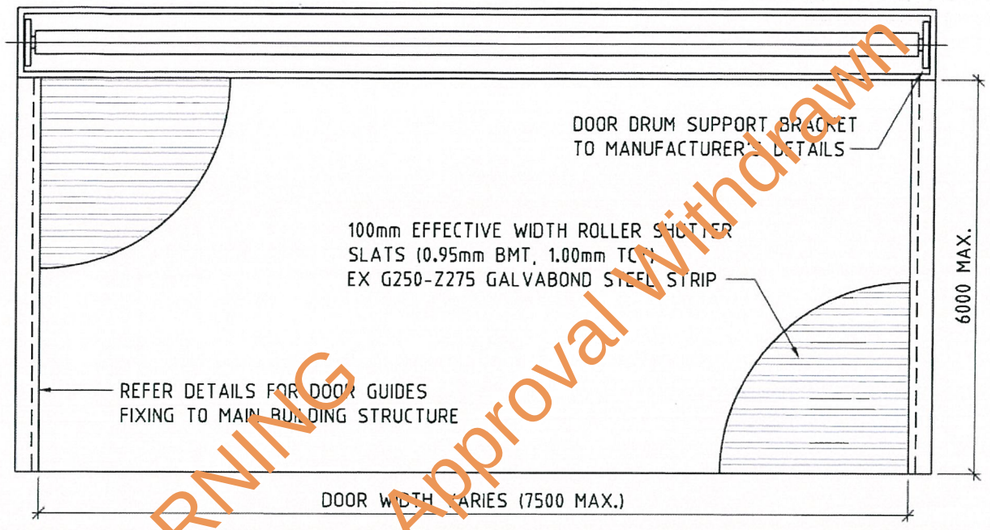
IN ACCORDANCE WITH NCC VOLUME 2 (SECTION P3.10.1), THIS PRODUCT SATISFIES PERFORMANCE REQUIREMENT P2.1.1 FOR CONSTRUCTION IN A HIGH WIND AREA.



TYPICAL ROLLER SHUTTER ELEVATION (INSIDE VIEW)

SCALE N.T.S.

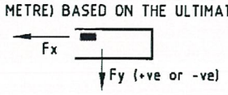
ULTIMATE DESIGN

DOOR MATERIAL TABLE

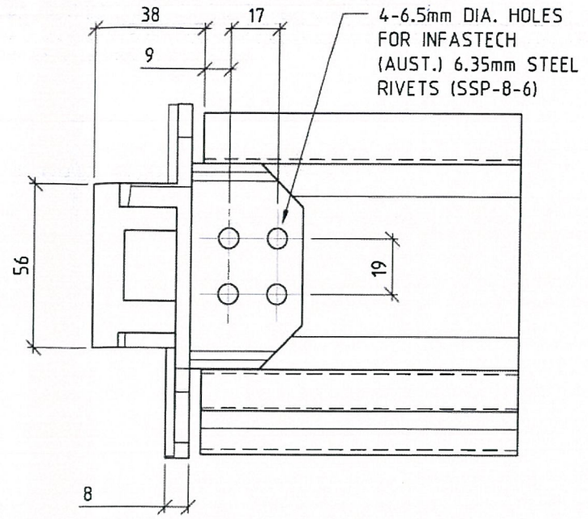
DOOR WIDTH (mm)	WIND LOCK SPACING (mm)	END CAP (mm)	ULTIMATE DESIGN RESISTANCE (kPa)	ULTIMATE REACTIONS kN/m)	BOLT SPACING (mm)
3000	400	10	4.10	Fx=21.20 Fy=6.15	400
3500	400	15	3.65	Fx=20.90 Fy=6.39	400
3500	200	15	5.00	Fx=31.00 Fy=8.75	400
4000	400	20	3.25	Fx=20.80 Fy=6.50	400
4000	200	20	4.50	Fx=30.70 Fy=9.00	400
4500	200	20	4.80	Fx=41.40 Fy=10.80	300*
5000	200	25	4.50	Fx=41.30 Fy=11.20	300*
5500	200	30	4.30	Fx=42.10 Fy=11.80	300*
6000	200	35	4.01	Fx=42.80 Fy=12.00	300*
6500	200	35	3.55	Fx=42.00 Fy=11.50	300*
7000	200	40	3.35	Fx=41.70 Fy=11.70	300*
7500	200	40	3.04	Fx=42.10 Fy=11.40	300*

* DENOTES REFER TO NOTE 3

1. Fx AND Fy ARE ULTIMATE LIMIT STATE IN-PLANE AND OUT OF PLANE DOOR GUIDE REACTIONS (PER LINEAL METRE) BASED ON THE ULTIMATE DESIGN RESISTANCE.



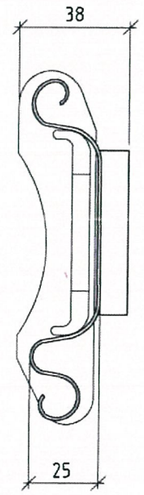
2. FOR ANCHOR SPECIFICATIONS REFER TO DOOR GUIDE FIXING DETAILS ON SHEET 2.
3. FOR ANCHOR SPACINGS AT 300mm CRS SPACE ANCHORS SO AS NOT TO BE LOCATED IN BED JOINTS OF BLOCK WALL. ADOPT FIRST ANCHOR AT 150mm ABOVE FLOOR LEVEL SUCH THAT ANCHORS ARE NO CLOSER THAN 50mm TO THE BED JOINT.
4. REDUCE THE REACTIONS PROPORTIONATELY WHEN THE ULTIMATE DESIGN WIND PRESSURE IS LESS THAN THE ULTIMATE DESIGN RESISTANCE.



ELEVATION ON WIND LOCK

(CAST STEEL)

SCALE 1:2



TYPICAL ROLLER DOOR SLAT

SCALE 1:2

NOTES:
1. 100mm APPROXIMATE COVER WIDTH TO SLAT.
2. SLAT SHALL BE COLD ROLLED FROM 0.95mm BMT STEEL STRIP, (EX G450-Z275 GALVABOND STEEL STRIP)

Product name

0.95mm BMT (1.00mm TCT) ROLLER SHUTTER WITH HEAVY DUTY WIND LOCKS

Product Description

ARCO (QLD.) CYCLONIC ROLLER SHUTTER

Manufacturer's Name

ARCO (QLD.) PTY. LTD. PH. (07) 3807 5364
337 CHRISTENSON ROAD SOUTH, STAYPLTON, QLD. 4207

Design Criteria

1. THE DOORS MEET THE DESIGN WIND PRESSURES SPECIFIED IN TABLE 5-2 OF AS4505-2012 FOR A C2 WIND CLASSIFICATION.
   DOOR WIDTH >4m (+2.92 KPa, -3.04 KPa)
   DOOR WIDTH <4m (+2.92 KPa, -3.37 KPa)

   THESE DESIGN WIND PRESSURES TAKE INTO ACCOUNT LOCAL PRESSURES FOR DOORS LOCATED WITHIN 1200mm OF BUILDING CORNERS AS INDICATED IN SECTION 3.1 OF AS4055-2012.

2. THE INSTALLED ROLLER SHUTTER IMPOSES SIGNIFICANT FORCES ON THE MAIN BUILDING STRUCTURE. THE IMMEDIATE SUPPORTING STRUCTURE MUST BE DESIGNED TO RESIST THE LOADINGS APPLIED AT EACH END OF THE DOOR CURTAIN AS INDICATED IN THE TABLE.
   - FOR RIGID WALL SYSTEMS SUCH AS REINFORCED CONCRETE MASONRY OR PRECAST CONCRETE PANELS THE IN-PLANE LOADING (Fx) DOES NOT VARY ALONG THE HEIGHT OF THE DOOR.
   - FOR FRAMED (NON-RIGID) WALL SYSTEMS IT IS CONSERVATIVE TO DESIGN THE JAMBS FOR THE FULL IN-PLANE LOADING (Fx) INDICATED IN THE TABLE, HOWEVER AN ITERATIVE APPROACH MAY BE ADOPTED WHERE THE IN-PLANE LOADS ARE REDUCED DUE TO THE FLEXIBILITY OF THE JAMBS (REFER AUSTRALIAN STEEL INSTITUTE - A METHOD FOR ESTIMATING IN-PLANE FORCES ON ROLLER SHUTTER DOOR GUIDES). THE DESIGNER SHOULD CONSIDER RHS SECTIONS AS DOOR JAMBS DUE TO THE TORSIONAL EFFECT INDUCED BY IN-PLANE FORCES IN THE DOOR CURTAIN

3. THE DOORS HAVE BEEN TESTED FOR DEBRIS IMPACT AS INDICATED IN AS/NZS1170.2-2011.

Limitations

1. 6000mm MAX DOOR HEIGHT
2. 7500mm MAX DOOR WIDTH
3. END FLOATS MUST BE SET AS INDICATED IN TABLE.
4. THE ROLLER SHUTTER INSTALLATION SHALL BE SURFACE TREATED AS REQUIRED IN ORDER TO COMPLY WITH THE DURABILITY REQUIREMENTS OF THE BCA FOR THE ACTUAL SITE EXPOSURE CONDITIONS.
5. PROPRIETARY MASONRY ANCHORS SHALL BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.
6. THIS DRAWING COVERS THE DOOR COMPONENTS ONLY (INCLUDING FIXING TO SUPPORTS). A SEPARATE SECTION 40 CERTIFICATE SHALL BE OBTAINED FOR DOOR JAMBS ETC (I.E. BUILDING SUPPORT STRUCTURE).

Accepted for Inclusion

DTCM ref: m/333/01 SHEET 1 OF 2

Chairman's Signature:

Chairman's Name: Paul Nowland

Date of Approval: 25-05-2018 Expiry Date: 25-05-2023

Notes covering basis of DTC (Relevant test report etc)

REFER TO NJA CONSULTING REPORT - REFERENCE No. 15113-009-03:DMcD

REFER TO JAMES COOK UNIVERSITY - CYCLONE TESTING STATION - REPORT No. TS1034 REVISION B "SIMULATED WIND LOAD TESTING OF 1.0mm AND 1.2mm BMT ROLLER SHUTTERS" DATED 1 MARCH 2017 AND REPORT No. TS1065 "SIMULATED WINDBORNE DEBRIS TESTING OF 0.95mm BMT ROLLER SHUTTER" DATED 16 MAY 2017.
REFER TO ALS GLOBAL MECHANICAL TESTING REPORT No. 42636-ME-01(A) FOR LOAD TEST RESULTS OF INDIVIDUAL COMPONENTS DATED 24 MAY 2017.

****Certifying Engineer's Certification**

Name: RONALD A. BELL
Registration Number: 60596 ES
Date: 14MAR2018
Signature:

**registered as a structural engineer in Northern Territory

***Design Engineer's Certification**

Name: DARREN McDONALD
Registration Number: 24619 ES
Date: 14 MAR 2018
Signature:

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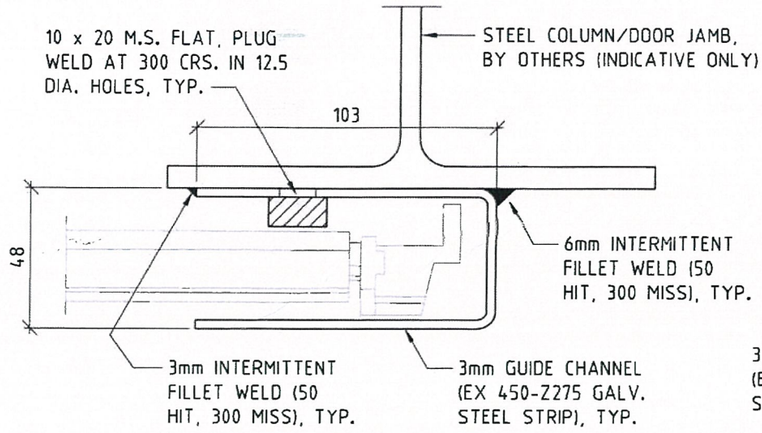
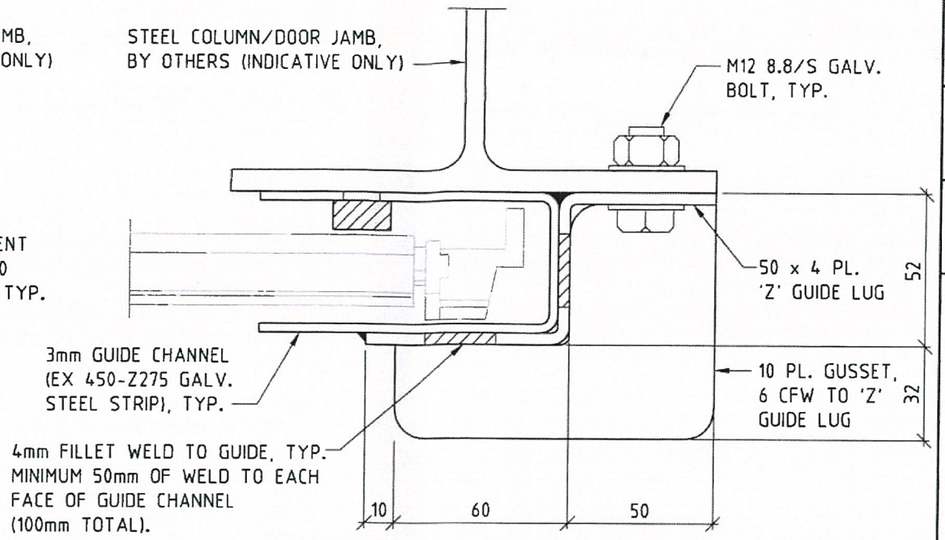


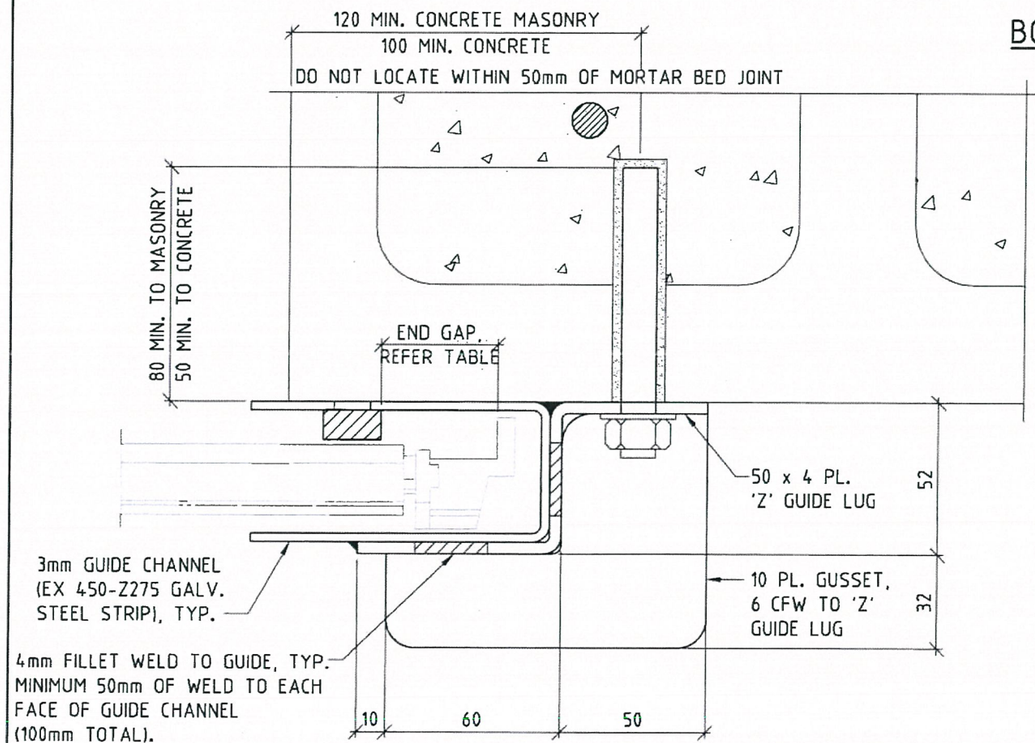
WELDED FIXING TO STEEL JAMB

SCALE 1:2



BOLTED FIXING TO STEEL JAMB

SCALE 1:2



BOLTED FIXING TO MASONRY/CONCRETE

SCALE 1:2

FIXING TO BLOCKWALL (MIN 200 SERIES, CORE FILLED)
M12 GALV. TRUBOLTS, RAMSET PART # T12100GH.
M12 GALV. DYNABOLTS, RAMSET PART # DP12100DH.
M12 GALV. CHEMSETS, 80mm MIN. EMBEDMENT.

FIXING TO PRECAST PANEL (MIN 125THK)
M12 GALV. TRUBOLTS, RAMSET PART # T12080GH
M12 GALV. DYNABOLTS, RAMSET PART # DP12070DH.
M12 GALV. CHEMSETS, 50mm MIN. EMBEDMENT.

FIXING NOTES:
1. FOR FASTENER SPACINGS REFER DOOR MATERIALS TABLE ON SHEET 1.
2. OTHER PROPRIETARY ANCHOR SYSTEMS MAY BE USED PROVIDING THAT THEY CAN SUPPLY THE REACTIONS SPECIFIED ON SHEET 1.
3. A VERTICAL REINFORCING BAR SHALL BE LOCATED BETWEEN THE FASTENER AND THE DOOR DAYLIGHT OPENING, REFER TO ENGINEER IF OTHERWISE.
4. CHEMSET ANCHORS SHALL BE INSTALLED USING MAXIMA SPIN CAPSULES OR CHEMSET 801 EPOXY ADHESIVE.
5. THIS DRAWING DOES NOT PRECLUDE FIXING OF THE DOOR GUIDES TO OTHER FORMS OF PRIMARY BUILDING STRUCTURE INCLUDING COLD-FORMED STEEL. SUBJECT TO THE ADJACENT DESIGN CRITERIA

GENERAL NOTES:-
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. TREAT ALL WELD AFFECTED SURFACES WITH CORROSION RESISTANT COATING SYSTEM AS REQUIRED.
3. LOCATE MASONRY ANCHORS AS NEAR AS PRACTICABLE TO CENTRE OF VERTICAL REINFORCED CORES.
4. ALL DOOR COMPONENTS TO BE SUITABLY PROTECTED AGAINST CORROSION INCLUDING ZINCALUME, GALVANISING OR OTHER APPROVED COATING SYSTEM.
5. ALL WELDED CONNECTIONS SHALL BE COLD GALVANISED

Product name
0.95mm BMT (1.00mm TCT) ROLLER SHUTTER WITH HEAVY DUTY WIND LOCKS

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Accepted for Inclusion

DTCM ref: M/333/02 SHEET 2 OF 2

Chairman's Signature:

Chairman's Name: Paul Nowland

Date of Approval: 25-05-2018 Expiry Date: 25-05-2023

Notes covering basis of DTC (Relevant test report etc)

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