ( $R_w$ ).
- Wind-borne debris impact: Verification from an Accredited Testing Laboratory of wind-borne debris impact rating.

A wind-borne debris impact rating is an optional rating that may be applicable to design in cyclonic areas. Where wind-borne debris impact ratings are marked on a door, AS/NZS 4505 (2012) calls for verification by type testing to AS/NZS 4505 (2012) Appendix B.

Type tests are carried out off-site. However, submission of evidence of a successful type test may be called up here for requirements specified in SELECTIONS or PRODUCTS, when there are no SELECTIONS.

### Samples

General: Submit 2 samples of each of the following where applicable:

- Sections proposed for frames, louvres and slats.
- Joints, using proposed techniques.
- Finishes to prepared surfaces.
- Colour samples from prefinished production material, (including anodised or powder coated extrusions and sheet) showing the limits of the range of variation, if any, for each component documented.
- Door manufacturer's standard hardware items.

### Shop drawings

General: Submit shop drawings showing details of each assembly, component and connection, and information relevant to fabrication, surface treatment and installation.

Motorised overhead doors: Submit shop drawings showing location of motor, wiring, power requirements, location and type of safety devices, location of manual operation switch, and other electronic components.

### Subcontractors

General: Submit names and contact details for proposed suppliers and installers.

Conditions of tendering may require tenderers to state which approved firm they intend to use, in which case the firm proposed by the successful tenderer will be the approved subcontractor.

Delete if installer/supplier details are not required.

### Warranties

Requirement: Submit warranties to **COMPLETION, Warranties**.

## 1.8 INSPECTION

### Notice

Inspection: Give notice so that inspection may be made of the following:

- Framing or structure to receive tracks and motor.
- Tracks and guides installed before doors or shutters are hung.

Amend to suit the project, adding critical stage inspections required.

**Hold points**, if required, should be inserted here.

## 2 PRODUCTS

### 2.1 GENERAL

#### Product substitution

Other products: Conform to **SUBSTITUTIONS** in 0171 *General requirements*.

**SUBSTITUTIONS** in 0171 *General requirements* sets out the submissions required if the contractor proposes alternative products. Refer also to NATSPEC TECHnote GEN 006 for more information on proprietary specification.

#### Door assembly

Requirement: Proprietary system complete with hardware and accessories, including operating system by Grifco.

#### Marking and labelling

Garage doors and other large access doors: To AS/NZS 4505 (2012) Section 8.

Fire-resistant roller shutters: To AS 1905.2 (2005) Section 6.

#### Motorised operation

General: If a motorised door operating system is documented, incorporate the following:

If products are selected in SELECTIONS, delete text here.

- An electric motor with limit switches, and of adequate capacity to operate the specified door smoothly and without strain.
- Overload cutout.
- Photocell or IR beam safety device.

Generally delete for single dwelling projects. If products are selected in SELECTIONS, delete text here.

- Manual disengagement device or automatic chain engage mechanism in the event of a power failure.
- Operation by battery-powered radio remote controller, supplied as part of the system.
- Additional operation by push-button or key switch, located 1500 mm above floor level.

Wicket door: If a wicket is fitted to the shutter, provide a limit switch device to prevent motor operation until wicket and the frame are hinged clear of the curtain.

## 2.2 SECTIONAL OVERHEAD DOORS

There are a variety of door panel types available in residential, commercial, and industrial grades. The doors are custom-made to fit the openings. Residential types are available in widths up to 7.4 m and commercial types for heights up to 5.0 m. The required overhead clearance varies. Consult the manufacturer. The **Sectional overhead door schedule** provides options for documenting particular types, and non-standard hardware and accessories, if required.

### Panels

Requirement: Materials and finishes, as documented.

Bottom panel: Adapted for sloping floors or threshold and fitted with a compressible PVC or neoprene seal strip.

### Side tracks

Material: Roll formed galvanized steel.

Reinforcing: If required to carry door loads without distortion, reinforce horizontal track sections with a galvanized rolled steel channel.

### Counterbalancing

General: Counterbalance the door by an adjustable torsion spring system connected to the door by cables of galvanized steel multi-strand wire rope, or by an equivalent system.

## 2.3 ROLLING CURTAIN AND ROLLING SHUTTER DOORS

### General

Requirement: Materials and finishes, as documented.

### Curtain

There are a wide variety of types available. Consult manufacturers. The **Rolling curtain and rolling shutter door schedule** provide options for specifying particular types, and non-standard hardware and accessory items, if required.

Rolling curtain: Continuous roll formed profiled steel.

Rolling shutter: Individual horizontal interlocking slats with interlocking hinges.

Rolling grille: Articulated curtain formed of horizontal members spaced apart and connected by vertical links.

### Bottom rail

The **Rolling curtain and rolling shutter door schedule** provides various options for bottom rails. Consider also weatherstripping, and schedule under accessories.

Requirement: Provide a stiffening member as follows:

- Interlocking with the bottom edge or lowest part of the curtain.
- Extending between the inner faces of the vertical guides.
- Formed or adapted as required for sloping floors or threshold.
- Adapted to house a locking device, if required.

### Wind locks

General: Provide wind lock end clips and guides to retain the curtain in wide openings or under extreme wind conditions.

### Drum

Springs: Helical torsion springs housed in the drum and arranged to counterbalance the curtain weight without exceeding the safe working stress of the spring material.

**Wickets**

General: Where documented, provide doors with metal frame and facings to match the curtain, and manufacturer's standard lockset and furniture.

Motorised: If a wicket is fitted to the shutter, provide a limit switch device to prevent motor operation until wicket and the frame are hinged clear of the curtain.

**2.4 FIRE-RESISTANT ROLLER SHUTTERS****General**

Requirement: Materials and finishes, as documented, to AS 1905.2 (2005).

**Fire-resistance level**

Requirement: As documented. Tested to AS 1530.4 (2014).

**Bushfire shutters**

Requirement: To AS 3959 (2018) clause 3.7.

**Curtain**

Fire-resistant rolling curtain: Continuous roll formed profiled steel tested to a fire-resistance level.

Fire-resistant roller shutter: Roll formed galvanized interlocking steel slats, each slat fitted with steel end caps and tested to a fire-resistance level.

**Bottom rail**

Requirement: Provide a stiffening member as follows:

- Interlocking with the bottom edge or lowest part of the curtain.
- Extending between the inner faces of the vertical guides.
- Formed or adapted as required for sloping floors or threshold.
- Adapted to house a locking device, if required.

**Wind locks**

General: Provide wind lock end clips and guides to retain the curtain in wide openings or under extreme wind conditions.

**Drum**

Maximum drum deflection: 1/360th of the span.

Springs: Helical torsion springs housed in the drum and arranged to counterbalance the curtain weight without exceeding the safe working stress of the spring material.

**2.5 GRIFCO OPERATORS****Manual operators**

General: Provide a GRIFCO hoist to operate the door manually, as documented.

Hoists:

- Fire Shutter Manual Hoist: For fire shutters and light commercial roller shutters and doors.
- Manual hoists: For light commercial roller doors and shutters.

Contact GRIFCO for the range of hoists for manual operation of roller shutters and doors.

If manual hoists are selected in SELECTIONS, delete text here.

**Motorised operators**

General: Provide a GRIFCO motorised door operating system, as documented.

Motors:

- E-Drive: For commercial roller shutters and doors, spring balanced.
- M-Drive: For commercial roller shutters and doors, spring balanced.
- LR-Drive: For light commercial roller doors, spring balanced.
- S-Drive: For commercial sectional doors.
- LS-Drive. For light commercial sectional doors.

Contact GRIFCO for a wide range of operators and accessories.

If motors are selected in SELECTIONS, delete text here.

**Accessories**

General: Incorporate the following GRIFCO controls and accessories, as documented:

- Photocell or IR beam safety device and edge.

- Light fixture, automatically switched on when opener is activated, and switched off by timer.
- Manual release handle, to disengage door from drive mechanism in the event of a power failure.
- Battery-powered radio remote transmitter.
- Push-button or key switch.
- Internet connectivity.
- Obstruction detection – for motor reversal.
- Reversing starters.
- Warning systems – speakers, flashing lights or traffic lights.
- Wall controls.
- Uninterrupted Power Supply (UPS).
- Switches and timers.

If accessories are selected in SELECTIONS, delete text here.

Refer to the Grifco website [www.grifco.com.au/commercial-door-automation-accessories](http://www.grifco.com.au/commercial-door-automation-accessories) for commercial door operator accessories.

### 3 EXECUTION

#### 3.1 INSTALLATION

##### General

Requirement: Install overhead doors in conformance with the manufacturer's recommendations and as documented.

##### Preparation

Substrate: Before start of installation, check the alignment of substrates or framing and adjust if required.

Clearances: Check openings accommodate support brackets and door guides with the required clearances.

##### Manual operation

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

Requirement: Install a GRIFCO manual operator in conformance with the manufacturer's recommendations, and as documented.

##### Motorised operators

Requirement: Install a GRIFCO motorised operator in conformance with the manufacturer's recommendations, and as documented.

Installation instructions are available from GRIFCO, along with a range of wall brackets, mounting plates, braking angles and mounting hardware kits. Refer to the Grifco website [www.grifco.com.au/downloads/](http://www.grifco.com.au/downloads/) for operator installation instructions.

##### Frames, guides and tracks

Requirement: Install frames, guides and tracks as follows:

- Plumb, level, straight, true, and within tolerances and clearances recommended by the manufacturer.
- Fixed or anchored to the building structure using mechanical fixings suitable for the substrate and the imposed loads.
- Isolated from any building loads, including loads caused by structural deflection or shortening.

Consider acoustic isolation for overhead doors in car parks for residential developments and other sensitive locations..

#### 3.2 COMPLETION

##### Operation

General: Make sure moving parts operate freely and smoothly, without binding or sticking, at correct tensions or operating forces and that they are lubricated where appropriate.

Safety: Make sure all safety features are operating.

Remote control devices: Make sure devices are programmed and operating.

**Protection**

Temporary coating: On or before the date for practical completion of the works, or before joining up to other surfaces, remove all traces of temporary coatings used for protection.

**Operation and maintenance manuals**

Requirement: Prepare a manual that includes the manufacturer's published instructions for operation, care and maintenance.

Compliance with this clause targets the Operations and Maintenance requirement within the Minimum Expectation level of the Verification and Handover credit in Green Star Buildings (2021).

**Warranties**

Requirement: Cover materials and workmanship in the terms of the warranty in the form of interlocking warranties from the manufacturer and the installer.

- Form: Against failure of materials and execution under normal environment and use conditions.
- Period: As offered by the manufacturer and the installer.

Use only if warranties extending beyond the defects liability period are available for the particular system. Insert the required warranty period and terms, which should be negotiated beforehand. If the warranty is in the form of separate material and installation warranties, the signatures of both manufacturer and installer are required.

If specifying warranties, include the following:

- Warranty.
- Minimum period.
- Form of warranty.
- Powder coating.
- Hardware.

The form(s) required should be provided as part of the contract documentation.

GRIFCO provides the following warranty periods:

Operators:

- 24 months or,
- Nominated cycle-count.

Accessories:

- 1 year.

**4 SELECTIONS**

**Schedules** are a tool to specify properties required for products or systems. If the principal permits documentation of the product or system by proprietary name, some of the properties may be unnecessary and can be deleted. Document the product or system's location or application here and/or on the drawings with a matching project code. Refer to NATSPEC TECHnote GEN 024 for guidance on using and editing schedules.

**4.1 PERFORMANCE****Overhead door performance schedule**

|   | A | B | C |
|---|---|---|---|
| Classification to AS/NZS 4505 (2012)          |   |   |   |
| Ultimate wind pressure rating                 |   |   |   |
| Wind-borne debris impact rating               |   |   |   |
| Fire-resistance level (FRL)                   |   |   |   |
| Bushfire attack level (BAL) to AS 3959 (2018) |   |   |   |
| Airborne sound insulation                     |   |   |   |

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Classification to AS/NZS 4505 (2012): Select from Domestic, General purpose – low cycle, General purpose – medium cycle and General purpose – high cycle. A Domestic door is suitable for garage doors for NCC Class 1 and 10 buildings. General

purpose doors are suitable for Classes 1 to 10 buildings and with the sub-classifications depending on opening frequency. See AS/NZS 4505 (2012) Section 5 on duty cycles and typical applications.

Ultimate wind pressure rating:

- Domestic: See AS/NZS 4505 (2012) Table 5.2.
- General purpose: To AS/NZS 1170.2 (2021). See AS/NZS 4505 (2012) clause 5.2.2.3.

Wind-borne debris impact rating: Required or Not required.

Fire-resistance level (FRL): If required, nominate the FRL to AS 1530.4 (2014). See NATSPEC TECHnote DES 020 on fire behaviour of building materials and assemblies.

Bushfire attack level: If required, nominate the BAL. Refer to AS 3959 (2018) for construction requirements associated with the BAL of the site.

Airborne sound insulation: State the required rating to AS/NZS ISO 717.1 (2004) for either the weighted sound reduction index ( $R_w$ ) or weighted sound reduction index with spectrum adaptation ( $R_w + C_{tr}$ ). This rating is for a building system e.g. partition wall, of which the building element is only one component. It may be better to provide the rating in the appropriate system schedule. It is advisable to obtain the advice of an acoustic consultant on the selection of an  $R_w$  or  $R_w + C_{tr}$  rating for airborne sound transmission reduction. Refer to NATSPEC TECHnote DES 032 for information.

## 4.2 PRODUCT

These schedules refer to the selections of the door by its properties, but does not locate it within the project. For this you should prepare a separate document, e.g. a Door schedule to locate them by reference to a designation code.

### Sectional overhead door schedule

|                                       | SO1 | SO2 | SO3 |
|---------------------------------------|-----|-----|-----|
| Product                               |     |     |     |
| Action                                |     |     |     |
| Panels: Size (mm)                     |     |     |     |
| Panels: Material                      |     |     |     |
| Panels: Finish                        |     |     |     |
| Panels: Colour                        |     |     |     |
| Panels: Frame                         |     |     |     |
| Panels: Thickness (mm)                |     |     |     |
| Panels: Perforations                  |     |     |     |
| Panels: Windows                       |     |     |     |
| Side tracks: Thickness (mm)           |     |     |     |
| Side tracks: Wheel hangers and hinges |     |     |     |
| Side tracks: Wheel rollers            |     |     |     |
| Vertical guides: Material             |     |     |     |
| Vertical guides: Size                 |     |     |     |
| Vertical guides: Finish               |     |     |     |
| Operation method                      |     |     |     |
| Motorised operation: Motor type       |     |     |     |
| Accessories                           |     |     |     |
| Hardware: Item                        |     |     |     |
| Hardware: Material                    |     |     |     |
| Hardware: Finish                      |     |     |     |

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Product: Nominate the brand name and model or delete. Amend the schedule as appropriate. Specification by proprietary item (manufacturer's standard door suite), will automatically cover most of the prescriptive items in this schedule.

Action: i.e. the position of the retracted door. The manufacturer's terms for sectional doors are Vertical lift, High lift, Follow the roof, etc. The action may be shown on the drawings.

Panels:



- Panel material and finish: e.g. Steel sheets (Colorbond® or powder coat finish), Timber (presealed, oiled or raw), Clear acrylic, Roll formed steel (galvanized or prepainted), Aluminium (anodised or powder coated), other cladding options (e.g. steel bars, perforated sheets or mesh in steel or aluminium, profiled or flat steel sheets with Colorbond® or powder coat finish).
- Frame: e.g. Extruded aluminium sections. Some panels (e.g. acrylic, mesh), require a surround frame. Delete if not required.
- Perforations: e.g. Louvred, or perforated openings in steel panels are available as an option. State percentage of free open area, or show location of perforations on the drawings. Delete if not required.
- Windows: Available as an option. Delete if not required.

Side tracks:

- Thickness: e.g. 1.6 mm.
- Wheel hangers and hinges: e.g. Fabricated from 1.6 or 2.0 mm galvanized steel.
- Wheel rollers: e.g. Nylon or Ball bearing steel.

Operation method: e.g. Manual (Pull rope or Handle), or Motorised.

Motorised operation: See GRIFCO for options. Select from the following:

- Motor type: S-Drive; LS-Drive.

Accessories: See GRIFCO for options. Select from the following:

- Photocell or IR beam.
- Light fixture.
- Manual release handle.
- Battery-powered radio remote transmitter.
- Push-button or key switch.
- Internet connectivity.
- Obstruction detection.
- Reversing starters.
- Warning systems – speakers, flashing lights or traffic lights.
- Wall controls.
- Uninterrupted Power Supply (UPS).
- Switches.
- Timers.

Hardware: e.g. Handles, bolts, locks. The hardware is an integral part of the installation. Consult the manufacturers. The description may be cross referred to non-standard items documented in detail in *0455 Door hardware*. Locking options available include the following:

- Keyed: Inside, outside or both.
- Manual: Shoot bolts.
- Motorised: Push-button (standard) or Key switch (internally or externally).

**Rolling curtain and rolling shutter door schedule**

|                       | RO1 | RO2 | RO3 |
|-----------------------|-----|-----|-----|
| Type                  |     |     |     |
| Product               |     |     |     |
| Curtain: Type         |     |     |     |
| Curtain: Material     |     |     |     |
| Curtain: BMT (mm)     |     |     |     |
| Curtain: Finish       |     |     |     |
| Curtain: End material |     |     |     |
| Curtain: Slat size    |     |     |     |
| Perforations: Size    |     |     |     |
| Perforations: Pattern |     |     |     |
| Bottom rail: Form     |     |     |     |
| Bottom rail: Material |     |     |     |

|                                 | RO1 | RO2 | RO3 |
|---------------------------------|-----|-----|-----|
| Bottom rail: Size               |     |     |     |
| Bottom rail: Finish             |     |     |     |
| Vertical guides: Material       |     |     |     |
| Vertical guides: Size (mm)      |     |     |     |
| Vertical guides: Finish         |     |     |     |
| Vertical guides: Fixing method  |     |     |     |
| Mullions: Type                  |     |     |     |
| Mullions: Method of removal     |     |     |     |
| Drum: Material                  |     |     |     |
| Drum: Size (mm)                 |     |     |     |
| Drum brackets: Materials        |     |     |     |
| Drum brackets: Finish           |     |     |     |
| Drum brackets: Fixing           |     |     |     |
| Operation method                |     |     |     |
| Manual: Hoist type              |     |     |     |
| Motorised operation: Motor type |     |     |     |
| Safety features                 |     |     |     |
| Hardware: Item                  |     |     |     |
| Hardware: Material              |     |     |     |
| Hardware: Finish                |     |     |     |
| Accessories                     |     |     |     |
| Wicket: Size of opening (mm)    |     |     |     |

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

Type: e.g. Rolling curtain, Rolling shutter or Roller grille.

Product: Nominate the brand name and model or delete. Amend the schedule as appropriate. Specification by proprietary item (manufacturer's standard door suite), will automatically cover most of the prescriptive items in this schedule.

Curtain type, material and finish: e.g.:

- Rolling curtain: Prepainted or Colorbond® finished steel.
- Rolling shutters: Roll formed galvanized steel ( Colorbond® or powder coat finish), Extruded aluminium (anodised or powder coated), Timber (presealed, oiled or raw), Clear polycarbonate panels with aluminium members (Clear anodised or powder coat finish).
- Roller grilles: Aluminium (anodised or powder coated). Some heavy duty roller grilles consist of galvanized steel tubes sleeved with aluminium tubes.
- Thickness: e.g. 0.50 mm.
- End material: Usually nylon low friction wear pad. Special windlock end pieces locking into vertical guides are available with some types. Obtain manufacturer's recommendations.
- Slat size: Slat width and material thickness.

Perforations: If required, state size and pattern. State percentage of free open area, or show location of perforations on the drawings. Steel and aluminium slats may be slotted or perforated.

Bottom rail:

- Form: e.g. Box section, Tee section, Paired angles. Specify special requirements, e.g. housing shoot bolts or locksets.
- Material: Usually extruded aluminium or rolled metallic-coated steel.
- Finish: Usually the same as the curtain.

Vertical guides:

- Material: Extruded aluminium or rolled steel. Some have PVC strip inserts. Special deep high wind guides available with some types.
- Finish: Usually as for curtain or grille.

- Fixing method: Some types have concealed fixings.

Mullions: Delete if not required.

- Method of removal: e.g. Lift out, Hinge up, Sliding, Winch operated.

Drum:

- Material: Usually steel or aluminium. PVC-U available with some roller door types.
- Size: State diameter and thickness of tube.
- Finish: Steel may be galvanized and/or prime painted.

Drum brackets:

- Material: e.g. Fabricated from mild steel sections or plate, or from pressed steel sheet, or Cast iron.
- Finish: May be galvanized and/or prime painted.
- Fixing: e.g. Not less than two M 10 bolts galvanized to AS/NZS 1214 (2016), passing through (or embedded in) the wall or (in timber framing), or Three 10 mm diameter coach screws galvanized to AS/NZS 1214 (2016).

Operation method: e.g. Manual or motorised.

Manual operation:

- Direct.
- Hand stick.
- Chain.
- Crank handle.

Motorised operation: See GRIFCO for options. Select from the following:

- Motor type: E-Drive; M-Drive; LR-Drive; E-Drive RKML.

Accessories: See GRIFCO for options. Select from the following:

- Photocell or IR beam.
- Light fixture.
- Manual release handle.
- Battery-powered radio remote transmitter.
- Push-button or key switch.
- Internet connectivity.
- Obstruction detection.
- Reversing starters.
- Warning systems – speakers, flashing lights or traffic lights.
- Wall controls.
- Uninterrupted Power Supply (UPS).
- Switches.
- Timers.

Hardware: e.g. Handles, bolts, locks. The hardware is an integral part of the installation. Consult the manufacturers. The description may be cross referred to items specified in detail in *0455 Door hardware*. List non-standard hardware here. Locking options available include the following:

- Keyed: Inside, outside or both.
- Lock: Fitted in bottom rail or mid-rail.
- Manual: Shoot bolts.
- Motorised: Push-button (standard) or Key switch (internally or externally).

Accessories: Manufacturer's standard or optional items, e.g. nylon running strips (for continuous curtain), sponge rubber or multi-fin weatherstrips on bottom curtain rail, draught excluding strips in vertical guides, resilient strips on bottom curtain rail.

Wicket: For rolling shutters, not available on all types. Consult manufacturer. Full-size outward opening exit doors are available with some types. Show location on drawings. Avoid placing it on the same side as the chain and electrical operating gear, where it may cause obstruction. Avoid using gates on windlocked shutters. Nominate left hand or right hand opening as viewed from the inside.

Size of opening: e.g. 1200 x 600 mm 1700 x 600 mm.

**Fire-resistant roller shutter schedule**

|                             | FS1 | FS2 | FS3 |
|-----------------------------|-----|-----|-----|
| Fire-resistance level (FRL) |     |     |     |

|   | FS1 | FS2 | FS3 |
|---|-----|-----|-----|
| Bushfire attack level (BAL) to AS 3959 (2018) |     |     |     |
| Product                                       |     |     |     |
| Slat thickness (BMT)                          |     |     |     |
| Finish: Curtain slats                         |     |     |     |
| Finish: Slat end pieces                       |     |     |     |
| Finish: Vertical guides                       |     |     |     |
| Finish: Bottom rail                           |     |     |     |
| Finish: Barrel mechanism                      |     |     |     |
| Finish: Hauling chains                        |     |     |     |
| Normal operating mechanism                    |     |     |     |
| Manual operation: Hoist type                  |     |     |     |
| Motorised operation: Motor type               |     |     |     |
| Accessories                                   |     |     |     |
| Hardware: Item                                |     |     |     |
| Hardware: Material                            |     |     |     |
| Hardware: Finish                              |     |     |     |
| Sensing device                                |     |     |     |

The codes in the header row of the schedule designate each application or location of the item scheduled. Edit the codes to match those in other contract documents.

AS 1905.2 (2005) sets out design and testing requirements for fire-resistant roller shutters (also referred to as fire shutters).

Add other requirements if necessary to comply. The use of fire shutters in place of required fire doors may not be permitted in some instances. Not being insulated they can be a heat radiation hazard.

Fire-resistance level (FRL): State required level in minutes, e.g. -/120/120/10 to AS 1530.4 (2014). See NATSPEC TECHnote DES 020 on fire behaviour of building materials and assemblies.

Bushfire attack level: If required, nominate the BAL. Refer to AS 3959 (2018) for construction requirements associated with the BAL of the site.

Product: Nominate the brand name and model or delete. Amend the schedule as appropriate. Specification by proprietary item (manufacturer's standard door suite), will automatically cover most of the prescriptive items in this schedule.

Slat thickness (BMT): e.g. 1.0 mm.

Finish: e.g.:

- Powder coating: There may be door size restrictions. Consult the manufacturer.
- Primed and painted.

Normal operating mechanism: Automatic operation in the event of fire is mandatory. Specify here the type of operation for normal service, e.g.:

- Hold open: Remains open except when automatic closing is activated.
- Hand operation.

Manual: Hoist type:

- Fire Shutter Manual Hoist

Motorised operation:

- Motor type: Select from GRIFCO Fire shutter operators.

Accessories: Select from the following:

- Fusible link.
- Holding magnet.

Hardware: e.g. Handles, bolts, locks. The hardware is an integral part of the certified installation. Consult the manufacturers. The description may be cross referred to items specified in detail in *0455 Door hardware*. List non-standard hardware here.

Sensing device: The operating system may be directly wired to a fire alarm system or smoke detectors, for activation to close, in addition to the fusible link.

#### REFERENCED DOCUMENTS

**The following documents are incorporated into this worksection by reference:**

|                    |      |  |
|--------------------|------|--|
| AS/NZS 1170        |      | Structural design actions  |
| AS/NZS 1170.2      | 2021 | Wind actions   |
| AS 1530            |      | Methods for fire tests on building materials, components and structures  |
| AS 1530.4          | 2014 | Fire-resistance tests for elements of construction   |
| AS 1530.8.1        | 2018 | Tests on elements of construction for buildings exposed to simulated bushfire attack<br>- Radiant heat and small flaming sources |
| AS 1530.8.2        | 2018 | Tests on elements of construction for buildings exposed to simulated bushfire attack<br>- Large flaming sources                  |
| AS 1905            |      | Components for the protection of openings in fire-resistant walls  |
| AS 1905.2          | 2005 | Fire-resistant roller shutters   |
| AS 3959            | 2018 | Construction of buildings in bushfire-prone areas  |
| AS/NZS 4505        | 2012 | Garage doors and other large access doors  |
| AS/NZS 60335       |      | Household and similar electrical appliances - Safety   |
| AS/NZS 60335.1     | 2022 | General requirements (IEC 60335-1 Ed 6, MOD)   |
| AS/NZS 60335.2.103 | 2016 | Particular requirements for drives for gates, doors and windows  |

**The following documents are mentioned only in the *Guidance* text:**

|                  |      |  |
|------------------|------|--|
| AS ISO 717       |      | Acoustics - Rating of sound insulation in buildings and of building elements                                 |
| AS/NZS ISO 717.1 | 2004 | Airborne sound insulation  |
| AS/NZS 1214      | 2016 | Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series)<br>(ISO 10684:2004, MOD) |
| GBCA Buildings   | 2021 | Green Star Buildings   |
| NATSPEC DES 020  |      | Fire behaviour of building materials and assemblies  |
| NATSPEC DES 032  |      | Airborne sound insulation  |
| NATSPEC GEN 006  |      | Product specifying and substitution  |
| NATSPEC GEN 024  |      | Using NATSPEC selections schedules   |
| NATSPEC TR 01    |      | Specifying ESD   |