

PROVISTA

BALUSTRADE SYSTEMS

EURO SLAT BALUSTRADE & POOL FENCE



"THE CHOICE IS CLEAR"



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COMMERCIAL & RESIDENTIAL BALUSTRADE DESIGN

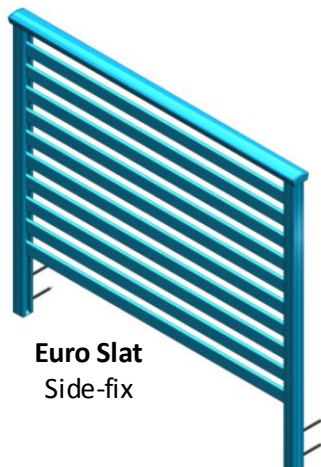
Euro Slat Balustrade & Pool Fence

Description:

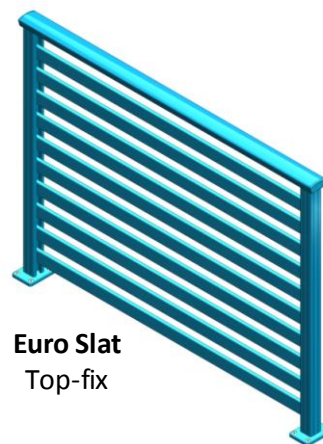
Provista Balustrade Systems Aluminum Euro Slat product features a pleasing rectangular profile suiting both classic and contemporary building design. Provista Euro Slat is a versatile solution for deck and pool screening as well as garden and driveway gates. Sizes of screen panels and gaps between slats can be fabricated to suit the required design and completed panels are held within the rebates of our semi-frameless post profiles. As such a balustrade or pool fence can comprise a combination of semi-frameless glass and Euro Slat, tailored to the desired look. For deck balustrade applications, there's a choice of flat or rounded handrail profiles and the Euro Slat panel can either be full height finishing at underside of the handrail or a gap can be left for a different visual perspective.

Key Features:

- Designed for residential and commercial applications including apartment balconies and decks
- Suitable for both interior or exterior applications
- Hidden-fixings for face-fixed solutions
- Designed for all building structures including membrane decks
- T6 Temper Grade alloy used for all profiles, providing approx. 20% increased strength for greater post spacings
- Multiple finish options – can be powder-coated or anodised in all available NZ colours, including Dulux Duratec powder coating for high-corrosion zones
- National design service to assist with project specific design and detailing
- National network of fabricators and installers
- Complies with AS/NZS 1170, NZS3603, AS/NZS 1664, AS/NZS 2208 and NZS 4223.3 2016
- 5 year warranty on balustrade, 10 year warranty on Dulux Duralloy powder-coating, 20 year warranty on Dulux Duratec powder-coating



Euro Slat
Side-fix



Euro Slat
Top-fix

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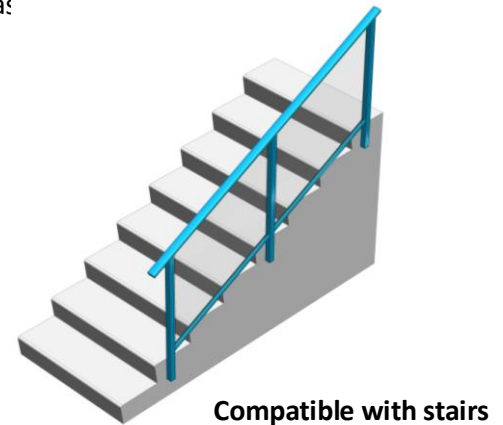
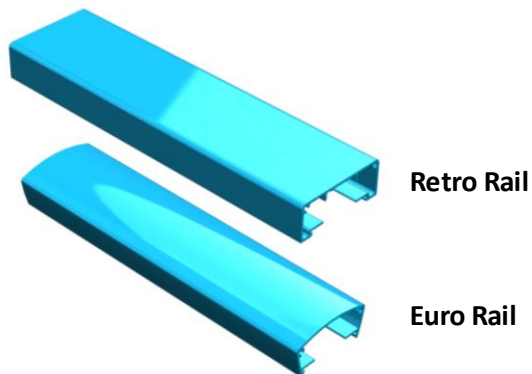
Scope of Use:

Provista Euro Slat solutions are designed to comply with A, B, E and C3 loadings for residential and commercial occupancy types and are suitable for decks, balconies, stairways, gates and landscape screening.

Suitable building structures can be timber, concrete, steel and typical combinations of each. Provista Euro Slat balustrade and pool fence solutions can also be used in conjunction with the Provista Gutter Bracket – a robust stainless steel product designed to be specified where membrane decks and gutters are required.

A rectangular(‘Retro’) handrail and rounded(‘Euro’) handrail options are available.

Address or Site-specific design and Producer Statements can be arranged as:



Limitations on Use:

- Provista Aluminium Euro Slat solutions should only be used in accordance with the Provista Technical Manual. The Manual confirms post spacings and fixing methods available
- Not suitable for Commercial Occupancy Type C5
- Specified for use in Very High Wind Zones but Site Specific PS1 and Calculations can be provided for Extreme Wind Zones
- For high corrosion zones use Dulux Duratec powder-coating

NZS 3604 MAXIMUM SUITABILITY



Very High Wind Zone

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In-service History:

Provista has over 10 years of balustrade and pool fence design, development and installation experience across New Zealand. Provista products are designed and manufactured for NZ conditions. The Provista Euro Slat styles have been installed in thousands of homes, apartments, schools, aged care villages etc.

Many kilometers of Provista framed balustrade solutions are installed across the length and breadth of NZ

Statement of Building Code Compliance:

- Provista Balustrade Systems solutions have been designed and tested by independent engineers to comply with:
 - o AS/NZS 1170 Structural Design Actions
 - o NZS3603 Timber Structures Standard
 - o AS/NZS 1664 Aluminium Structures – allowable stress design
 - o AS/NZS 2208 Safety Glazing Materials in Buildings
 - o NZS 4223.3 2016 Glazing in Buildings – Human Impact Safety Requirements
- Euro Slat Aluminium solutions are designed for Occupancy A, B, E and C3
- Designs are engineered to comply with B1, B2, F2 and F4 of the NZ Building Code
- For applications outside the Provista Technical Manual specifications a Site Specific PS1 can be prepared upon request

NZBC DESIGNED TO COMPLY

B1

B2

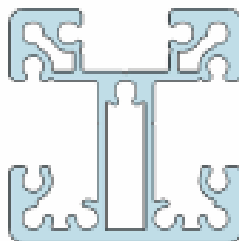
F2

F4

Structure Durability Hazardous Materials Safety From Falling

Exclusive to Provista Balustrade Systems

53mm x 53mm Heavy duty Ultra 3 way post for unparalleled strength and versatility.



33142

**Ultra post
53x53**

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General Notes

GENERAL NOTE :

- (1) THE BALUSTRADE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE ARCHITECTS AND ENGINEERS DRAWINGS.
- (2) ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE AGAINST THE ARCHITECTS AND ENGINEERS DRAWINGS PRIOR TO COMMENCING WORK – ANY VARIATIONS OR DISCREPANCIES ARE TO BE REFERRED TO THE CONSULTANT FOR RESOLUTION.
- (3) ALL WORK IS TO COMPLY WITH THE NZ BUILDING CODE.
- (4) REMOVE ALL EXCESS MATERIALS AND RUBBISH FROM SITE AND REINSTATE ANY DAMAGE ON COMPLETION OF WORK.
- (5) THE CONSULTANTS ARE TO BE GIVEN 24 HOURS NOTICE FOR ANY SITE INSPECTIONS AS REQUIRED – A PS4 CANNOT BE PROVIDED (PRODUCER STATEMENT FOR CONSTRUCTION REVIEW) IF THE CONSULTANT IS NOT INFORMED OF AND INSPECTS ANY WORK REQUIRING A SPECIFIC INSPECTION AS REQUIRED BY THE LOCAL TERRITORIAL AUTHORITY.

EXISTING SUPPORT STRUCTURE:

- (1) THE EXISTING DECK, BALCONY OR PAVING STRUCTURE MUST HAVE BEEN CONSTRUCTED TO COMPLY WITH THE LOCAL TERRITORIAL AUTHORITY REGULATIONS AND REQUIREMENTS. THE NZ BUILDING CODE AND NZS 3604.
- (2) ALL CONCRETE USED IS TO HAVE A CRUSHING STRENGTH OF 20 MPA AT 28 DAYS AND IS TO COMPLY WITH NZS 3109.
- (3) ALL WELDS ARE TO BE 5MM FILLET WELDS ALL ROUND UNLESS NOTED OTHERWISE – ALL WELDING TO BE CARRIED OUT BY WELDERS QUALIFIED IN ACCORDANCE WITH NZS4711.
- (4) ALL BOLTS AND BRACKETS ARE TO BE HOT DIP GALVANISED UNLESS NZS 3604: 1999 CORROSION ZONE TABLES REQUIRE A BETTER PROTECTION.
- (5) ALL CHEMSET ANCHORS TO BE FIXED TO MANUFACTUR'S SPECIFICATION.
- (6) ALL STEELWORK IS TO BE PROTECTED AS REQUIRED BY THE NZ BUILDING CODE.

NEW CONSTRUCTION NOTES:

- (1) THE EXISTING SUPPORTING STRUCTURE DETAILS ARE NOT COVERED BY THESE DRAWINGS.
- (2) THESE DRAWINGS ONLY COVER INSTALLATION DETAILS OF THE NEW STAINLESS STEEL BALUSTRADE AND GLASS FENCE/HANDRAIL.
- (3) ALL BOLTS CLASS 80 AND BRACKETS ARE TO BE 316 STAINLESS STEEL.
- (4) ALL DYNABOLTS OR CHEMSET CONCRETE ANCHORS TO BE CLASS 80 STAINLESS STEEL AND FIXED TO MANUFACTURER'S SPECIFICATION.
- (5) ALL DAMAGE TO EXISTING STRUCTURE CAUSED BY CONSTRUCTION TO BE REINSTATED.
- (6) PREVENT CONTACT BETWEEN ALL DISSIMILAR MATERIALS IE: GALVANISED STEEL AND ALUMINIUM BY SEPARATING WITH NEOPRENE WASHERS.
- (7) ALL GLASS PANELS ARE TO BE TOUGHENED GLASS TO COMPLY WITH THE NZ BUILDING CODE.
- (8) ALL GLASS PANELS ARE TO BE SEATED ON NYLON WASHERS OR BUSHES AT ALL SUPPORT BRACKETS AND BOLTS.
- (9) ALL SEALANTS ARE TO COMPLY WITH THE REQUIREMENTS FOR THE SPECIFIC USE INTENDED DURING CONSTRUCTION.



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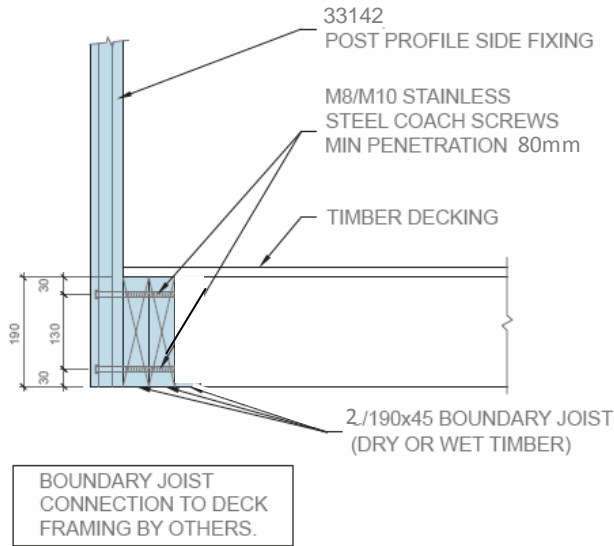
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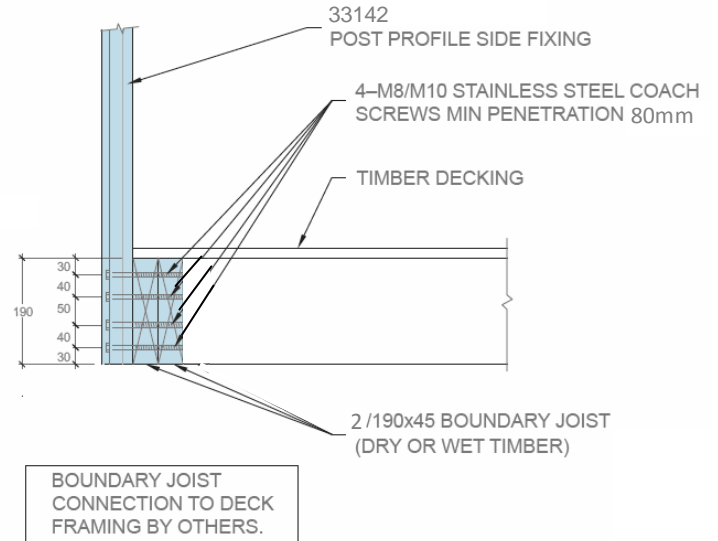
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EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 1 – Timber Side-Fix 2 x 190x45 (Coach Screws)



1a CONNECTION TYPE 1A – SIDE FIXING TO 2/190x45 TIMBERS WITH 2 COACH SCREWS
SCALE 1:10



1b CONNECTION TYPE 1B – SIDE FIXING TO 2/190x45 TIMBERS WITH 4 COACH SCREWS
SCALE 1:10

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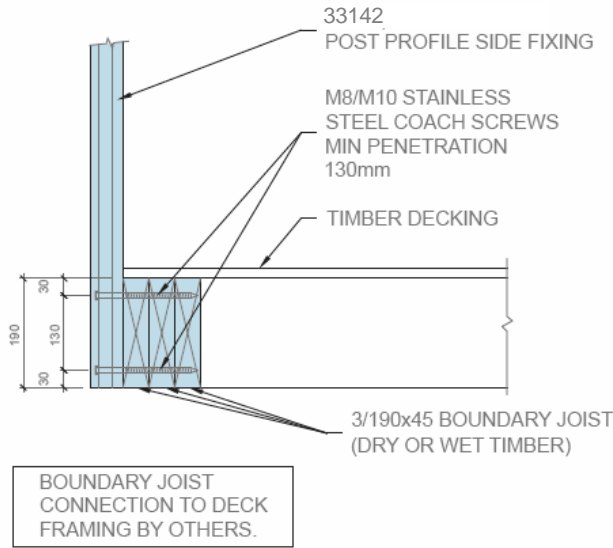
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)			
			Type 1a & 1b			
			Coach Screw with HIT-RE 500 Epoxy Side Fixing to Timber Deck			
			2/190x45 Boundary Joist			
			2/M10	4/M8	4/M10	
			Dry	Wet		
1M	33142 Ultra	Side	0.80	0.90	1.10	0.85
1.1M	33142 Ultra	Side	0.80	0.80	1.00	0.80
1.2M	33142 Ultra	Side	-	-	0.85	-
1.3M	33142 Ultra	Side	-	-	-	-
1.4M	33142 Ultra	Side	-	-	-	-
1.5M	33142 Ultra	Side	-	-	-	-
1.6M	33142 Ultra	Side	-	-	-	-
1.7M	33142 Ultra	Side	-	-	-	-
1.8M	33142 Ultra	Side	-	-	-	-

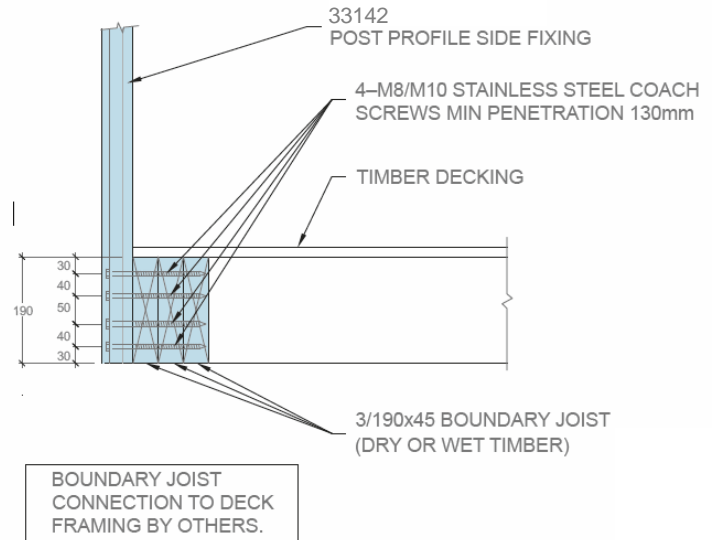
The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths for coach screws with Hilti HIT-RE Epoxy.

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 1 – Timber Side-Fix 3 x 190x45 (Coach Screws)



1a CONNECTION TYPE 1A – SIDE FIXING TO 3/190x45 TIMBERS WITH 2 COACH SCREWS
SCALE 1:10



1b CONNECTION TYPE 1B – SIDE FIXING TO 3/190x45 TIMBERS WITH 4 COACH SCREWS
SCALE 1:10

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Timber to Aluminium Design

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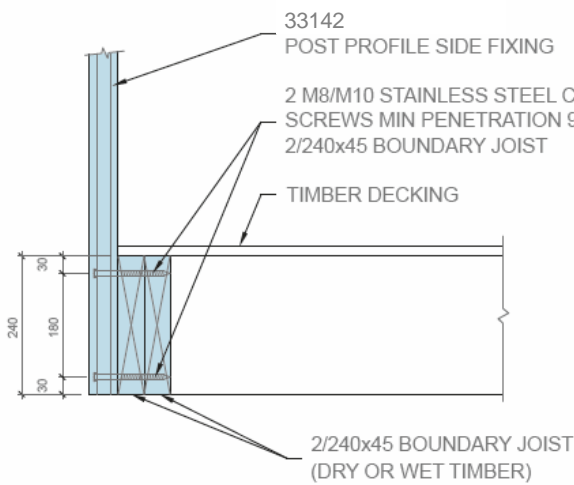
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)							
			Type 1a & 1b							
			Coach Screw with HIT-RE 500 Epoxy Side Fixing to Timber Deck							
			3/190x45 Boundary Joist							
			2/M8		2/M10		4/M8		4/M10	
Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet			
1M	33142 Ultra	Side	0.95	1.15	0.90	1.30	1.00	1.45	1.25	
1.1M	33142 Ultra	Side	0.85	1.05	0.80	1.20	0.90	1.30	1.15	
1.2M	33142 Ultra	Side	0.70	0.90	-	1.05	0.80	1.10	1.00	
1.3M	33142 Ultra	Side	-	0.85	-	1.05	-	1.20	0.80	
1.4M	33142 Ultra	Side	-	0.80	-	0.95	-	1.10	0.75	
1.5M	33142 Ultra	Side	-	0.70	-	0.85	-	0.95	-	
1.6M	33142 Ultra	Side	-	-	-	0.75	-	0.85	-	
1.7M	33142 Ultra	Side	-	-	-	-	-	0.75	-	
1.8M	33142 Ultra	Side	-	-	-	-	-	-	-	

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths for coach screws with Hilti HIT-RE Epoxy.

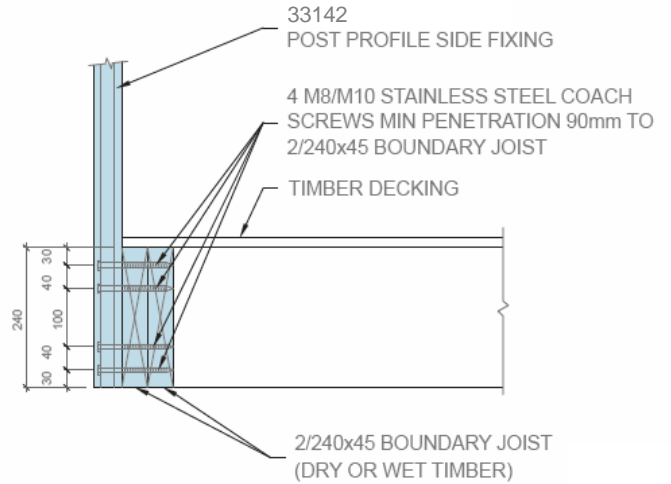
EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 1 – Timber Side-Fix 2 x 240x45 (Coach Screws)



BOUNDARY JOIST CONNECTION TO DECK FRAMING BY OTHERS.

1c CONNECTION TYPE 1C – SIDE FIXING TO 2/240x45 TIMBERS WITH 2 COACH SCREWS
SCALE 1:10



BOUNDARY JOIST CONNECTION TO DECK FRAMING BY OTHERS.

1d CONNECTION TYPE 1E – SIDE FIXING TO 2/240x45 TIMBERS WITH 4 COACH SCREWS
SCALE 1:10

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Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind Zone Across New Zealand

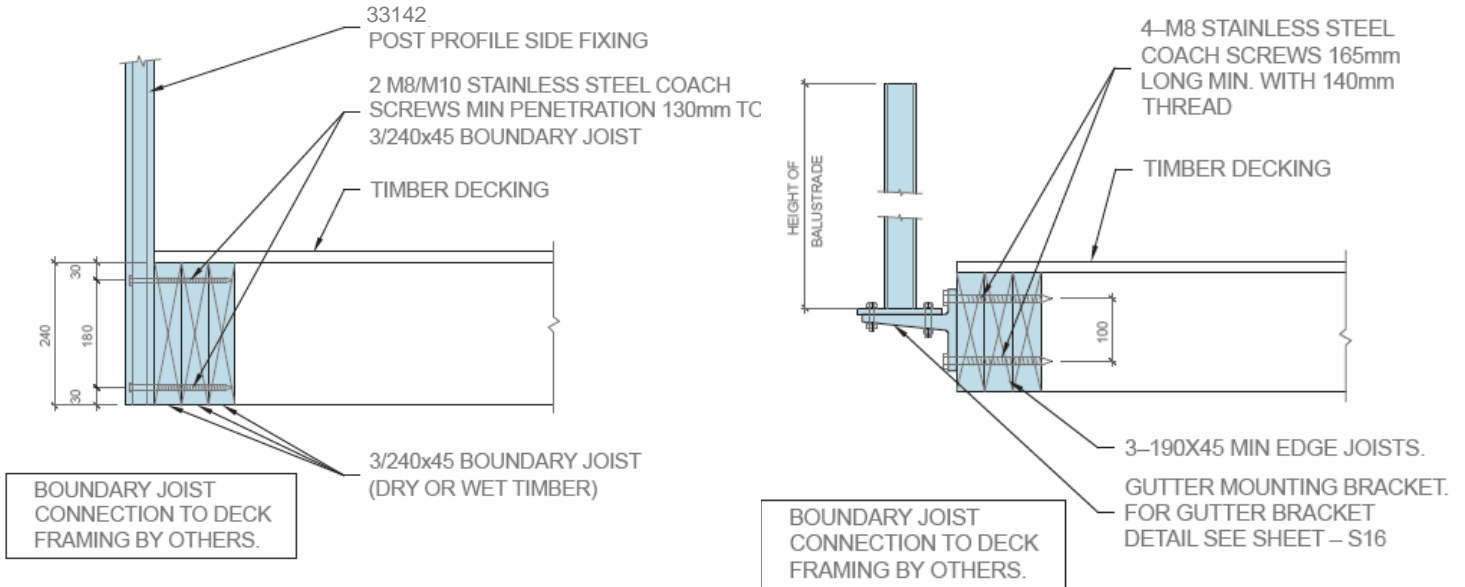
Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)							
			Type 1c & 1d							
			Coach Screw with HIT-RE 500 Epoxy Side Fixing to Timber Deck							
			2/240x45 Boundary Joist							
			2/M8	2/M10		4/M8		4/M10		
Dry	Dry	Wet	Dry	Wet	Dry	Wet				
1M	33142 Ultra	Side	0.90	1.10	0.85	1.40	1.10	1.45	1.35	
1.1M	33142 Ultra	Side	0.80	0.85	0.80	1.25	1.00	1.30	1.25	
1.2M	33142 Ultra	Side	-	0.85	-	1.00	0.85	1.10	1.05	
1.3M	33142 Ultra	Side	-	0.80	-	1.10	0.80	1.20	0.90	
1.4M	33142 Ultra	Side	-	0.75	-	1.05	0.75	1.10	0.80	
1.5M	33142 Ultra	Side	-	-	-	0.90	-	0.95	0.70	
1.6M	33142 Ultra	Side	-	-	-	0.80	-	0.85	-	
1.7M	33142 Ultra	Side	-	-	-	0.70	-	0.75	-	
1.8M	33142 Ultra	Side	-	-	-	-	-	0.65	-	

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths for coach screws with Hilti HIT-RE Epoxy.

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 1 – Timber Side-Fix 3 x 240x45 (Coach Screws)



1e CONNECTION TYPE 1E – SIDE FIXING TO 3/240x45 TIMBERS WITH 2 COACH SCREWS
SCALE 1:10

1f CONNECTION TYPE 1F – SIDE FIXING TO 3/190x45 TIMBERS WITH 4 COACH SCREWS
SCALE 1:10

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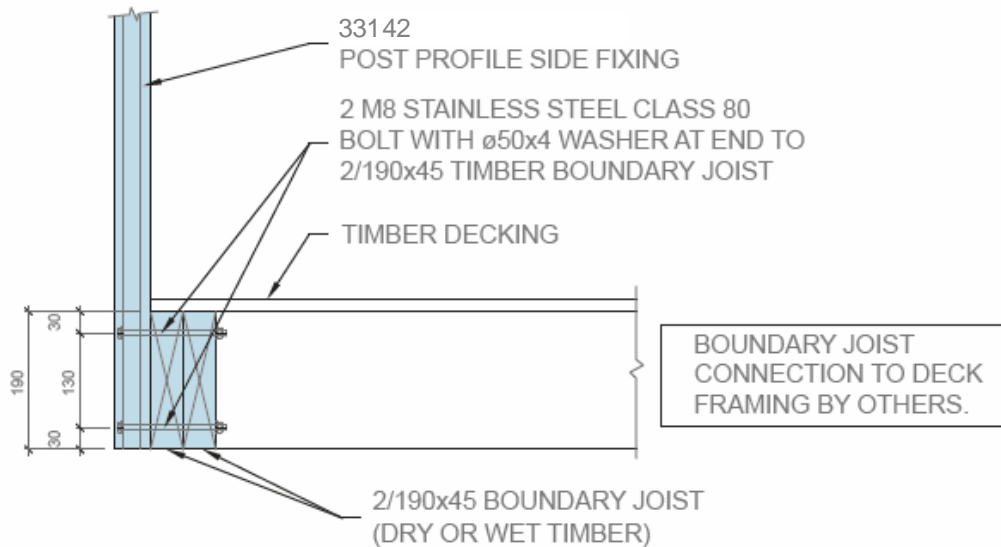
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)					
			Type 1					
			Coach Screw with HIT-RE 500 Epoxy Side Fixing to Timber Deck					
			3/240x45 Boundary Joist				3 x 190x45 Boundary joist	
			2/M8		2/M10		4/M8 Gutter Bracket	
Dry	Wet	Dry	Wet	Dry	Wet			
1M	33142 Ultra	Side	1.30	1.00	1.30	1.25	1.30	1.00
1.1M	33142 Ultra	Side	1.20	0.90	1.30	1.15	1.20	0.90
1.2M	33142 Ultra	Side	1.00	0.80	1.10	1.00	1.00	0.80
1.3M	33142 Ultra	Side	1.05	-	1.15	0.80	-	-
1.4M	33142 Ultra	Side	0.95	-	1.10	0.75	-	-
1.5M	33142 Ultra	Side	0.85	-	0.95	-	-	-
1.6M	33142 Ultra	Side	0.75	-	0.85	-	-	-
1.7M	33142 Ultra	Side	-	-	-	-	-	-
1.8M	33142 Ultra	Side	-	-	-	-	-	-

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths for coach screws with Hilti HIT-RE Epoxy.

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 2 – Bolt Side-Fix 2 x 190x45



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Structural & Engineering Design

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2a
CONNECTION TYPE 2A – SIDE FIXING TO 2/190x45
TIMBERS WITH 2 BOLTS WASHERS & NUTS
SCALE 1:10

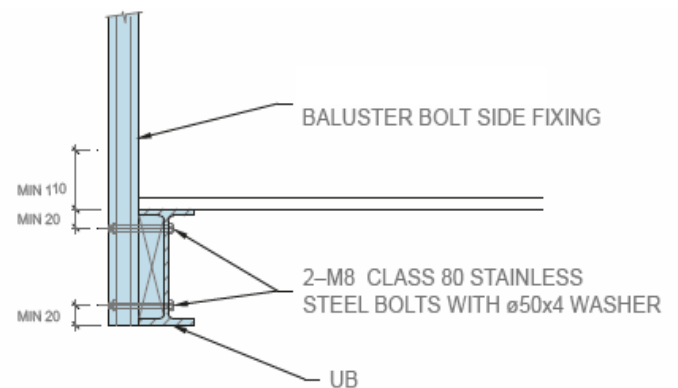
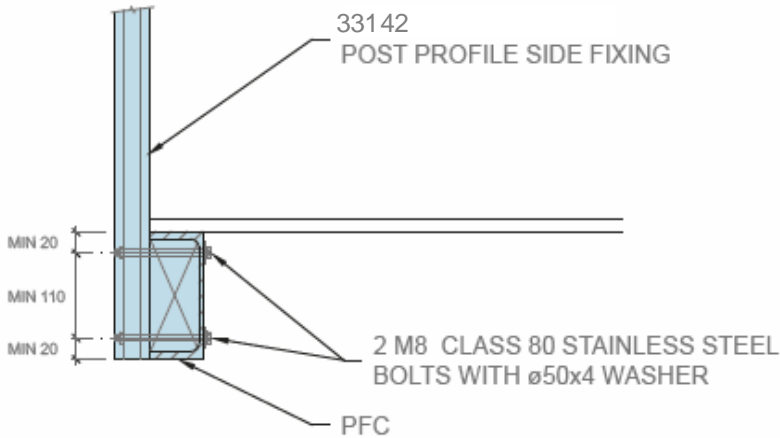
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)
			Type 2
			Bolt side fixing to timber 2 x 190x45
			2/M8
1M	33142 Ultra	Side	1.45
1.1M	33142 Ultra	Side	1.30
1.2M	33142 Ultra	Side	1.20
1.3M	33142 Ultra	Side	1.20
1.4M	33142 Ultra	Side	1.10
1.5M	33142 Ultra	Side	0.95
1.6M	33142 Ultra	Side	0.85
1.7M	33142 Ultra	Side	0.75
1.8M	33142 Ultra	Side	0.65

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths.

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 2 – Bolt Side Fix Steel Beam



2b
CONNECTION TYPE 2B – SIDE FIXING TO
STEEL BEAMS WITH 2 BOLTS WASHERS & NUTS
SCALE 1:10

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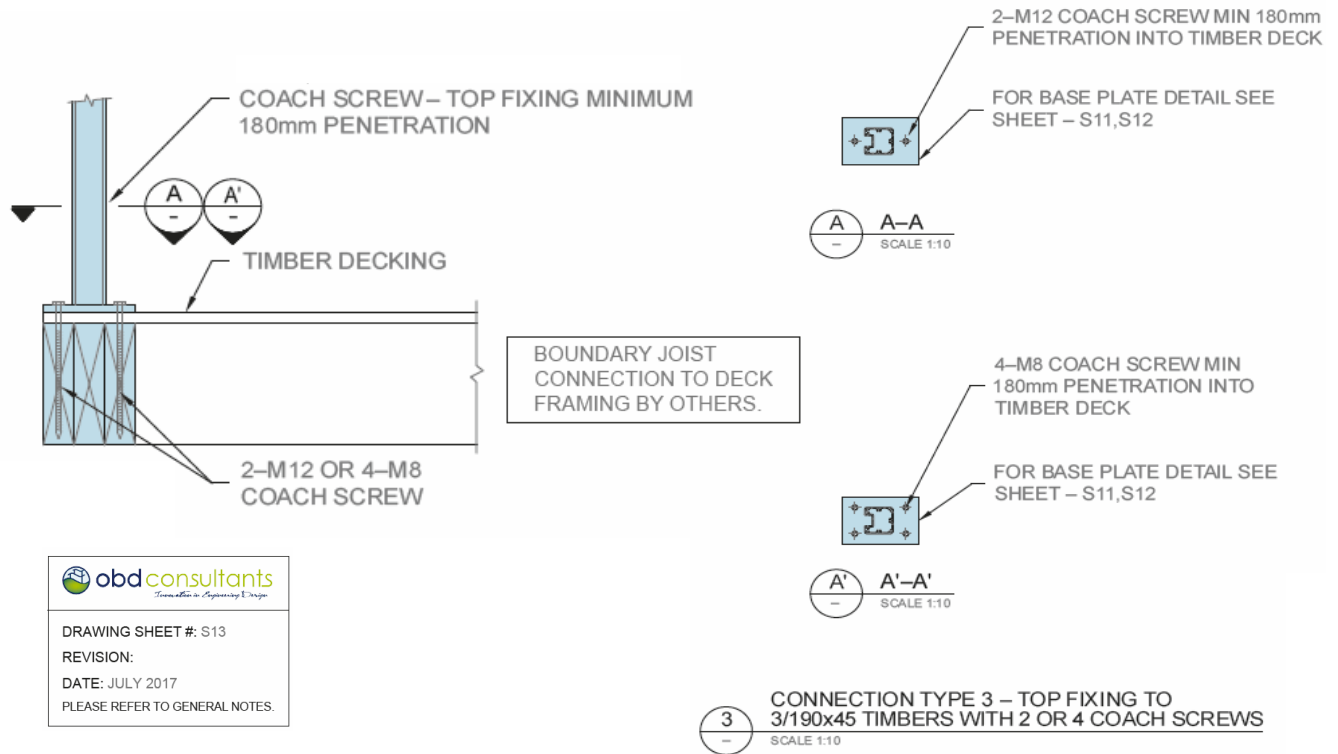
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)	
			Type 2	
			Bolt Side Fix Steel Beam	
			2/M8	
1M	33142 Ultra	Side	1.45	
1.1M	33142 Ultra	Side	1.30	
1.2M	33142 Ultra	Side	1.20	
1.3M	33142 Ultra	Side	1.20	
1.4M	33142 Ultra	Side	1.10	
1.5M	33142 Ultra	Side	0.95	
1.6M	33142 Ultra	Side	0.85	
1.7M	33142 Ultra	Side	0.75	
1.8M	33142 Ultra	Side	0.65	

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths.

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 3 – Timber Top-Fix



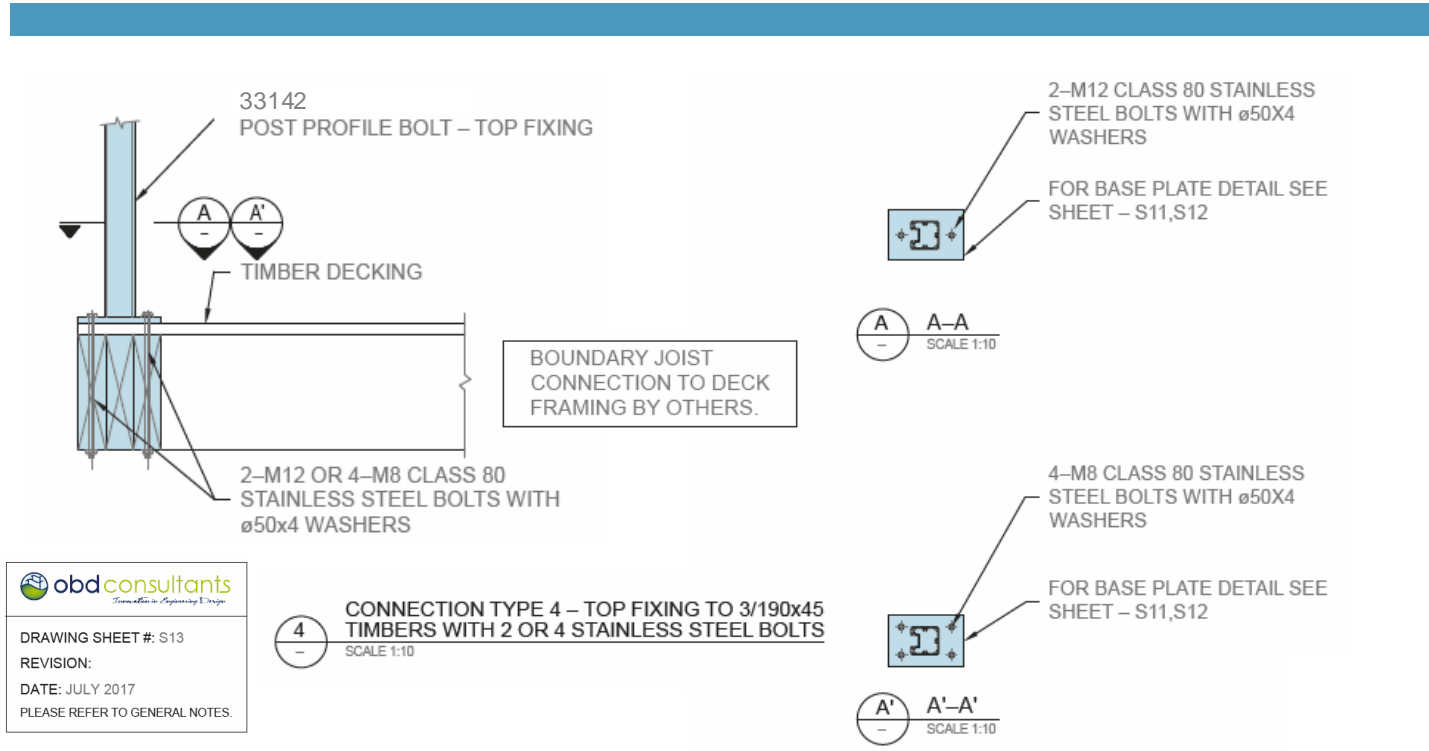
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)			
			Type 3			
			Coach Screw with HIT-RE 500 Epoxy Top Fixing to Timber Deck			
			4/M8		2/M12	
			Dry	Wet	Dry	Wet
1M	33142 Ultra	Top	1.45	1.45	1.45	1.20
1.1M	33142 Ultra	Top	1.30	1.30	1.30	1.10
1.2M	33142 Ultra	Top	1.20	1.20	1.20	1.00
1.3M	33142 Ultra	Top	1.10	1.10	1.10	0
1.4M	33142 Ultra	Top	1.10	1.10	1.10	-
1.5M	33142 Ultra	Top	1.00	1.00	1.00	-
1.6M	33142 Ultra	Top	0.90	0.90	0.90	-
1.7M	33142 Ultra	Top	0.80	0.80	-	-
1.8M	33142 Ultra	Top	0.70	-	-	-

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths for coach screws with Hilti HIT-RE Epoxy.

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 4– Timber Top-Fix



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Construction & Engineering Design

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Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)	
			Type 4	
			Bolt Top Fixing Timber Deck	
			4/M8	2/M12
			Dry & Wet	
1M	33142 Ultra	Top	1.45	1.45
1.1M	33142 Ultra	Top	1.30	1.30
1.2M	33142 Ultra	Top	1.20	1.20
1.3M	33142 Ultra	Top	1.10	1.10
1.4M	33142 Ultra	Top	1.10	1.10
1.5M	33142 Ultra	Top	1.00	1.00
1.6M	33142 Ultra	Top	0.90	0.90
1.7M	33142 Ultra	Top	0.80	0.80
1.8M	33142 Ultra	Top	0.70	0.70

The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths.

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 5 – Concrete Top-Fix



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Transmission & Engineering Design

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5
CONNECTION TYPE 5
TOP FIXING TO CONCRETE
SCALE 1:10

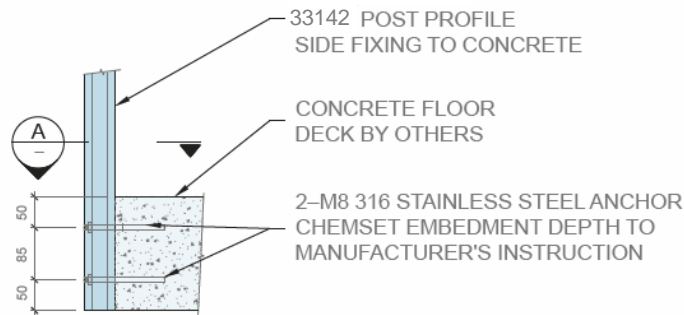
Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)	
			Type 5	
			Chemset Anchor Top Fixing Concrete	
1M	33142 Ultra	Top	1.45	
1.1M	33142 Ultra	Top	1.30	
1.2M	33142 Ultra	Top	1.20	
1.3M	33142 Ultra	Top	1.10	
1.4M	33142 Ultra	Top	1.10	
1.5M	33142 Ultra	Top	1.00	
1.6M	33142 Ultra	Top	0.90	
1.7M	33142 Ultra	Top	0.80	
1.8M	33142 Ultra	Top	0.70	

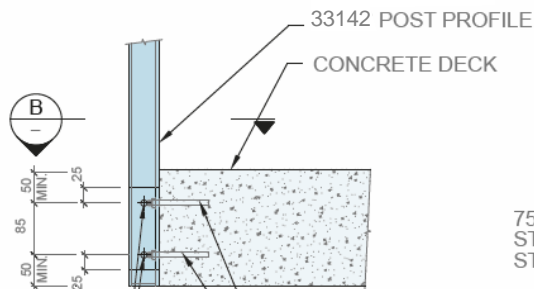
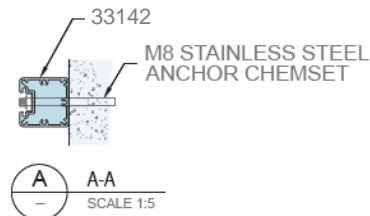
The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths.

EURO SLAT BALUSTRADE & POOL FENCE

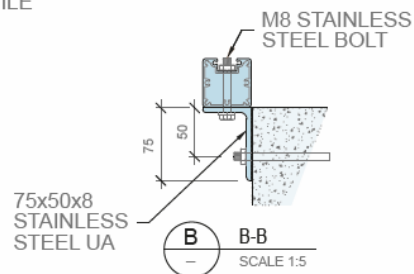
Connection Type 6 – Concrete Side-Fix



6a
CONNECTION TYPE 6a – SIDE FIXING TO
CONCRETE WITH STEEL ANCHOR CHEMSET
SCALE 1:10



6b
CONNECTION TYPE 6b – SIDE FIXING TO
CONCRETE WITH 75x50x8 STAINLESS STEEL UA
SCALE 1:10



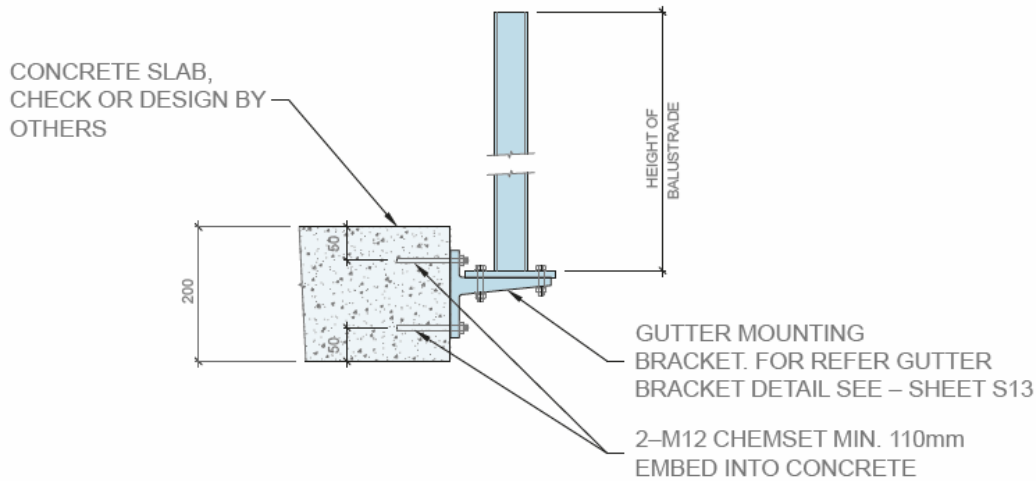
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See Post Spacing table next page

EURO SLAT BALUSTRADE & POOL FENCE

Connection Type 6 – Concrete Side-Fix



CONNECTION TYPE 6c – SIDE FIXING TO CONCRETE WITH GUTTER MOUNTING BRACKET
SCALE 1:10

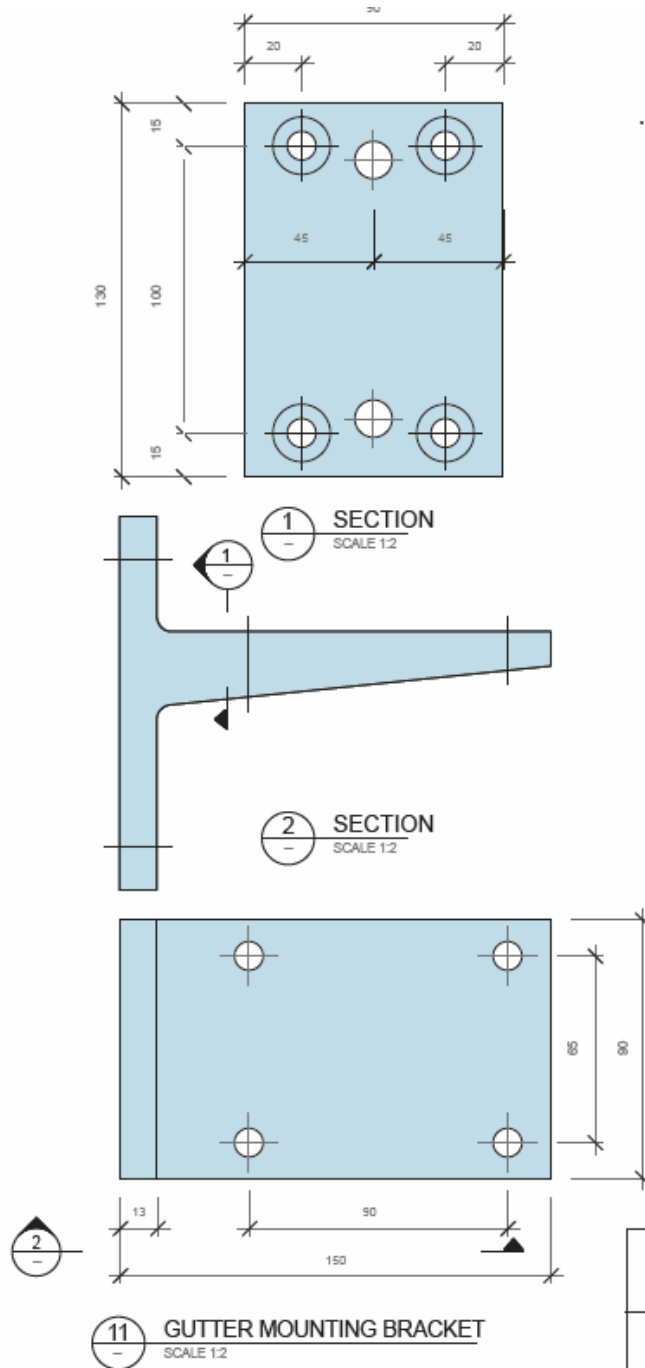
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Balustrade Spacing summary Table to NZS:1170 Minimum Imposed Action to Barrier and NZS:3604 Very High Wind Zone Across

Balustrade Height	Post Section Model	Fixing Type	Maximum Post Spacing (M)
			Type 6
			Side Fixing Concrete
1M	33142 Ultra	Side	1.45
1.1M	33142 Ultra	Side	1.30
1.2M	33142 Ultra	Side	1.20
1.3M	33142 Ultra	Side	1.20
1.4M	33142 Ultra	Side	1.10
1.5M	33142 Ultra	Side	0.95
1.6M	33142 Ultra	Side	0.85
1.7M	33142 Ultra	Side	0.75
1.8M	33142 Ultra	Side	0.65

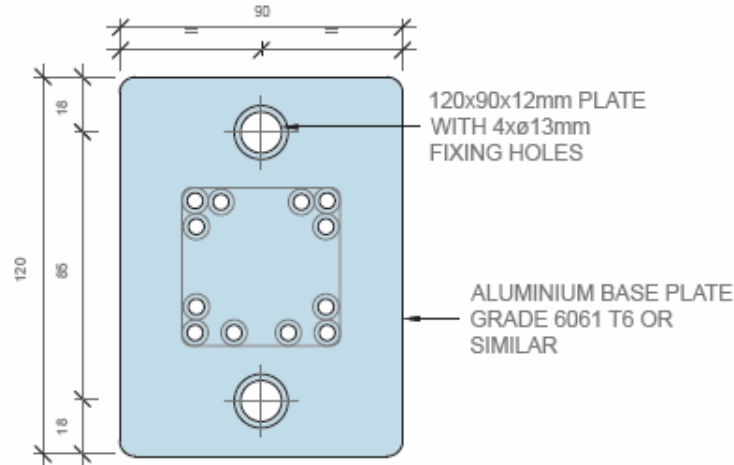
The above table summarises the maximum balustrade post spacing that can be achieved based on balustrade post strength and connection strengths.

Gutter Bracket Design

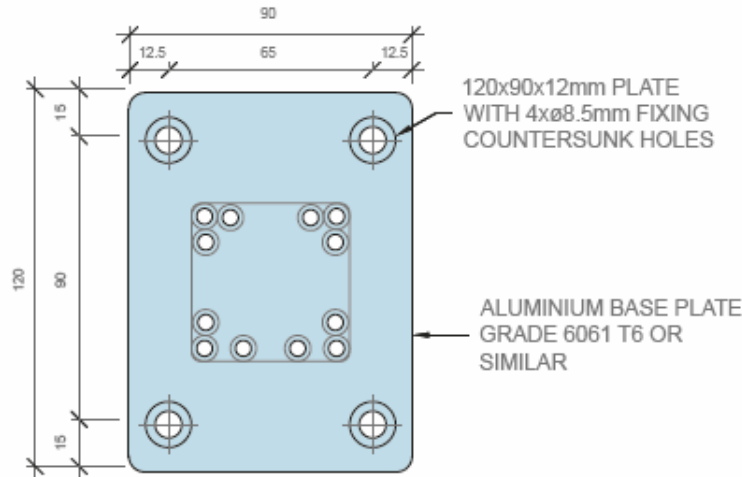


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Base Plate Design – Euro Slat



7 PART NO. SC213 BASE PLATE
SCALE 1:2



8 PART NO. SW485 BASE PLATE
SCALE 1:2

NOTE - BOTH SC213 AND SW385 BASE PLATES MATE WITH 31557 AND 33142 POST PROFILES



DRAWING SHEET #: S11

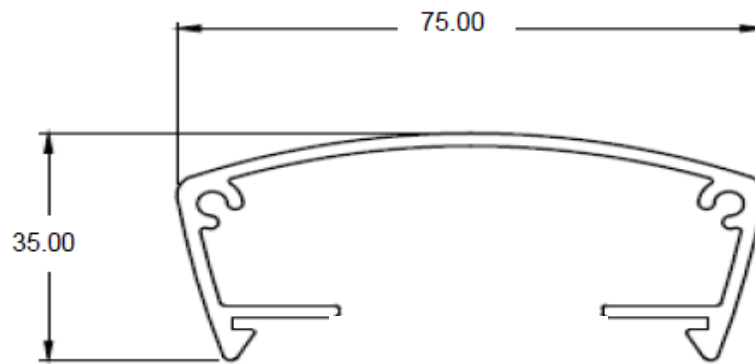
REVISION: A

DATE: 10 NOVEMBER 2016

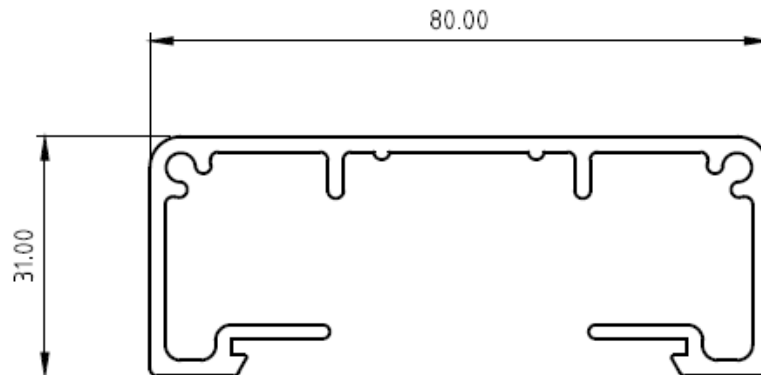
PLEASE REFER TO GENERAL NOTES.

Handrail Dimensions

Euro Handrail



Retro Handrail



“THE CHOICE IS CLEAR”