NOTES :

DESIGN CRITERIA

- WIND REGION A0-A5,B1,B2,C & D
- TERRAIN CATEGORY 2-3 (AS/NZS 1170.2:2022)
- DOOR HEIGHT 10m MAX.
- BUILDING IMPORTANCE = LEVEL 2
- REGIONAL WIND SPEED:
  REGION A0-A5: VR = 45m/s
  REGION B1,B2: VR = 57m/s
  REGION C: VR = 66m/s
  REGION D: VR = 80m/s
- DOORS ARE RATED UP TO AN ULTIMATE DESIGN WIND PRESSURE FOR A GIVEN OPENING WIDTH (L) AS NOMINATED IN TABLE 1, AS WELL AS FIGURES 1 & 2.
- OPENING WIDTH = CURTAIN WIDTH - CURTAIN OVERLAPS (REFER SECTIONS 1 ON DRAWINGS S04 & S05).

LIMITATIONS

- STEEL ABUTMENT POSTS TO BE 3mm (MIN.) IN THICKNESS WITH A MINIMUM STRESS GRADE OF 250.
- CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF CONCRETE HOLLOW MASONRY UNITS (f'uc) = 15 MPa (MIN.).
- CORE FILLING OF CONCRETE HOLLOW MASONRY UNITS (f'c) = 15 MPa (MIN.).

LIMITATIONS (CONTINUED)

- THE STRUCTURE TO WHICH THE DOOR IS ATTACHED SHALL BE DESIGNED AND CERTIFIED INDEPENDENTLY AS REQUIRED BY A SUITABLY QUALIFIED STRUCTURAL ENGINEER.
- ALTERNATIVE DESIGN PARAMETERS TO WHAT ARE NOMINATED ON THESE DRAWINGS ALONG WITH ALTERNATIVE SITE SPECIFIC LOCAL PRESSURE FACTORS MAY BE ADOPTED PROVIDED THE CALCULATED ULTIMATE DESIGN WIND PRESSURES FOR ANY GIVEN SPAN DO NOT EXCEED THE VALUES PROVIDED IN TABLE 1 AND FIGURES 1 & 2.
- THE BUILDING DESIGN STRUCTURAL ENGINEER IS TO ENSURE THAT THE SITE SPECIFIC DESIGN WIND LOADINGS DO NOT EXCEED THE ULTIMATE DESIGN WIND PRESSURE RATINGS PROVIDED IN TABLE 1 AND FIGURES 1 & 2 FOR ANY GIVEN SPAN.
- DOORS MAY BE POSITIONED AT ANY LOCATION ALONG THE BUILDING ENVELOPE INCLUDING ALL LOCAL PRESSURE ZONES (ie. CORNERS OF BUILDINGS), PROVIDED THE CALCULATED SITE SPECIFIC ULTIMATE DESIGN WIND
  PRESSURES FOR ANY GIVEN SPAN DO NOT EXCEED THE RATING VALUES PROVIDED IN TABLE 1 AND FIGURES 1 & 2.

BASIS OF DRAWINGS

- TEST REPORT NO. TS1001 Revision A (CYCLONE TESTING STATION, SCHOOL OF ENGINEERING AND PHYSICAL SCIENCES, JAMES COOK UNIVERSITY).
- EXPERIMENTS CONDUCTED ON THE 9th APRIL 2013, 2nd MAY 2013, 6th MAY 2013, 16th OCTOBER 2014 AND 18th MAY 2021 AS DOCUMENTS IN REPORT No.'s 2288/2013/Rep1, 2288/2014/Rep1 AND 2288/2021/Rep1.
- PRINCIPLES OF MECHANICS.
- AS/NZS 1170.2:2021 STRUCTURAL DESIGN ACTIONS-PART 2: WIND ACTIONS.
- AS/NZS 1170.0:2002 STRUCTURAL DESIGN ACTIONS-PART 0: GENERAL PRINCIPLES.
- AS/NZS 1170.1:2002 STRUCTURAL DESIGN ACTIONS PART 1: PERMANENT, IMPOSED AND OTHER ACTIONS.
- AS/NZS 4505:2012 GARAGE DOORS AND OTHER LARGE ACCESS DOORS
- AS 3700:2018 MASONRY STRUCTURES
- AS 3600-2018 CONCRETE STRUCTURES
- AS/NZS 4600:2018 COLD FORMED STEEL STRUCTURES
- AS 4100:2020 STEEL STRUCTURES.
- ALL DOOR COMPONENTS TO BE IN ACCORDANCE WITH STANDARD B&D ROLL-A-SHUTTER MANUFACTURING.
- DOOR INSTALLATION TO BE IN ACCORDANCE WITH STANDARD B&D ROLL-A-SHUTTER INSTALLATION GUIDELINES.

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G	08.06.15	GENERAL REVISION
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PROJECT
B&D 100mm ROLL-A-SHUTTER DOORS
FOR USE IN ALL WIND REGIONS

DRAWING 100mm SERIES ROLL-A-SHUTTER DOOR NOTES. DRAWING 1 OF 9

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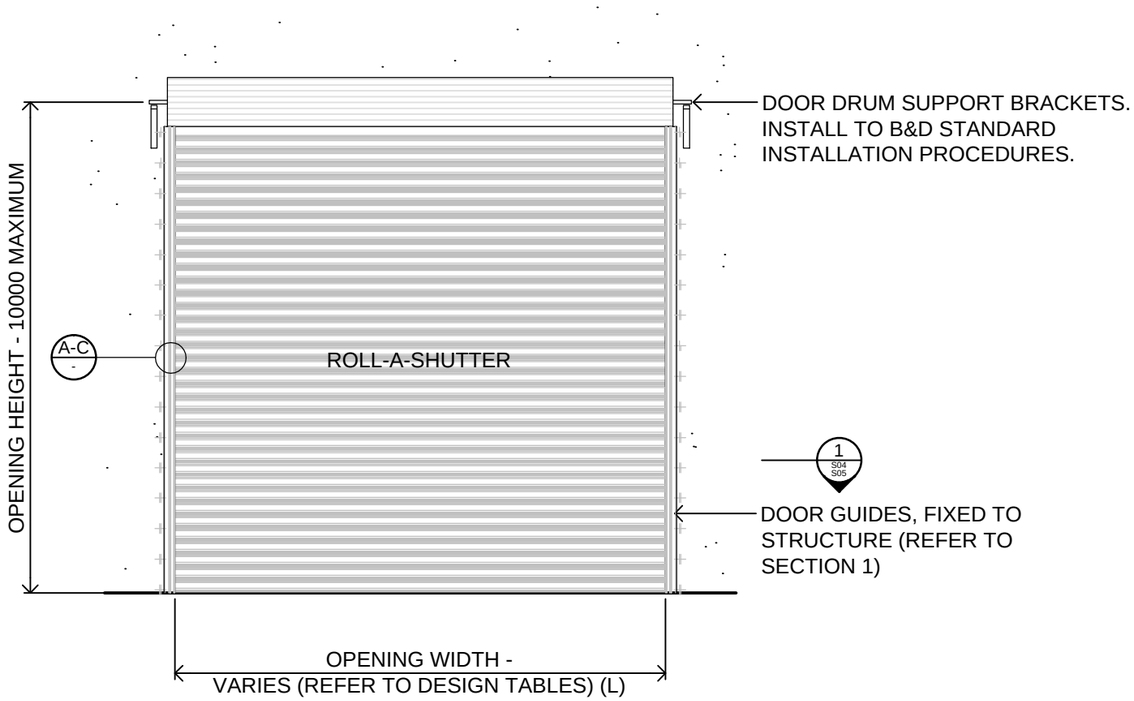
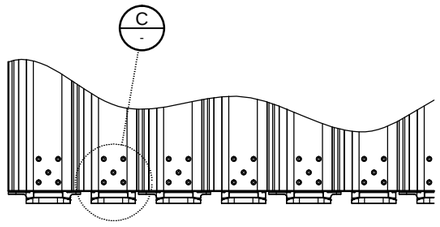


ROLL-A-SHUTTER DOOR ELEVATION - TYPICAL

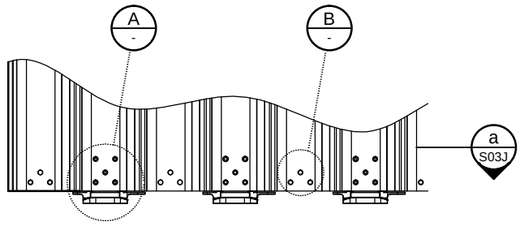
SCALE 1:50

NOTE: SPECIFIC ORDERS FOR OPENING HEIGHTS UP TO 12m CAN BE ARRANGED PROVIDED THE SITE SPECIFIC DESIGN WIND PRESSURES ON THE DOOR DO NOT EXCEED THE ULTIMATE DESIGN WIND PRESSURE RATINGS PROVIDED IN TABLE 1 AND FIGURES 1 AND 2 FOR ANY GIVEN SPAN.



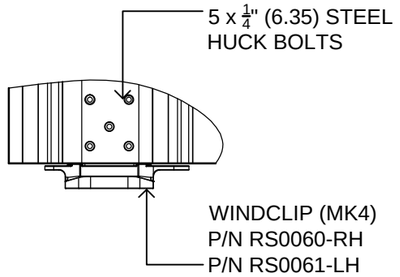
CURTAIN WITH CLIPS - PART PLAN

(CLIPS AT EVERY SLAT)
(SCALE 1:10



CURTAIN WITH CLIPS - PART PLAN

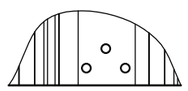
(CLIPS AT EVERY SECOND SLAT)
(SCALE 1:10



DETAIL A -

SCALE = 1:5

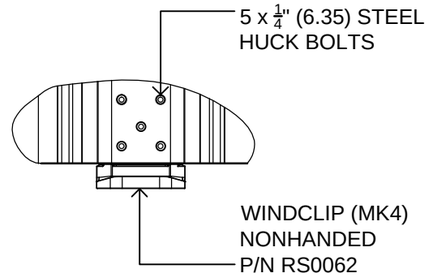
RIGHT/LEFT HANDED WINDLOCK CLIP TO SLAT DETAIL



DETAIL B -

SCALE = 1:5

UNCLIPPED SLAT DETAIL (WINDCLIPS AT EVERY SECOND SLAT)



DETAIL C -

SCALE = 1:5

NONHANDED WINDLOCK CLIP TO SLAT DETAILS

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DRAWING: 100mm SERIES ROLL-A-SHUTTER DOOR ELEVATION AND DETAILS. DRAWING 2 OF 9

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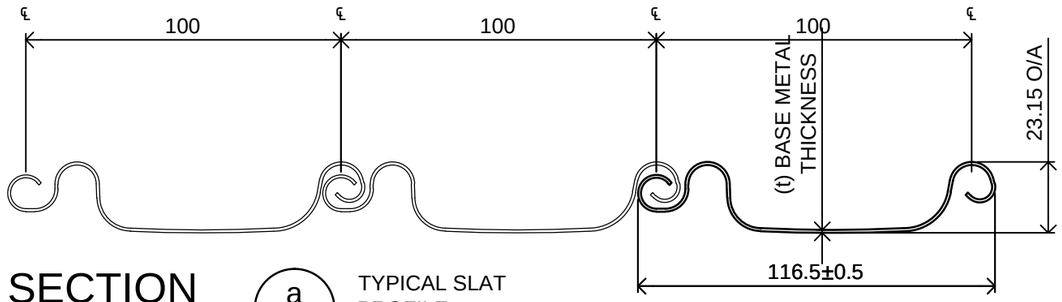


SECTION a S02

SCALE = 1:2

TYPICAL SLAT PROFILE

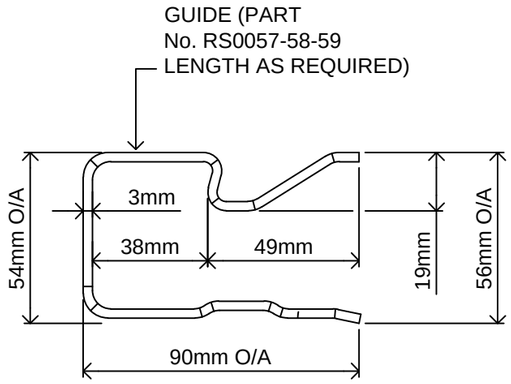
CURTAIN SLAT TYPES

6/100, 8/100, 10/100 & 12/100

(SLAT PROFILES AS PER STANDARD B&D DRAWING NUMBER RS0050-4)

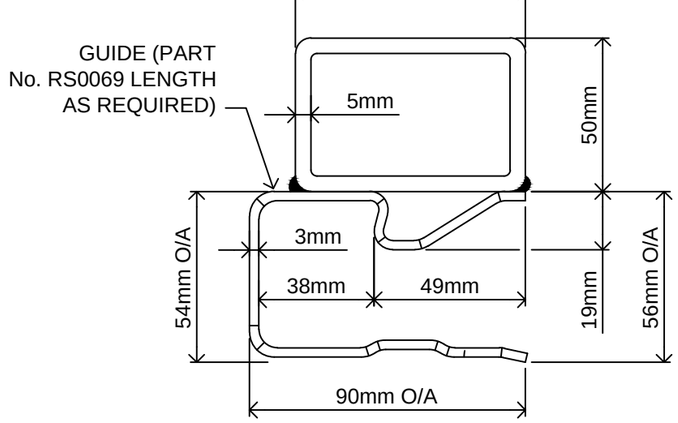
CURTAIN SLAT TYPES, MATERIAL SPECIFICATION AND BASE METAL THICKNESSESS

CURTAIN TYPE	MATERIAL SPECIFICATION	BASE METAL THICKNESS (t)
6/100	GALVABOND STEEL G2 Z275	0.60mm
8/100	GALVABOND STEEL G2 Z275	0.75mm
10/100	GALVABOND STEEL G2 Z275	0.95mm
12/100	GALVABOND STEEL G2 Z275	1.15mm



TYPICALLY ROLL FORMED CHANNEL GUIDE

SCALE 1:2



TYPICALLY ROLL FORMED CHANNEL GUIDE WITH BACKJAMB

SCALE 1:2

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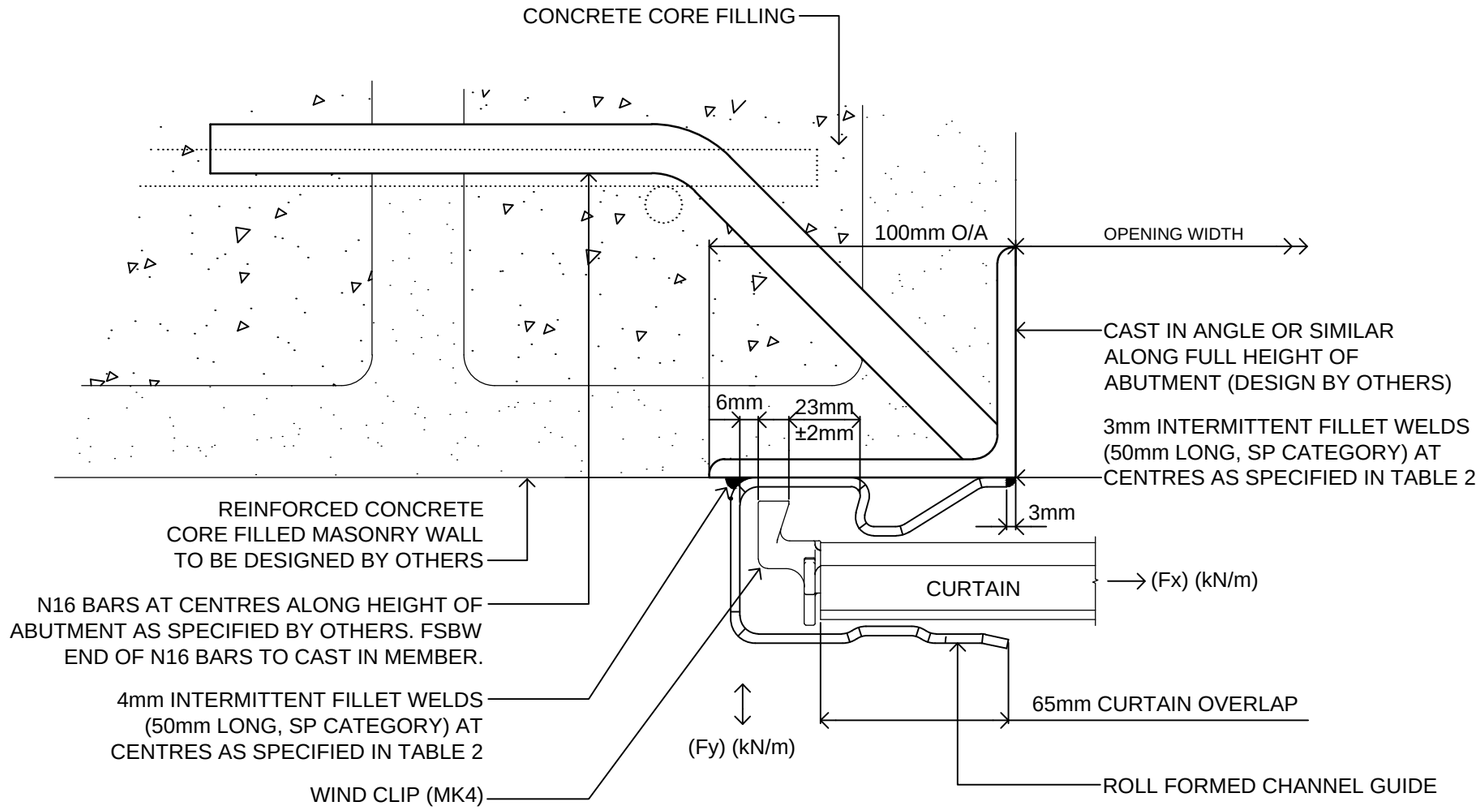

SECTION 1/S02 PLAN

SCALE = 1:2

TYPE 1 FIXING - ROLL FORMED CHANNEL GUIDE WELDED TO MILD STEEL ANGLE OR SIMILAR THAT IS CAST INTO REINFORCED CONCRETE CORE FILLED MASONRY UNITS.

NOTE: SAME DETAIL IS TO BE ADOPTED WHEN ANGLE OR SIMILAR IS CAST INTO REINFORCED CONCRETE PANELS.

THE ABOVE DETAIL IS NOMINAL AND IS ONLY USED TO ILLUSTRATE WELDING OF GUIDE TO ABUTMENT STRUCTURE.

SAME DETAIL APPLIES WHEN USING ROLL FORMED CHANNEL WITH BACK JAMB

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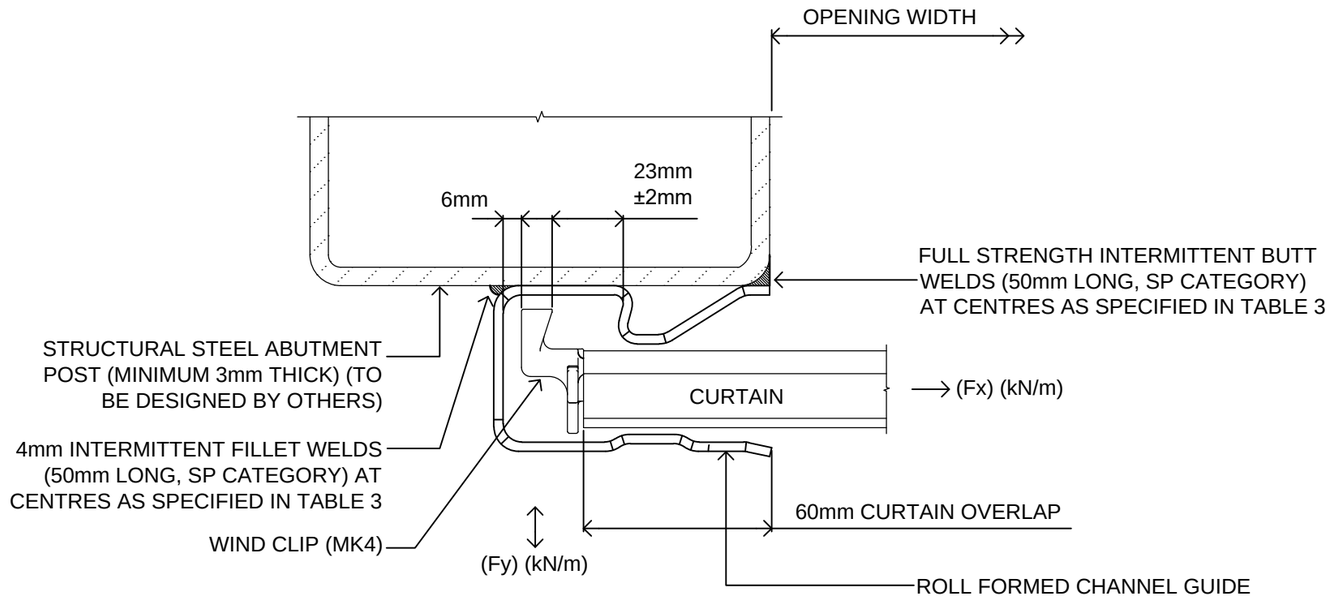

SECTION 1/S02 PLAN

SCALE = 1:2

TYPE 2 FIXING - CHANNEL GUIDE WELDED TO
STRUCTURAL STEEL ABUTMENT

THE ABOVE DETAIL IS NOMINAL AND IS ONLY USED TO ILLUSTRATE WELDING OF GUIDE TO ABUTMENT STRUCTURE.

SAME DETAIL APPLIES WHEN USING ROLL FORMED CHANNEL WITH BACK JAMB

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DRAWING 100mm SERIES ROLL-A-SHUTTER DOOR DETAILS. DRAWING 5 OF 9

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TABLE 1 - MAXIMUM ALLOWABLE OPENING WIDTHS (L) FOR A GIVEN WIND PRESSURE

MAXIMUM ALLOWABLE OPENING WIDTHS (L) FOR DOOR HEIGHTS UP TO 10m										
			6/100 SLAT		8/100 SLAT		10/100 SLAT		12/100 SLAT	
REGION	TERRAIN CATEGORY	ULTIMATE DESIGN WIND PRESSURE	WINDCLIPS AT EVERY SLAT	WINDCLIPS EVERY 2nd SLAT	WINDCLIPS AT EVERY SLAT	WINDCLIPS EVERY 2nd SLAT	WINDCLIPS AT EVERY SLAT	WINDCLIPS EVERY 2nd SLAT	WINDCLIPS AT EVERY SLAT	WINDCLIPS EVERY 2nd SLAT
A0-A5	2	1.33 KPa	14.0m	11.1m	14.0m	13.1m	14.0m	13.1m	14.0m	13.1m
A1-A5	2.5	1.13 KPa	14.0m	12.4m	14.0m	14.0m	14.0m	14.0m	14.0m	14.0m
	3	0.92 KPa	14.0m	14.0m	14.0m	14.0m	14.0m	14.0m	14.0m	14.0m
B1	2	2.14 KPa	12.8m	8.1m	14.0m	9.5m	14.0m	9.5m	14.0m	9.5m
	2.5	1.79 KPa	14.0m	9.1m	14.0m	10.7m	14.0m	10.7m	14.0m	10.7m
	3	1.47 KPa	14.0m	10.4m	14.0m	12.2m	14.0m	12.2m	14.0m	12.2m
B2 & C	2	3.66 KPa	8.95m	5.65m	10.6m	6.65m	10.6m	6.65m	10.6m	6.65m
	2.5	3.07 KPa	10.1m	6.35m	11.9m	7.5m	11.9m	7.5m	11.9m	7.5m
D	2	5.91 KPa	6.5m	4.1m	7.7m	4.85m	7.7m	4.85m	7.7m	4.85m
	2.5	4.95 KPa	7.3m	4.6m	8.65m	5.45m	8.65m	5.45m	8.65m	5.45m

TABLE 2 - FASTENING SPECIFICATIONS FOR FIXING ONTO CAST IN STRUCTURAL STEEL MEMBERS - TYPE 1

FASTENING SPECIFICATIONS FOR FIXING ONTO CAST IN STRUCTURAL STEEL MEMBERS - TYPE 1			
ABUTMENT TYPE	CURTAIN TYPE	WINDCLIPS AT EVERY SLAT	WINDCLIPS AT EVERY 2nd SLAT
CAST IN STEEL	6/100	WELDED AT 200 CTS.	WELDED AT 400 CTS.
	8/100	WELDED AT 150 CTS.	WELDED AT 300 CTS.
	10/100	WELDED AT 150 CTS.	WELDED AT 300 CTS.
	12/100	WELDED AT 150 CTS.	WELDED AT 300 CTS.

NOTE 1: FOR WELDING ILLUSTRATIONS REFER TO SECTION 1 ON DRAWING S04.
NOTE 2: ALL WELDED AREAS TO BE APPROPRIATELY TREATED FOR PROTECTION AGAINST CORROSION (SPECIFICATIONS BY OTHERS).

TABLE 3 - FASTENING SPECIFICATIONS FOR FIXING ONTO STRUCTURAL STEEL ABUTMENTS - TYPE 2

FASTENING SPECIFICATION FOR FIXINGS ONTO STRUCTURAL STEEL ABUTMENTS - TYPE 2			
ABUTMENT TYPE	CURTAIN TYPE	WINDCLIPS AT EVERY SLAT	WINDCLIPS AT EVERY 2nd SLAT
STEEL	6/100	WELDED AT 200 CTS.	WELDED AT 400 CTS.
	8/100	WELDED AT 150 CTS.	WELDED AT 300 CTS.
	10/100	WELDED AT 150 CTS.	WELDED AT 300 CTS.
	12/100	WELDED AT 150 CTS.	WELDED AT 300 CTS.

NOTE 1: FOR WELDING ILLUSTRATIONS REFER TO SECTION 1 ON DRAWING S05.
NOTE 2: ALL WELDED AREAS TO BE APPROPRIATELY TREATED FOR PROTECTION AGAINST CORROSION (SPECIFICATIONS BY OTHERS).

TABLE 4 - MAXIMUM ULTIMATE DESIGN CATENARY FORCE (Fx) PER METRE HEIGHT BASED ON MAXIMUM ALLOWABLE OPENING WIDTHS

MAXIMUM ULTIMATE DESIGN CATENARY FORCE (Fx) PER METRE HEIGHT		
CURTAIN TYPE	WINDCLIPS AT EVERY SLAT	WINDCLIPS AT EVERY 2nd SLAT
6/100	98.0 KN/m	49.0 KN/m
8/100	125.8 KN/m	62.9 KN/m
10/100	125.8 KN/m	62.9 KN/m
12/100	125.8 KN/m	62.9 KN/m

NOTE 1: THE MAXIMUM ULTIMATE DESIGN CATENARY FORCES (Fx) HAVE BEEN DERIVED USING THE MAXIMUM ALLOWABLE OPENING WIDTHS (L) FOR THE GIVEN WIND PRESSURES IN TABLE 1.

NOTE 2: THE MAXIMUM OUT OF PLANE ABUTMENT FORCES (Fy) CAN BE CALCULATED AS FOLLOWS:

$Fy = \frac{WL}{2}$

WHERE Fy = MAXIMUM OUT OF PLANE ULTIMATE DESIGN ABUTMENT FORCE (PER METRE HEIGHT)

W = ULTIMATE DESIGN WIND PRESSURE (kPa)

L = OPENING WIDTH (SPAN) (m)

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DRAWING 100mm SERIES ROLL-A-SHUTTER DOOR TABLES. DRAWING 6 OF 9

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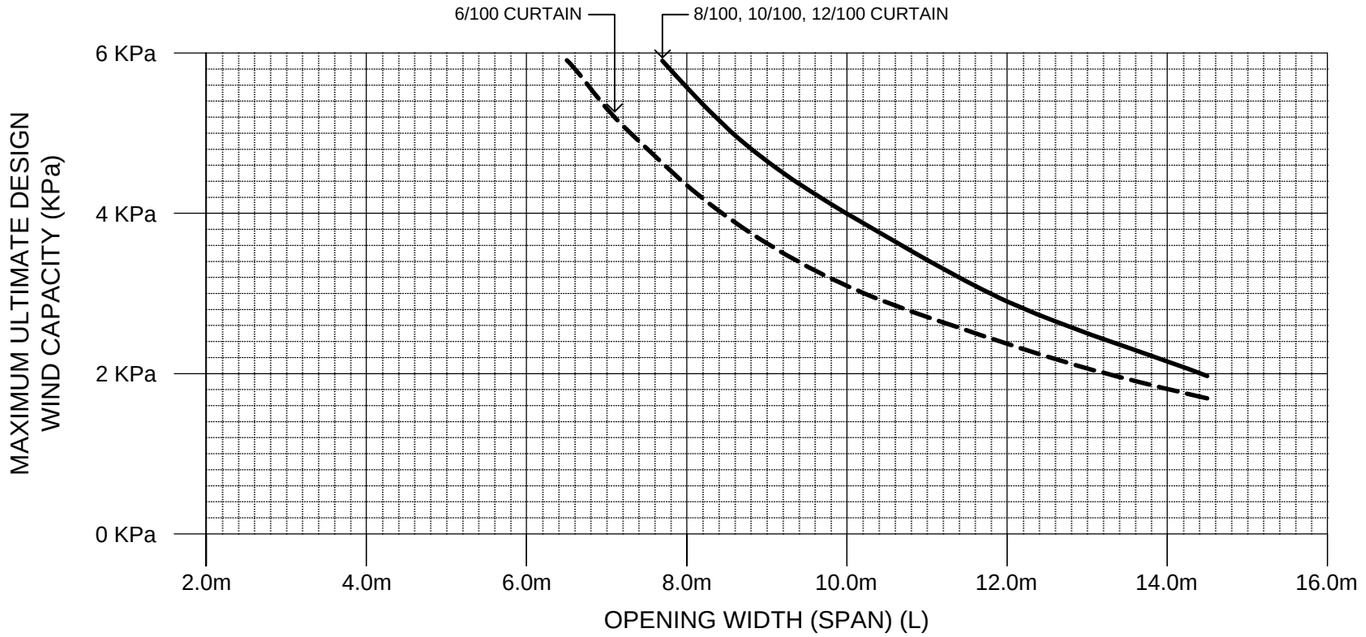
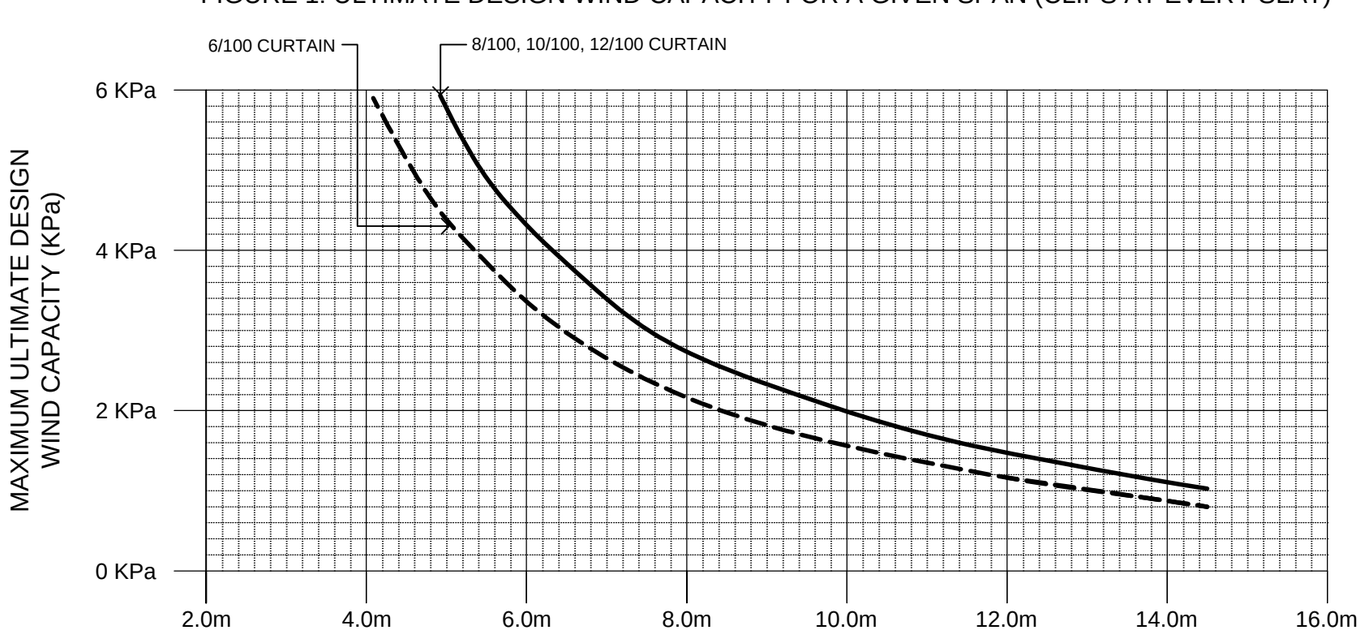


NOTE: CURTAIN WIDTH = OPENING WIDTH + CURTAIN OVERLAPS

FIGURE 1: ULTIMATE DESIGN WIND CAPACITY FOR A GIVEN SPAN (CLIPS AT EVERY SLAT)



NOTE: CURTAIN WIDTH = OPENING WIDTH + CURTAIN OVERLAPS

FIGURE 2: ULTIMATE DESIGN WIND CAPACITY FOR A GIVEN SPAN (CLIPS AT EVERY 2nd SLAT)

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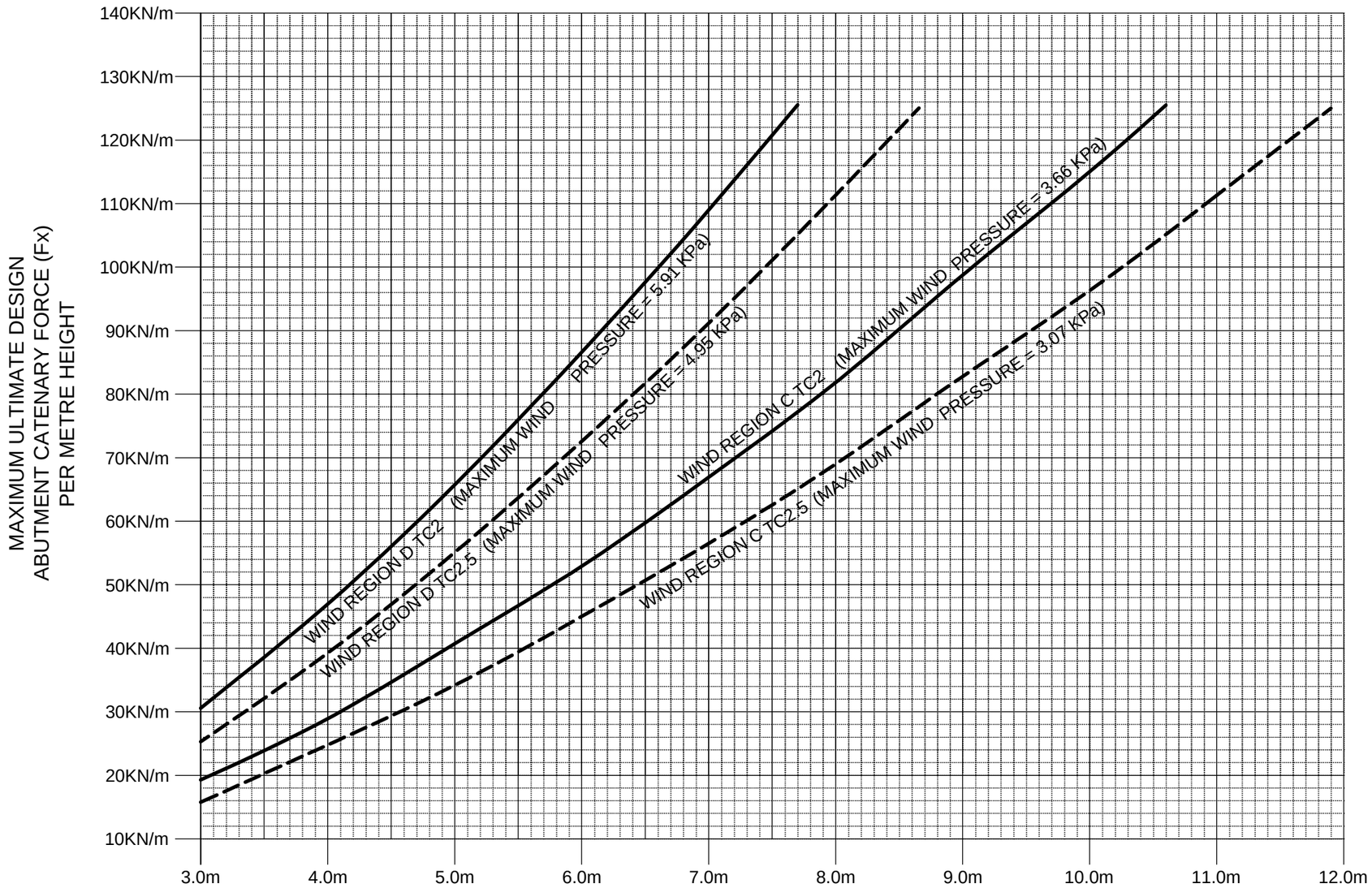

OPENING WIDTH (SPAN) (L)

FIGURE 3: ULTIMATE DESIGN CATENARY FORCE
FOR A GIVEN SPAN AND WIND PRESSURE
(CYCLONIC WIND REGIONS)

NOTE 1: $Fy = \frac{WL}{2}$

WHERE Fy = MAXIMUM OUT OF PLANE ULTIMATE DESIGN ABUTMENT FORCE (PER METRE HEIGHT)
W = ULTIMATE DESIGN WIND PRESSURE (kPa)
L = OPENING WIDTH (SPAN) (m)

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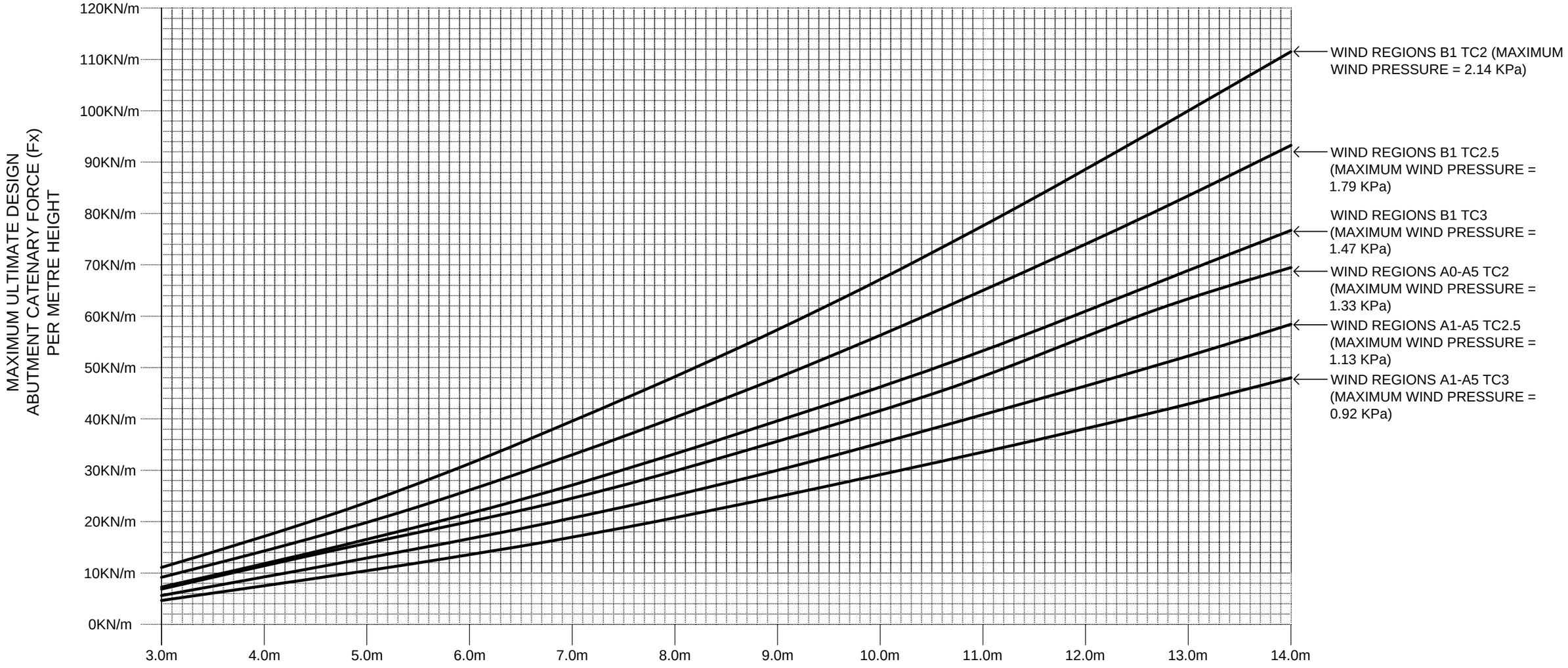

FIGURE 4: ULTIMATE DESIGN CATENARY FORCE FOR A GIVEN SPAN AND WIND PRESSURE (NON-CYCLONIC WIND REGIONS)

NOTE 1: $Fy = \frac{WL}{2}$

WHERE Fy = MAXIMUM OUT OF PLANE ULTIMATE DESIGN ABUTMENT FORCE (PER METRE HEIGHT)
W = ULTIMATE DESIGN WIND PRESSURE (kPa)
L = OPENING WIDTH (SPAN) (m)

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DRAWING 100mm SERIES ROLL-A-SHUTTER DOOR SPAN TABLES. DRAWING 9 OF 9

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