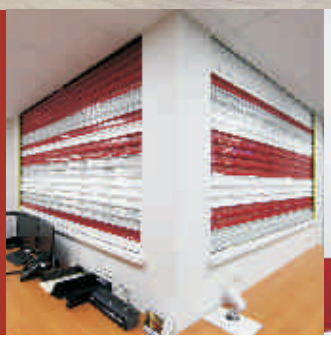
ANVIL

ANVIL DOORS



Anvil Doors has extensive experience in the design, production and maintenance of roller shutters, roller doors and roller grilles.

Steel roller shutters are a proven versatile style of door, ideal for non-cyclonic and cyclonic areas, and are equipped with wind locks for all openings.

Aluminium roller shutters and stainless steel roller shutters are a proven versatile style of door.

They secure both small and large openings. Anvil Doors can custom design and build to your specifications.

Anvil Doors offer an Australia wide quality service and are dedicated to customer satisfaction.

Contents

September 2014

Anvil Doors manufacture roller shutters for a wide variety of applications and environmental conditions such as

- Municipal Swimming Pools
- Staff Canteens
- Kitchen Serveries
- Truck and Van Shutters
- Retail Stores
- Service Stations
- Kiosks
- Reception Desks
- Substations
- Shopfronts
- Compressor and Engine Rooms
- Club and Hotel Bars
- Showcases
- Control Cabinets
- Naval Vessels and other ships
- Bowling Clubs
- Warehouses
- Shipping Container Modifications
- Workshops
- Mining Industries

This catalogue has been produced for the benefit of architects, engineers, builders and clients. It contains technical information and specifications relating to all types of roller shutters. To keep you up to date, new developments, applications and product information is available on our website.

Introduction

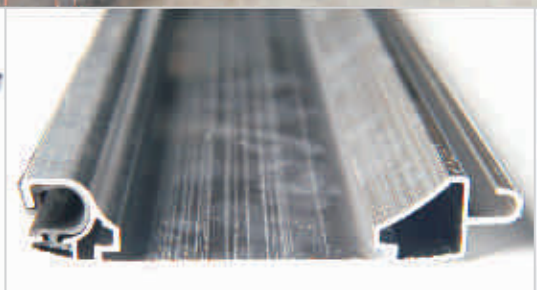
Founded in 2000, Anvil Doors is a wholly owned Western Australian business, well known and respected for reliability and quality of product and services in the commercial and industrial field.

We are proud of our reputation which has been achieved by maintaining high standards of strict quality control and high Occupation Health and Safety regulations in the manufacture, delivery and installation of our products, after sales service and ready availability of technical advice.

Manufactured to relevant BCA Regulations & Australian Standards, Anvil Doors are the natural choice for trouble-free service in operation, with after sales service available in the event of damage or malfunction resulting from improper use.

Employing the best people in their trades Anvil Doors recognises the future by employing and training apprentices and is recognised as an apprenticeship company.

Anvil Doors are OEM agents for Grifco products, part of the Chamberlain Group, the world's largest manufacturer of residential and commercial openers, who have been operating and manufacturing in Australia for over 100 years.

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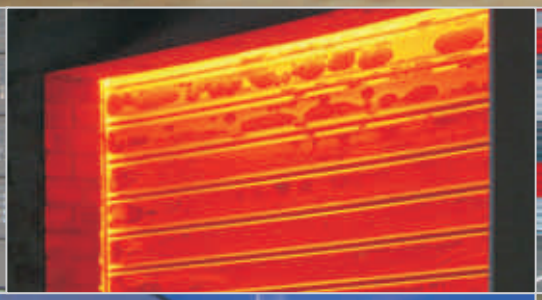

NOTES

105 Cyclonic Steel Door System

Constructed to cyclonic region specifications (AS/NZS 1170.2 - 2002)

SOUND AND SECURE

Roller Shutters are a proven versatile style of door, ideal for cyclonic areas. They are available with smooth manual or power operation in either galvanised or the full colour range of powder coated finishes. They can be sized to suit openings up to a large 49m^2.

Roller shutters are ideal for both external and internal installations in most building projects including warehouses, factories, shopping centres, recreation and sporting centres, mining and heavy industry workshop facilities.

CURTAIN

The curtain is manufactured from interlocking, roll-formed, steel slats. The ends of each alternate slat are fitted with hardened cast iron end clips, designed to stop lateral movement and provide a smooth, operation. Curtain as standard is windlocked every slat.

BOTTOM RAIL

The bottom rail of the shutter is extruded aluminium section. A weather seal is fitted as standard to minimise the entry of dust or dirt.

DRUM

The drum is manufactured from mild steel tube. The drum houses bearings counter balancing helical torsion springs, capable of producing sufficient torque to ensure ease of operation of the curtain from any position. With 1.0mm or 1.2mm steel slats with cast windlock clips every slat. Optional powder coat colours.

HEAVY DUTY GUIDE ASSEMBLY

90mm deep with wall thickness of 2.95mm with formed lock rail running full length of guide to secure wind lock clips with patent pending (AU2012261562) cyclonic guide clamp.

Cyclone Testing Station
Wind Engineering Research, Testing and Community Education

JAMES COOK UNIVERSITY
AUSTRALIA

Cyclone Testing Station
School of Engineering and Physical Sciences
James Cook University
Townsville Qld 4811 Australia

Telephone (07) 4781 4754
Facsimile (07) 4781 6788
Email: jcu.cts@jcu.edu.au
www.jcu.edu.au/cts

TEST SUMMARY SHEET – TS880

Reappraisal Date of Summary of Test Results Sheet: 31 December 2016 (See Note 3 below)

Simulated wind driven debris impact testing was conducted on roller shutter door assemblies. The testing was performed with the use of new materials provided by **Anvil Industrial Doors Pty Ltd.**

Description of Roller Shutter Door Assemblies and Set-Up Tested

Product Name:	Anvil Roller Shutter Door
Door Assembly:	Door curtain formed by interlocking slats supported in a Guide Assembly with Wind Locks. Guide supported by Guide Bracing System with Cyclone Clamps to a 200PFC jamb.
Door Slats:	0.95 mm Base Metal Thickness (BMT) steel slats with an overall height of about 123 mm and a cover height of 110 mm.
Wind Locks:	Long-tailed locks, 123 x 123 overall, and Short tailed locks, 75x50 overall, fitted alternatively. Long tailed locks have 4 rivets per Slat, Short tailed locks have 2 rivets per Slat. Locks are cast steel. Wind Locks to all Slats.
Door Guide Assembly:	90 × 45 × 3.0 mm U shaped with a 20 mm lip to engage Wind Locks, welded to a 75×59×4.0 RHS. Assembly bolted to the web of a 200PFC jamb at 250 centres.
Guide Brace System:	50×25×3.0 RHS held against the inside face of the door guide with Cyclone Clamps.
Cyclone Clamps:	C shaped clamps welded to the Guide Brace and bolted to the web of the 200 PFC jamb. Clamps of 5 mm steel approximately 330 mm long and 170 mm deep.
Overall Door Size:	1800 mm high and 2710 mm clear opening.

Client's Details

Name of Client:	Anvil Industrial Doors Pty Ltd.
Address of Client:	19 Excellence Drive, Wangara, Western Australia, 6065.

Report and Test Details

Report Details:	Cyclone Testing Station Report No. TS880, dated 11 February, 2013.
Report Title:	Simulated Windborne Debris Impact Testing of Roller Shutter Door Assemblies
Impact Testing:	Testing to Clause 2.5.7 of AS/NZS1170.2:2011

Impact location	Missile	Measured Velocity (m/s)	Result
Adjacent Short-Tailed Wind Clip at Cyclone Clamp with two Short Braces	4 kg, 100 x 50 mm cross-section timber	35.7	Pass
Mid-span of Door		35.5	Pass
Adjacent Short-tailed Wind Clip at Cyclone Clamp with one Long Brace		36.0	Pass
Mid-span of Door	2 g steel spheres 5 shots	45.0, 47.6, 46.3, 43.0, 43.1	Pass

Conditions of Use

1. Test results are only applicable for materials and test geometries used;
2. Refer to Report No. TS880, (contact Anvil Industrial Doors Pty Ltd) for full details of the specimen, test methods, test criteria and results;
3. These test results are based on legislation and standards that are current at the time of issue and may be subject to change. Therefore this Test Summary Sheet should be reappraised by the date noted.

Signed .....

Mr. A.P. Hatfield
Testing Engineer

Date 11 FEB 13

Signed C. Leitch

Mr. C. J. Leitch
Senior Consulting Engineer

Date 11-2-2013

Cyclone Testing Station
Wind Engineering Research, Testing and Community Education

JAMES COOK UNIVERSITY AUSTRALIA

Cyclone Testing Station
School of Engineering and Physical Sciences
James Cook University
Townsville Qld 4811 Australia

Telephone (07) 4781 4754
Facsimile (07) 4781 6788
Email: jcu.cts@jcu.edu.au
www.jcu.edu.au/cts

TEST SUMMARY SHEET – TS893

Reappraisal Date of Summary of Test Results Sheet: 30 June 2017 (See Note 2 below)

Simulated wind driven debris impact testing was conducted on roller shutter door assemblies. The testing was performed with the use of new materials provided by **Anvil Industrial Doors Pty Ltd.**

Description of Roller Shutter Door Assemblies and Set-Up Tested

Product Name:	Anvil Roller Shutter Door
Door Assembly:	Door curtain formed by interlocking slats supported in a Guide Assembly with Wind Locks. Guide supported by Guide Bracing System with Cyclone Clamps to a 200PFC jamb.
Door Slats:	1.15 mm Base Metal Thickness (BMT) steel slats with an overall height of about 123 mm and a cover height of 110 mm.
Wind Locks:	Long-tailed locks, 123 x 123 overall, and Short tailed locks, 75x50 overall, fitted alternatively. Long tailed locks have 4 rivets per Slat, Short tailed locks have 2 rivets per Slat. Locks are cast steel. Wind Locks to all Slats.
Door Guide Assembly:	90 × 45 × 3.0 mm U shaped with a 20 mm lip to engage Wind Locks, welded to a 75×59×4.0 RHS. Assembly bolted to the web of a 200PFC jamb.
Guide Brace System:	50×25×3.0 RHS held against the inside face of the door guide with Cyclone Clamps.
Cyclone Clamps:	C shaped clamps welded to the Guide Brace and bolted to the web of the 200 PFC jamb. Clamps of 5 mm steel approximately 330 mm long and 170 mm deep.
Overall Door Opening:	2710 mm clear opening.

Client's Details

Name of Client:	Anvil Industrial Doors Pty Ltd.
Address of Client:	19 Excellence Drive, Wangara, Western Australia, 6065.

Report and Test Details

Report Details:	Cyclone Testing Station Report No. TS893, dated 24 April, 2013.
Report Title:	Simulated Windborne Debris Impact Testing of Roller Shutter Door Assemblies
Impact Testing:	Testing to Clause 2.5.7 of AS/NZS 1170.2:2011

Impact location	Missile Type	Measured Velocity (m/s)	Result
Adjacent the "G" Clamp of the Cyclonic Clamp. On slat next to wind locks with only two rivets	4 kg, 100 × 50 mm cross-section timber	40.0	Pass
Midspan of the door, on the interface between two slats		39.7	Pass
Adjacent the "G" Clamp of the Cyclonic Clamp. On slat next to wind locks with only two rivets		39.7	Pass
Grouped near mid-span of door	2 g steel spheres; 5 shots	44.2; 46.7; 43.9; 43.5; 43.5	Pass

Conditions of Use

1. Refer to Report No. TS893, (contact Anvil Industrial Doors Pty Ltd) for full details of the specimen, test methods, test criteria and results;
2. These test results are based on legislation and standards that are current at the time of issue and may be subject to change. Therefore this Test Summary Sheet should be reappraised by the date noted.

Signed ....

Mr. T. Walther
Senior Engineer

Mr. C. J. Leitch
Senior Consulting Engineer

Date 24/4/2013 24-4-2013

Correspondence No: XXXX

28 February 2013

Anvil Industrial Doors
19 Excellence Drive
WANGARA WA 6065

Dear Paul,

SAMPLE: PROJECT TBC
FINAL STRUCTURAL ENGINEERING ROLLER SHUTTER DOOR CERTIFICATION

We confirm that we have completed the structural assessment of the roller shutter doors listed hereunder. We confirm that the roller doors as specified below comply with the relevant wind loads as stated in AS1170.2:2011 for the required wind region D, Terrain Category 2 and Importance level 2. The impact criteria test results by others relating to clause 2.5.7 have been attached.

Certified roller doors are as follows:

Roller Shutter Door Size	Slat Component Number
7000h x 7000w (Maximum Height & Width)	G2Z275 GALVABOND 1-105

All doors require a 4 Hole Cast Iron Wind-lock Clip on every second slat and a 2 Hole Cast Iron Wingless Wind-lock Clip on every Alternate Slat. All wind-lock clips fixed to slat with 4-1/4" rivets.

Cyclonic Clamps are required at a maximum spacing of 800 mm.

Design calculations for each roller door are attached.

Should you have any further queries relating to the above matters, or require any further information, please do not hesitate to contact our office on the details provided.

Yours sincerely,

John Smith
B.E (Hons), MIE Aust, RPEQ
Senior Structural Engineer

peritas group
41 Stuart Street
Perth WA 6000
PO Box 143
Northbridge WA 6865
T 08 9388 2666
F 08 9328 3515
E enquire@peritasgroup.com.au
www.peritasgroup.com.au

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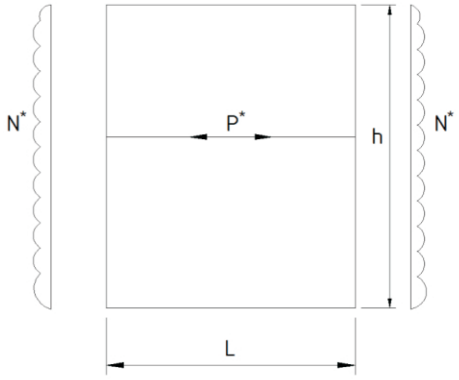
	Designed by	CB	Date	
	Checked by	AVDM	Date	
Project		Sample		
Subject		7000h x 7000w Anvil Roller Door Certification		



Roller Door Properties

Roller Door Height -	h =	7000	mm
Roller Door Width -	L =	7000	mm
Windlock Take Up	ws =	68	mm

Note: Windlock take up supplied by Anvil

Wind Loading

Wind Region - Region D Terrain Category = 2 Importance Level - 2

Pressure Coefficients

Windward Wall -	$C_{p,e}$ =	0.7		
Internal -	$C_{p,i}$ =	-0.2		
Combination Factor -	$K_{c,e}$ =	0.8	Local Pressure Factor - kl =	1.5

Ultimate Wind Pressure ρ* = 5.28 kPa

Catenrary Deflection

$$\delta = \sqrt{\frac{3 * L * ws}{8}}$$

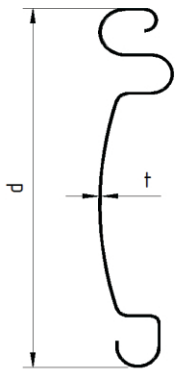
Max Deflection δ = 422 mm

Catenary Force

$$Nc^* = \frac{\rho^* * L^2}{8 * \delta}$$

Catenary Force Nc* = 76.56 kN/m

Slat Axial Capacity Check



Slat Part No. -	G2Z275 GALVABOND 1-105		
Slat Depth -	d =	120	mm
Slat Thickness -	t =	0.8	mm
Cross Sectional Area -	Ag =	157	mm^2
Axial Load Per Slat -	Ns* =	9.19	kN
Yield Strength -	Fsy =	300	MPa
Ultimate Tensile Strength -	Fu =	350	MPa
Slat Axial Capacity -	φNt =	42.39	kN > Ns* OK!

peritas group	Job Number	PC12229	Page	of
	Designed by	CB	Date	
	Checked by	AVDM	Date	
Project		Sample		
Subject		7000h x 7000w Anvil Roller Door Certification		

Rivet Check

Rivet Size -		1/4"			
Rivet Shear Capacity -	φVr =	5.5	kN		
Number of Rivets Per Slat -	n =	4			
Shear Force Per Rivet -	Vr* =	2.30	kN	< φVr	OK!

Every second slat: 4 Hole cast iron windlock clip
Alternate slats: 2 Hole cast iron wingless windlock clip

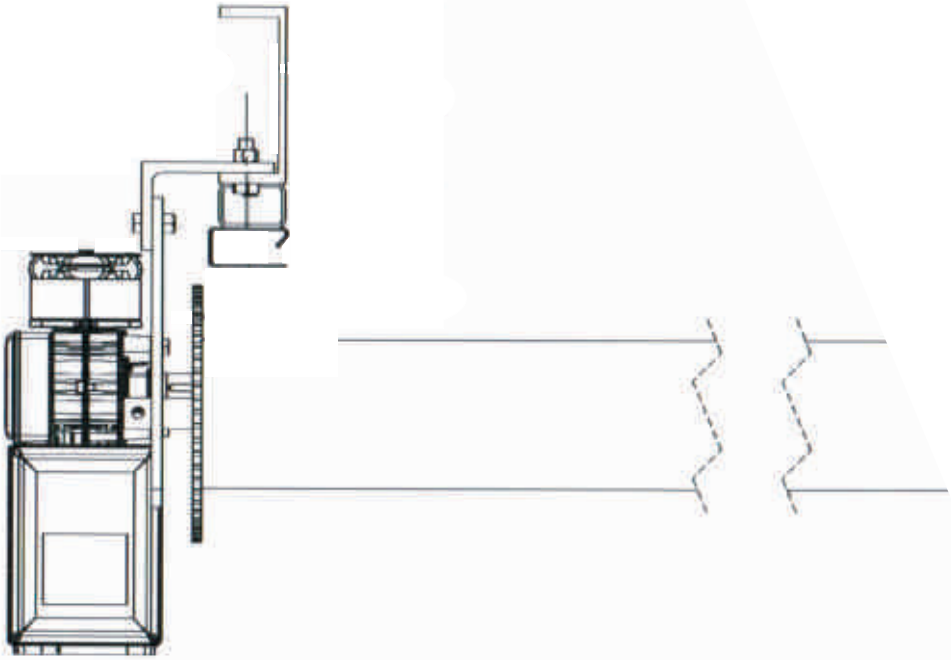
Support Track Check

Shear Force Per Track -	Vt* =	18.48	kN/m		
Stiffener Spacing -	S =	800	mm		
Moment In RHS -	M* =	1.48	kN.m		
RHS Size -		50 x 25 RHS 2.5			
Section Capacity -	φMsx =	1.61	kN.m	> M*	OK!

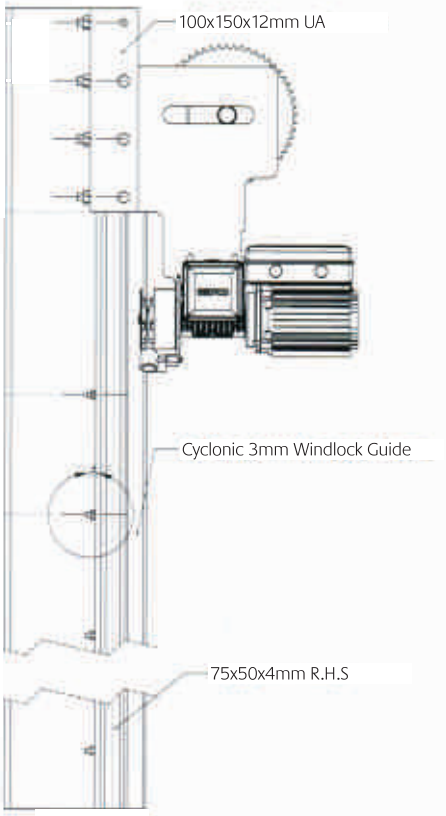
The Roller Door is found to satisfy the necessary wind loads under the following properties

Roller Door Size -	**7000**	**h x**	**7000**	**w**
Wind Region -	**Region D**			
Slat Part Number -	**G2Z275 GALVABOND 1-105**			
Rivet Size And Number -	**4 - 1/4"**	**Per Windlock Clip**		
Windlock Clip Every Second Slat -	**4 Hole cast iron windlock clip**			
Windlock Clip Every Alternate Slat -	**2 Hole cast iron wingless windlock clip**			
Support Track RHS -	**50 x 25 RHS 2.5**			
Supprot Track Max Stiffener Spacing -	**800**	**mm**		

Boltup guide assembly

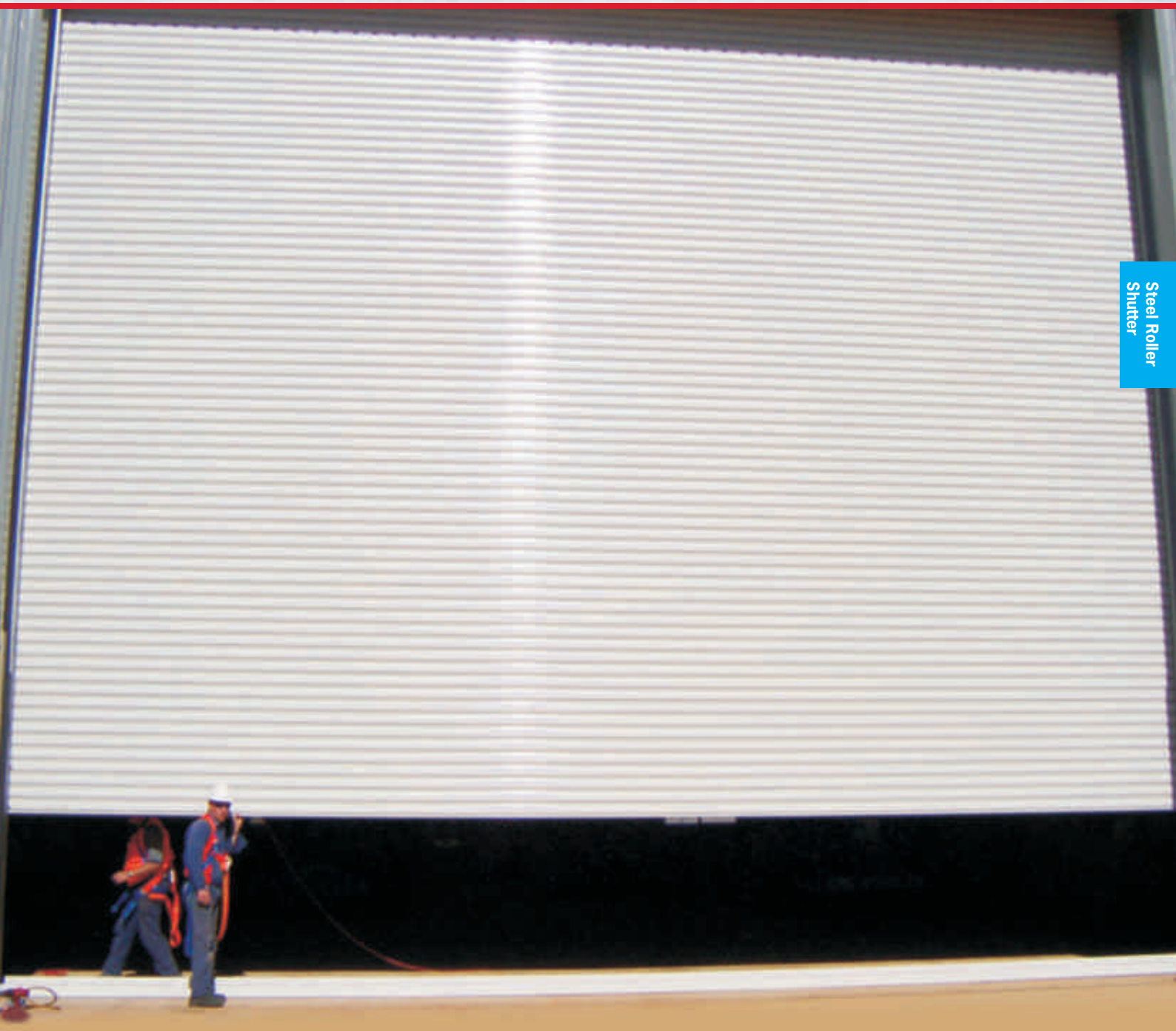


Boltup guide assembly
top view



Please call our technical representatives
regarding individual project design and layout

NOTES



105 Steel Roller Shutter

BHP Galvabond G2 Z275 steel in 1.2mm, 1.0mm, 0.8mm gauge slats.

SOUND AND SECURE

Roller Shutters are a proven versatile style of door, ideal for cyclonic areas. They are available with smooth manual or power operation in either galvanised or the full colour range of powder coated finishes. They can be sized to suit openings up to a large 130m ^{2}.

Roller shutters are ideal for both external and internal installations in most building projects including warehouses, factories, shopping centres, recreation and sporting centres, mining and heavy industry workshop facilities.

Specifications

CURTAIN
The curtain is manufactured from interlocking, roll-formed, steel slats. The ends of each alternate slat are fitted with hardened nylon or cast iron end clips, designed to stop lateral movement and provide smooth, quiet operation. Curtain as standard is windlocked every second slat.

BOTTOM RAIL
The bottom rail of the shutter is extruded aluminium section. A weather seal is fitted as standard to minimise the entry of dust or dirt (over 7500mm 65 x 65 x 5 angle used on Roller Shutters)

LOCKING
Standard locking is provided via:
1 **Standard**- A mild steel clasp, designed to secure the hand operated chain, and welded to the guide channel.
2 **Optional**- Two (2) shoot bolts, designed to accept padlocks, mounted at each end of the bottom rail.
3. **If motorised, no locking is recommended**

GUIDES
The guides are manufactured using a heavy section, roll formed channel.

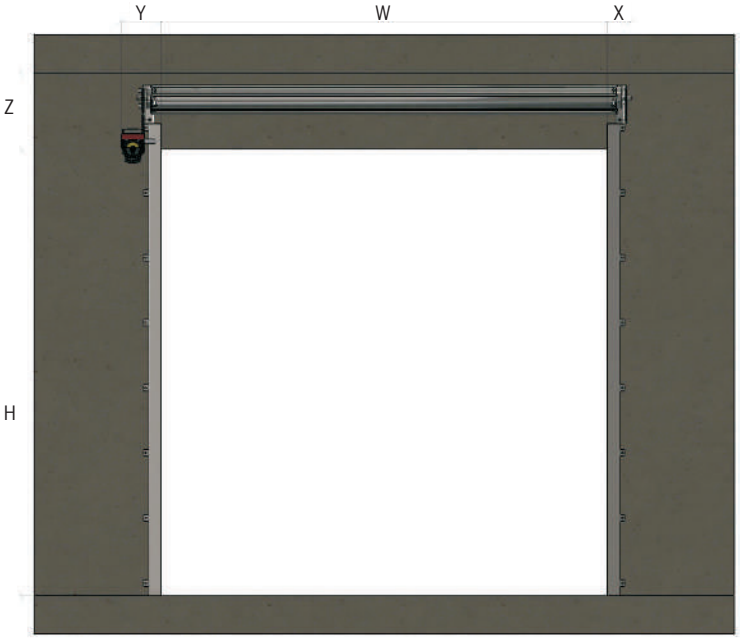
DRUM
The drum is manufactured from mild steel tube. The drum houses bearings counter balancing helical torsion springs, capable of producing sufficient torque to ensure ease of operation of the curtain from any position.

BRACKETS
Fabricated from mild steel plate, the mounting brackets are manufactured to suit door size and width.
Both the drum and mounting brackets are prime coated with one coat of zinc chromate.

FINISH
Galvabond Steel or Powdercoated with a full range of colours.

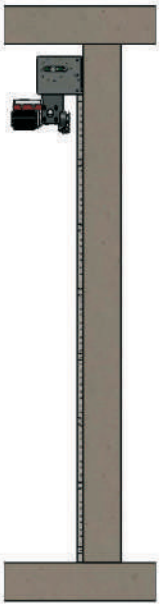
SLAT THICKNESS
0.8mm, 1.0mm, or 1.2mm

Example Side Room For Roller Shutter up to 49m ^{2}

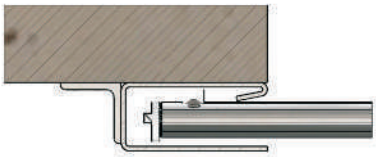


DIMENSION	DESCRIPTION	MIN. VALUE
H	OPENING HEIGHT	–
W	OPENING WIDTH	–
X	MINIMUM SIDE ROOM IDOL END	250
Y	MINIMUM SIDE ROO MOTOR SIDE	460
Z	MINIMUM HEAD ROOM	650

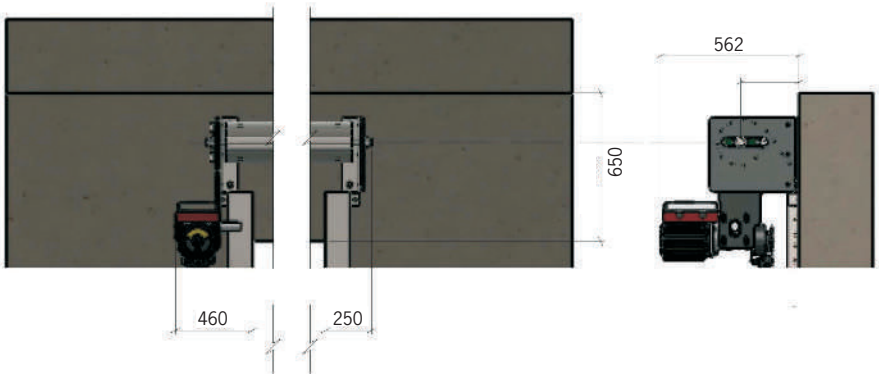
PLAN VIEW



SIDE ELEVATION



ELEVATION: INSIDE LOOKING OUT



Please contact Anvil Technical Support for verification and doors over 49m^2

Technical

SERIES 168 STEEL SHUTTER DOOR SYSTEM

DOOR CURTAIN ASSEMBLY
105mm slat profile (Galvabond- 0.8, 1.0 or 1.2mm-G2-Z275) with Windlocked Nylon clip on every second slat which secures curtain to guides.

HEAVY DUTY GUIDE ASSEMBLY
90mm deep with wall thickness of 2.95mm and formed lock rail running full length of guide to secure wind lock clips.

DRUM ASSEMBLY
168 od AS1163/AS1396 C350 casing with an internal axle which consists of a 48 od x 4mm w/t (AS1163 C350) pipe with 200mm x 35mm solid bright bar (CS1030gr) either end and supported by 35mm bearings (UCF 207).
Each drum consists of engineered specific spring assemblies which counter balance door curtain for safe, long and smooth operation.
All torsion spring used are coiled and heat treated to AS for performance and durability.
All drum and axle components are fabricated using high quality carbon steel.

BOTTOM RAIL ASSEMBLY
Aluminium T/Bar with bottom weather seal.

MOTOR OR MANUAL
Motor operation is a 1hp, 3 phase, 0.75kw (ML4103) motor
Door settings are all controlled by the door controller (C10A)

GEARBOX OIL
BP product GR-XP 150 ISO grade changed at 20 mth intervals when door is operated at typical daily cycle (2 operations).

TRANSMISSION DRIVE CHAIN
10B roller chain.

TRANSMISSION DRIVE SPROCKET
10b, 14 tooth sprocket with 31.75mm bore to fit on drive shaft of motor, Sprocket locked in with 8mm key way and 2 grub screws

SERIES 219 INDUSTRIAL STEEL SHUTTER DOOR SYSTEM

DOOR CURTAIN ASSEMBLY
105mm slat profile (Galvabond 1.0 or 1.2mm-G2-Z275) with Windlocked Nylon clip on every second slat which secure curtain in high winds (curtain deflection varies depending on door width).

HEAVY DUTY GUIDE ASSEMBLY
90mm deep with wall thickness of 2.95mm and formed lock rail running full length of guide to secure wind lock clips.

DRUM ASSEMBLY
219 od AS1163/AS1396 C350 casing with an internal axle which consists of a 61 od x 5.5mm w/t (AS1163 C350) pipe with 300mm x 50mm solid bright bar (CS1020gr) either end and supported by 50mm bearings (UCF 210).
Each drum consists of engineered specific spring assemblies which counter balance door curtain for safe, long and smooth operation.
All torsion spring used are coiled and heat treated to AS for performance and durability.
All drum and axle components are fabricated using high quality carbon steel.

BOTTOM RAIL ASSEMBLY
Aluminium T/Bar with bottom weather seal Up to 7 mtrs.
65x65x4mm Duragal angle with options for doors over 6.5mtrs wide with weather seal to suit.

MOTORS
Operation is by 1hp(415v, 0.75kw, ML103), 1.5hp(415v, 1.10kw, ML153),
Door settings are all controlled by the door controller (C10A).
2hp(415v, 1.15kw, 75004)
Door settings are all controlled by mechanical limits which are located on the side of motor.

GEARBOX OIL
BP product GR-XP 150 ISO grade changed at 20 mth intervals when door is operated at typical daily cycle (2 operations)

TRANSMISSION DRIVE CHAIN
60-1 roller chain.

TRANSMISSION DRIVE SPROCKET
12b, 15 tooth sprocket with 31.75mm bore to fit on drive shaft of motor, Sprocket locked in with 8mm key way and 2

SERIES 273 INDUSTRIAL STEEL SHUTTER DOOR SYSTEM

DOOR CURTAIN ASSEMBLY
105mm slat profile (Galvabond- 0.8, 1.0 or 1.2mm-G2-Z275) with Windlocked Nylon clip on every second slat which secure curtain in high winds (curtain deflection varies depending on door width).

HEAVY DUTY GUIDE ASSEMBLY
90mm deep with wall thickness of 2.95mm and formed lock rail running full length of guide to secure wind lock clips.

DRUM ASSEMBLY
273 od AS1163/AS1396 C350 casing with an internal axle which consists of a 60.3 od x 5.5mm w/t (AS1163 C350) pipe with 300mm x 50mm solid bright bar (CS1020gr) either end and supported by 50mm bearings (UCFC 210).

Each drum consists of engineered specific spring assemblies which counter balance door curtain for safe, long and smooth operation.

All torsion spring used are coiled and heat treated to AS for performance and durability.

All drum and axle components are fabricated using high quality carbon steel.

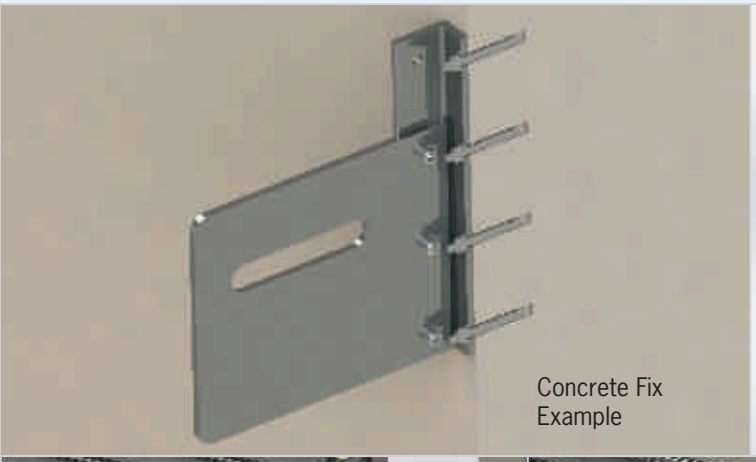
BOTTOM RAIL ASSEMBLY
Fabricated T/Section with bottom weather seal

MOTOR OR MANUAL
3-5hp(415v)
Door settings are all controlled by mechanical limits which are located on the side of motor.

GEARBOX OIL
BP product GR-XP 150 ISO grade changed at 20 mth intervals when door is operated at typical daily cycle (2 operations).

TRANSMISSION DRIVE CHAIN
60-2 roller chain.

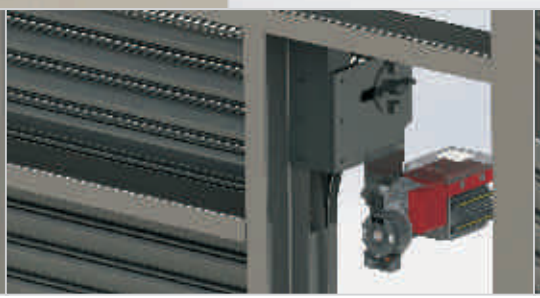
TRANSMISSION DRIVE SPROCKET
60-2, 19 tooth sprocket with 31.75mm bore to fit on drive shaft of motor, Sprocket locked in with 10mm key way and 2 locking screws.



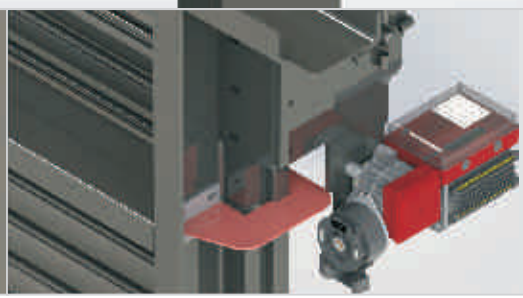
Concrete Fix Example

Steel Fix Example

Close up of Door with Pier Mount



Close up



Cyclonic steelwork hidden

NOTES

Stainless Steel Roller Shutter

Stainless Steel 316, 2B in 0.9mm gauge slats

CORROSION RESISTANCE

Roller Shutters are available with smooth manual or power operation in stainless steel and can be sized to suit openings up to a large 36m^2.

Roller shutters are ideal for both external and internal installations in most building projects including warehouses, factories, shopping centres, recreation and sporting centres, mining and heavy industry workshop facilities.

Specifications

CURTAIN
The curtain is manufactured from 75mm or 105mm interlocking, roll-formed, stainless steel slats. The ends of each alternate slat are fitted with hardened nylon end clips, or stainless steel windlocked end clips designed to stop lateral movement and provide smooth, quiet operation.

BOTTOM RAIL
The bottom rail of the shutter is extruded aluminium section. A weather seal is fitted as standard to minimise the entry of dust or dirt.

LOCKING
Standard locking is provided via:
1 **Standard**- A mild steel clasp, designed to secure the hand operated chain, and welded to the guide channel.
2 **Optional**- Two (2) shoot bolts, designed to accept padlocks, mounted at each end of the bottom rail.
3. If motorised, no locking required

GUIDES
The guides are manufactured using a heavy section, stainless steel channel.

DRUM
The drum is manufactured from stainless steel tube. The drum houses counter balancing helical torsion springs, capable of producing sufficient torque to ensure ease of operation of the curtain from any position.

BRACKETS: Fabricated from stainless steel plate, the mounting brackets are manufactured to suit door size and width.

FINISH
Natural Stainless Steel.

SLAT THICKNESS
0.9mm.

NOTES

Perforated Roller Shutter

BHP Galvabond G2 Z275 steel in 1.0mm gauge slats.

SOUND AND SECURE

Roller Shutters are a proven versatile style of door, ideal for non-cyclonic areas. They are available with smooth manual or power operation in the full colour range of powder coated finishes. They can be sized to suit openings up to a large 36m ^{2}.

Roller shutters are ideal for both external and internal installations in most building projects including warehouses, factories, shopping centres, recreation and sporting centres, mining and heavy industry workshop facilities.

Specifications

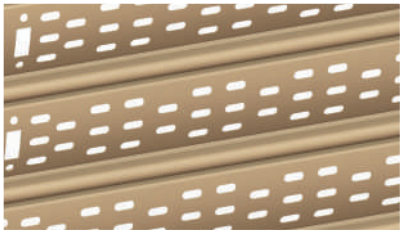
DOOR CURTAIN ASSEMBLY
105mm slat profile (Galvabond- 1.0mm or 1.2mm-G2-Z275) with Windlocked Nylon clip which secures curtain into guides.

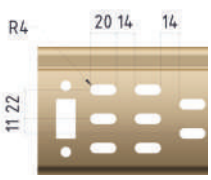
HEAVY DUTY GUIDE ASSEMBLY
90mm deep with wall thickness of 2.95mm and formed lock rail running full length of guide to secure wind lock clips.

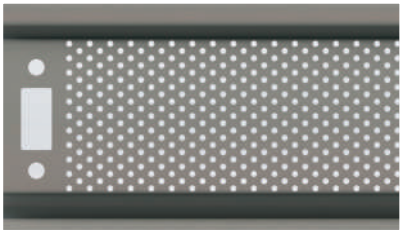
DRUM ASSEMBLY
The drum is manufactured from mild steel tube. The drum houses bearings counter balancing helical torsion springs, capable of producing sufficient torque to ensure ease of operation of the curtain from any position. With 1.0mm or 1.2mm steel slats with nylon or cast windlock clips every 2nd slat. Optional powder coat colours. AS/NZS 1170.2 - 2002.
All torsion spring used are coiled and heat treated to AS for performance and durability.
All drum and axle components are fabricated using high quality carbon steel.

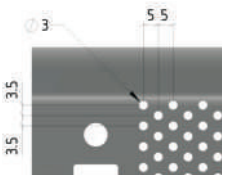
BOTTOM RAIL ASSEMBLY
Aluminium T/Bar with bottom weather seal.

MOTOR OR MANUAL
Motor operation is a 1hp, 3 phase, Grifco operator







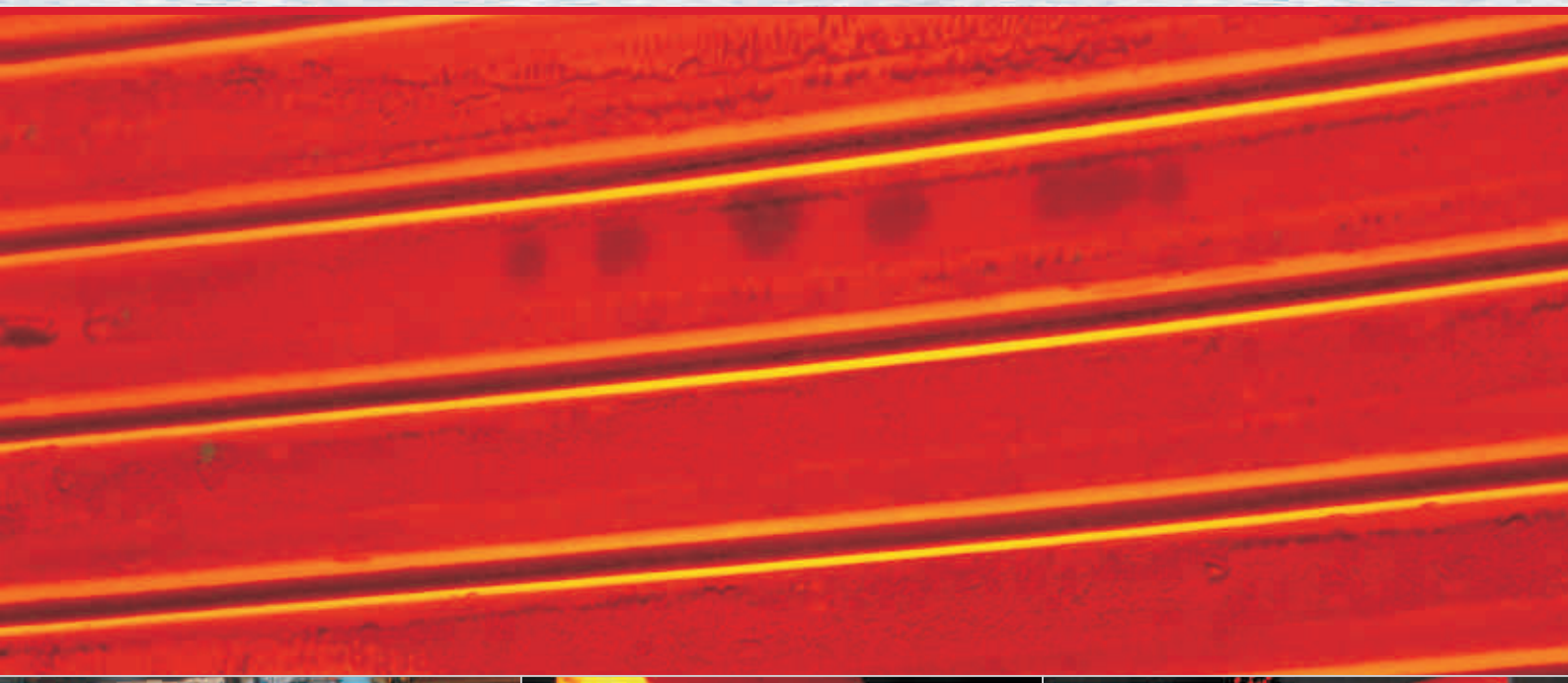


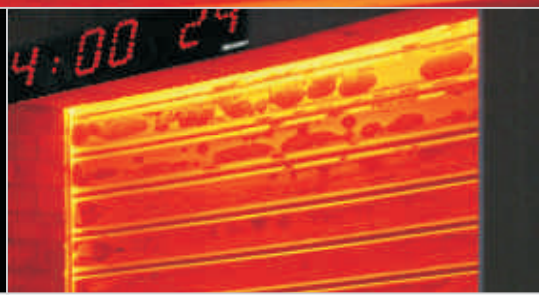

ANVIL

NOTES

Fire Shutter

Series 168 Fire Shutter Door System





Specifications

DOOR CURTAIN ASSEMBLY
105mm slat profile 1.413kg/mtr (Galvabond-0.95mm-G2-Z275-192mm slit) with cast clip on every second slat which secures curtain into guides.

HEAVY DUTY GUIDE ASSEMBLY
90mm deep with wall thickness of 2.95mm and formed lock rail running full length of guide to secure wind lock clips.

DRUM ASSEMBLY
The drum is manufactured from mild steel tube. The drum houses bearings counter balancing helical torsion springs, capable of producing sufficient torque to ensure ease of operation of the curtain from any position. With 1.0mm or 1.2mm steel slats with cast windlock clips every slat. Optional powder coat colours.

BOTTOM RAIL ASSEMBLY
Is of 65 x 65 x 5 Duragal E/angle fixed via 6mm rivets with centres not exceeding 450mm.

AUTO DESCENT FIRE SHUTTER OPERATOR
Grifco controlled descent mechanism triggered by either fusible link, magnetic hold release or both.

MOTOR OR MANUAL
Motor operation is a 1hp, 3 phase, 0.75kw Grifco (58001F) motor. Door settings are all controlled by the door controller (C10A).

TRANSMISSION DRIVE CHAIN
10B roller chain.

TRANSMISSION DRIVE SPROCKET
10b, 14 tooth sprocket with 31.75mm bore to fit on drive shaft of motor, Sprocket locked in with 8mm key way and 2 grub screws.

INSTALLATION REQUIREMENTS
Head-room 650mm, drive-side 450mm, tail-end 250mm.

Certificate of Test

No. 2097

This is to certify that the element of construction described below was tested by the CSIRO Division of Materials Science and Engineering in accordance with Australian Standard 1530, Methods for fire tests on building materials, components and structures, Part 4-2005 on behalf of:

Anvil Metals Pty Ltd
19 Excellence Drive
WANGARA WA

A full description of the test specimen and the complete test results are detailed in the Division's sponsored investigation report numbered FSV 1331.

Product Name: Anvil Metals Series 168 Roller Shutter Assembly

Description: The specimen comprised a steel roller shutter protecting an opening 2300-mm wide x 2300-mm high in a 230-mm thick masonry wall.
The roller shutter curtain comprised interlocking, galvanised, steel roll-formed horizontal slats. The curtain slats were nominally 2440-mm long x 100-mm wide x 0.95-mm thick and had 10.5-mm thick cast steel end-clips, fixed with two 6.35-mm x 21-mm long steel rivets to each end of every alternate slat. The curtain overlapped the opening in the brick wall by nominally 70-mm on each side.
The bottom rail of the curtain consisted of one 65-mm x 65-mm x 5-mm Duragal steel angle fixed through the bottom slat using 6-mm x 14-mm long steel rivets at nominal 300-mm centres.
The vertical guides were mild steel 100-mm x 25-mm x 12.5-mm thick 'C' channel section.
The roller drum assembly consisted of a black steel tube 168.3-mm O.D. with a wall thickness of 4.8-mm incorporating a steel solid axle, 35-mm in diameter supported at each end (measured distance of approximately 2620-mm) by a barrel bracket without being restrained in any way.
The door was operated by using a hand chain through a reduction gearbox mounted on one end of the drum.
The element of construction described above satisfied the following criteria for fire-resistance for the period stated.

Structural Adequacy	-	not applicable
Integrity	-	no failure at 241 minutes
Insulation	-	4 minutes
Radiation at 365-mm	-	21 minutes

and therefore for the purpose of Building Regulations in Australia, achieved a fire-resistance level (FRL) of -/240/0. The FRL is applicable for exposure to fire from either direction.

This certificate is provided for general information only and does not comply with the regulatory requirements for evidence of compliance.

Testing Officer: Chris Wojcik Date of Test: 23 October 2008.
Issued on the 9th day of January 2009 without alterations or additions.

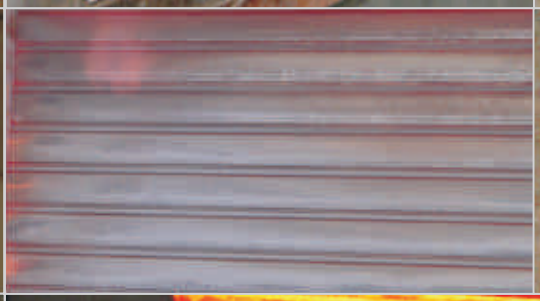
Garry E Collins
Manager, Fire Testing and Assessments

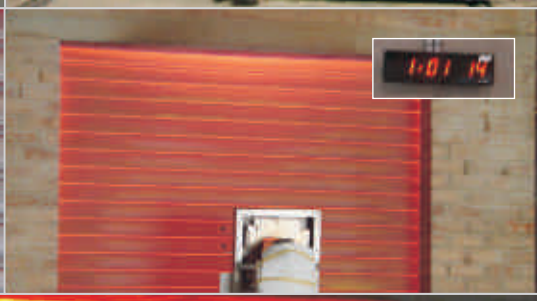
CSIRO
CSIRO Materials Science and Engineering
14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone: 61 2 9490 5444 Facsimile:61 2 9490 5555

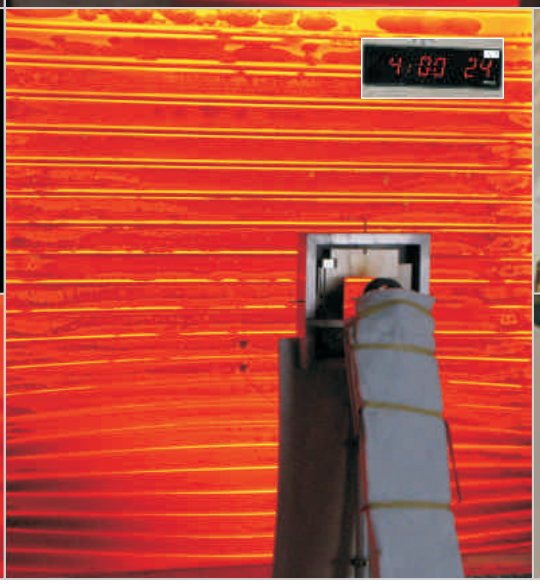
NATA
This document is issued in accordance with NATA's accreditation requirements

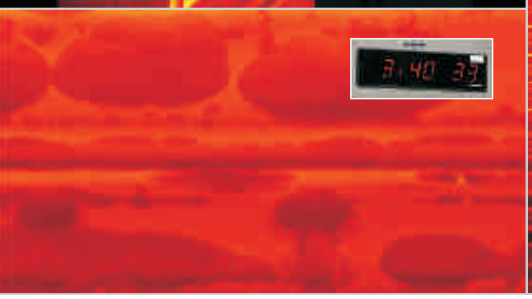

FURNACE ENGINEERING
PTY. LTD.


CSIRO TEST
FS 4033/3170





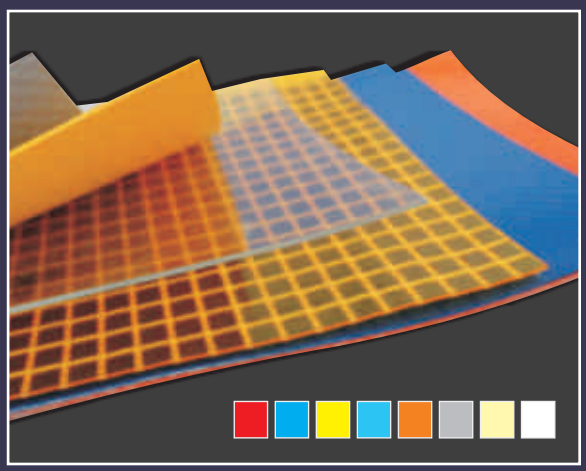




NOTES

High Speed Doors

Roller and Stacked Aluminium or Galvanised Doors



STRONG, WIND & CORROSION RESISTANT DOORS

High Speed Doors are fast opening and closing doors, allowing people and equipment to move quickly. The doors are resistance to wind pressure, have good insulation properties, are durable, easy to operate, safe and reliable.

The doors are available with two opening options, Rolling or Folding and three materials - powder coated galvanised steel which comes in a range of colours to suit a variety of applications, aluminium alloy and polished stainless steel.

Specifications

SEW SYSTEM CONFIGURATION

DOOR CONSTRUCTION

Doorframe and Box cover:

- Galvanized steel, 2mm thickness galvanized steel, with powder coated surface treatment
- Anodized aluminum
- Polished Stainless steel

CURTAIN MATERIAL

High-density industrial fabric coating, 0.9 or 1.3mm thickness, in eight colours. Transparent window 1.0 thickness PVC, size and location are as required.

DRIVE SYSTEM

1. Motor: German SEW motor, 200V-380V, power: 0.75KW~2.2KW, IP55, 50HZ.
2. Running speed: 0.8-1.5m/s (optional opening speed upon request)
3. Opening & closing frequency: 1000-1500/day

CONTROL SYSTEM

PLC programming, with electronic encoder. Encoder positioning replaces traditional mechanical positioning, performance is more stable and reliable, and encodes more accurately.

OPENING SYSTEM

1. Radar: Adopt Belgium BEA double-sided radar
2. Press button: double
3. Remote Control: with 2 keys
4. Can be operated manually

Other options available such as: pull rope, geomagnetic ring, and Induction light curtains, etc.

SERVO SYSTEM CONFIGURATION

DOOR CONSTRUCTION

Doorframe and Box cover:

Galvanized steel, 2mm thickness galvanized steel, with powder coated surface treatment
Anodized aluminum
Polished Stainless steel

CURTAIN MATERIAL

High-density industrial fabric coating, 0.8mm thickness, in eight colours. Transparent window 1.0 thickness PVC, size and location are as required.

DRIVE SYSTEM

1. Motor: German SERVO motor, 200V-380V, power: 0.75KW~2.2KW,IP55, 50HZ .
2. Running speed: 1.0 -2.5m/s (optional opening speed upon request)
3. Opening & closing frequency: 1000-1500/day

CONTROL SYSTEM

SERVO motor with electronic encoder. Intelligent control system, LED control panel, and high running speed, high stability, and high precision.

OPENING SYSTEM

1. Radar: Adopt Belgium BEA double-sided radar
2. Press button: double
3. Remote Control: with 2 keys
4. Can be operated manually

Other options available such as: pull rope, geomagnetic ring, and Induction light curtains, etc.

ROLLING TYPE

FOLDING TYPE

NOTES

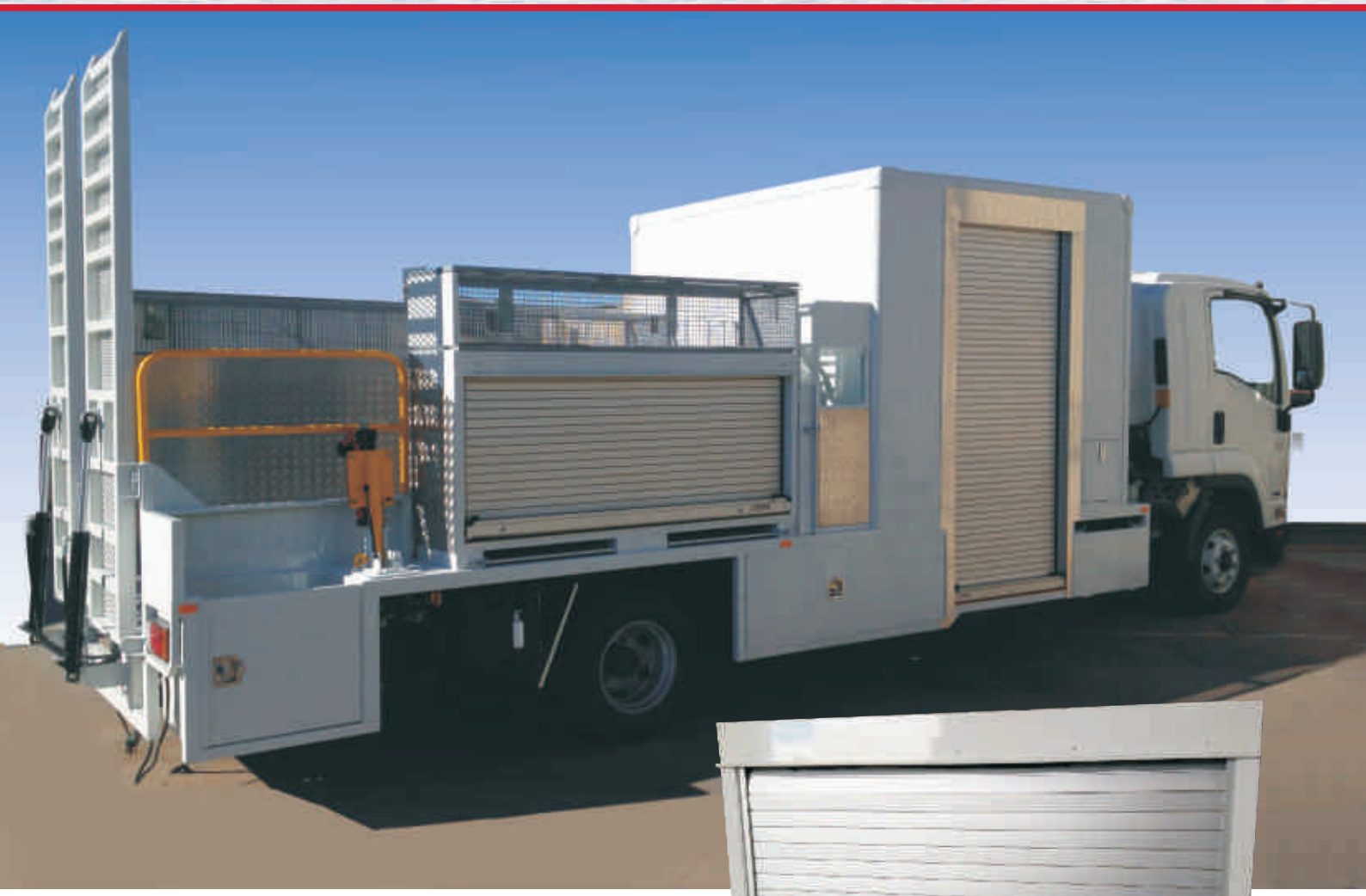
Charisma Roller Shutter

AL45 with a 45mm "Quiet Achiever' Aluminium Slat

ULTRA STRONG

The AL45 Roller Shutters are ideal for both external and internal installations in most building projects, including counter tops, trucks, over windows, display cabinets, warehouses, factories, recreation and sporting centres, mining and heavy industry workshop facilities.

The maximum size is 3m high x 3m wide. The Roller Shutters can be installed with removable mullions for larger opening widths.



Specifications

CURTAIN SLAT

Anodized aluminum extruded hollow section profile (.394kg per metre) with a face depth of 45mm which displays the same visual look on both sides.

Nylon clips are fitted to every second slat to prevent lateral movement and provide smooth operation. Optional bottom rail locking via mortice key lock centrally mount into slat, not available on motorised doors.

Finishings available in most powder coat colors

GUIDES

Anodized aluminum channel section profile 70mm wide(1.423kg per metre) with hollow back section 22mm in depth designed to withstand force from intrusions and high wind loadings.

Hollow back allow for concealed fixings.

Felt brush seal fitted to both internal faces of guides for quiet and smooth operation.

AXLE ASSEMBLY

60mm aluminum octagonal axle suits compact spring assembles and internal tube motor drive systems. Motorised doors can be powered DC or AC 240v and operated by wired key switch or wireless remote.

BOX COVER ENCLOSURES

Covers and protects door bundle and working from external and internal surroundings. Aluminum die cast side plates locating to top of guide ends and anchoring motor or spring mounts. Box and cover sizing will vary depending on door height. Finishings available in most powder coat colours.

FINISH

Natural anodized or full range of powder coat colours.

NOTES

Charisma Roller Shutter

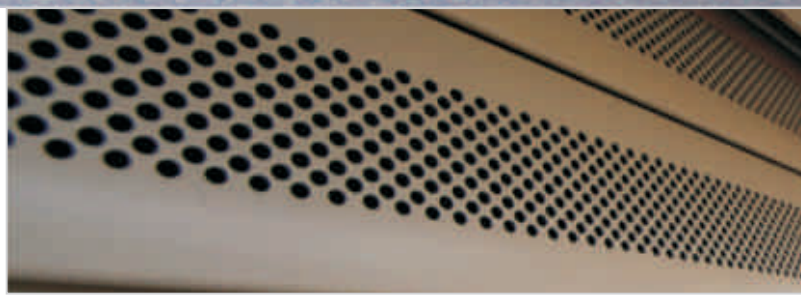
AL77 with a 77mm “Quiet Achiever’ Aluminium Slat

SECURITY, STRENGTH & CORROSION RESISTANT

The AL77 'Quiet Achiever' is ideal for domestic doors and school shutters. It features unique 'silenced slats' that quietens the slat 'rattle' associated with normal door operation.

The doors are made from corrosion resistant aluminium providing better quality, less maintenance and greater longevity. They are available in plain, perforated or slotted with polycarbonate refills.

Maximum opening width 6.9m, height 3.5m. Other heights and widths available by application.



Specifications

MOTOR
Tubular brake motor 300 nm, 240 volt, 4.2 amps, 8 rpm and 50 Hz

CONTROL
Key switch up / deadman down controller or remote control.

DRUM
The drum is manufactured using 127 mm ID x 2.0 mm steel tubing

CURTAIN
Extruded aluminium interlocking slat.
Slat size 77 mm x 1.2 mm single layer.
Material weight 520 grams per metre.
6.8 kilograms per metre squared.
Curtain has rubber blade insert for quiet and smooth operation.
Slotting nominally 41 mm x 500 mm to requirements or curtain can be perforated.

GUIDES
Extruded aluminium 80 mm x 34 mm x 2 mm wall thickness with 5mm felt inserts both sides.

BOTTOM RAIL
Extruded Aluminium box section 77 mm high x 17 mm width and rubber weather strip inserts.

FINISH
Full range of powder coated colours.

NOTES

Charisma Garage Doors

'THE QUIET ACHIEVER'

RESIDENTIAL ALUMINIUM GARAGE DOORS WITH EXQUISITE TIMBER FINISH

The CHARISMA is a range of Aluminium Roller Doors that provide safety, security and convenience – in your home, the workplace, hospital, school, airports and shops.

Whether it's for a new building, or a garage renovation there is a range of classic timber-look finishes to suit modern or traditional architecture.

Colours available are: Honey Ash, Mahogany, Cedar and Traditional Oak.

Comprised of individual extruded hollow aluminium sections connected together by hinges with rubber inserts for quiet operation.

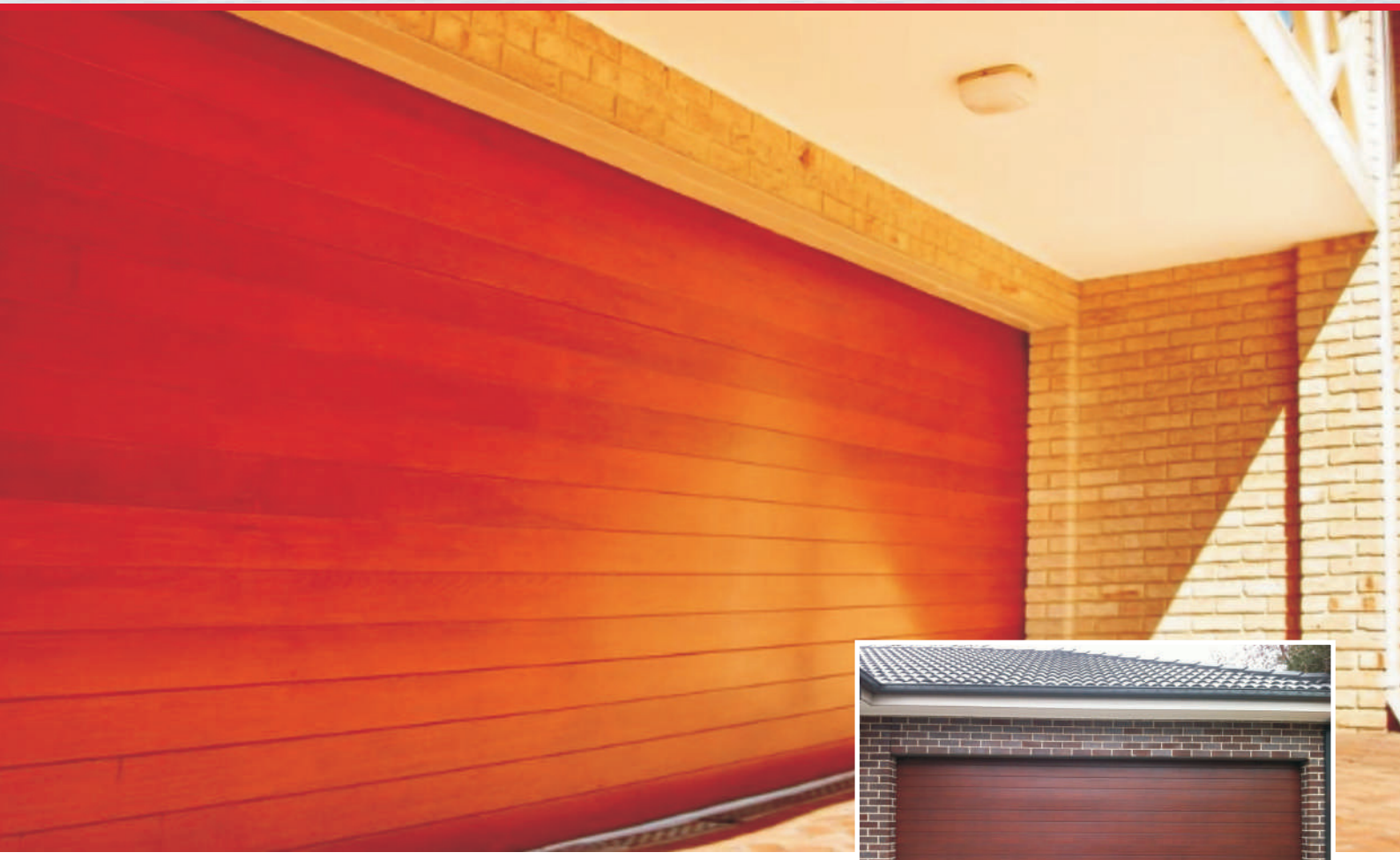
High quality materials, incorporating the latest innovations in manufacturing technology together with a choice of four colour options give your garage an individual look.

These durable factory-coated finishes eliminate the need for painting and ensure that your door continues to look good for years and represents a sound investment for your residence or commercial property .

The timber-look finish is low maintenance and comes complete with a comprehensive 2 year guarantee on all powder coated finishes.

Charisma

GARAGE DOORS 'THE QUIET ACHIEVER'



Specifications

MOTOR

Tubular brake motor 300 nm, 240 volt, 4.2 amps, 8 rpm and 50 Hz.

CONTROL

Remote control with two handsets.

DRUM

The drum is manufactured using 127 mm ID x 2.0 mm steel tubing.

CURTAIN

Extruded aluminum interlocking slat.
Slat size 77 mm x 0.8 mm double layer.
Material weight 485 grams per metre.
6.3 kilograms per metre squared.
Curtain has rubber blade insert for quiet and smooth operation.

GUIDE

Extruded aluminum 80 mm x 34 mm x 2 mm wall thickness (matching colour to doors) with 5mm felt inserts both sides.

BOTTOM RAIL

Extruded aluminum box section 77 mm high x 17 mm width and rubber weather strip insert.

FINISH

Honey Ash, Mahogany, Cedar and Tradition Oak.

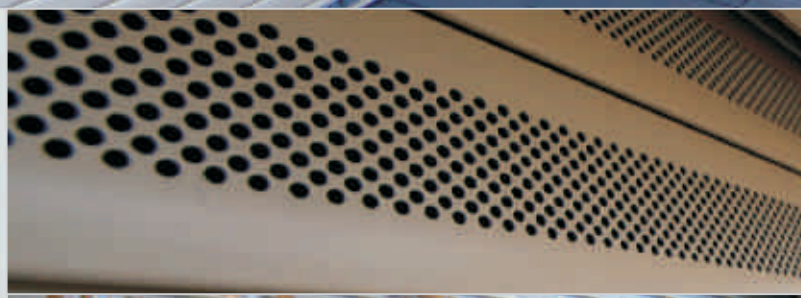
NOTES

Gallery

Helicopter hangar, Jandacot W.A.

Education facility, Southern River, W.A.

Warehouse facility, Welshpool, W.A.




ANVIL

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www.anvildoors.com.au

85, Christable Way, Landsdale,
Western Australia, 6065
PO Box 1767, Wangara WA 6947
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Australian Garage Door Association