

FenceLab

by Edgesmith



THE BOSS

PS1

Producer Statement
Commercial and Residential Balustrades

DESIGN COMPLIANCE

The design is in compliance with the New Zealand Building Code (NZBC), NZS 3604:2011 section B1 and F4. Barrier loadings meet AS/NZS 1170.1:2002

WWW.FENCELAB.CO.NZ

THE BOSS BALUSTRADE SYSTEM

The Boss is New Zealand's most durable and versatile raking steel fence panel. Balustrade compliance, durability and rakability make Boss panels ideal for residential housing developments and other infrastructure projects. The panels rake up to 30 deg and are balustrade compliant at 2.4m wide. PS1 certificates covering a wide range of applications and fixing details are available on the website.



Close-up View



APPLICATIONS

The New Zealand Building Code (AS/NZS 1170.1:2002) designates different occupancy types and specifies the load ratings that the system must be capable of withstanding. The system comprises of the panel, posts, fixings and the structure that the balustrade is being attached to. These are summarised in the table below. Refer to the drawings on pages 7-9 for more details.

Setting	Application	Occupancy Type	Design Load	Post Centers	Posts	Fixing Options	Details
Single Dwelling, Residential, Commercial, Parks, Schools and Single or Multi Dwelling Residential	Timber Deck	A	0.75kN/m	2.4m	Steel 65SHS x 2.5mm	Coach Bolt or Coach Screw	Pg. 9
	Timber Retaining Wall	A, B, E, C3	0.75kN/m	2.4m	Steel 65SHS x 2.5mm	Coach Bolt or Coach Screw	Pg. 7
	In-ground	A, B, E, C3	0.75kN/m	2.4m	Steel 65SHS x 2.5mm	N/A	Pg. 7
	Concrete	A, B, E, C3	0.75kN/m	2.4m	Steel 65SHS x 2.5mm	Screw Bolt or Chem Set Rod	Pg. 8
	Concrete Block Wall	A, B, E, C3	0.75kN/m	2.4m	Steel 65SHS x 2.5mm	Chem Set Rod	Pg. 8

AS/NZS 1170.1:2002 Table 3.3 Occupancy Reference

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FASTENERS AND CORROSION ZONES

New Zealand's coastal climate means that attention must be paid to the proximity to salt water when choosing what fasteners to use. The table below is a guide to where hot dip galvanised fasteners can be used. While it may seem counter intuitive that sheltered installations require stainless steel fittings even within 5km of the sea, it is because regular exposure to rain fall cleans the fasteners and prolongs their life.

Environment	Corrosion Classification	Exposed	Sheltered
Within 500m of breaking surf or 50m of calm salt water	C4	All fixings 304 Stainless Steel	All fixings 304 Stainless Steel
Within 20km of salt water on West or South Coast of South Island or within 5km of salt water elsewhere	C3	All fixings Hot dip Galvanised or 304 Stainless Steel	All fixings 304 Stainless Steel
More than 20km of salt water on West or South Coast of South Island or more than 5km of salt water elsewhere	C2	All fixings Hot dip Galvanised or 304 Stainless Steel	All fixings Hot dip Galvanised or 304 Stainless Steel

Note 1: While hot dip galvanised fixings are acceptable in inland locations it is safer to use 304 grade stainless steel.

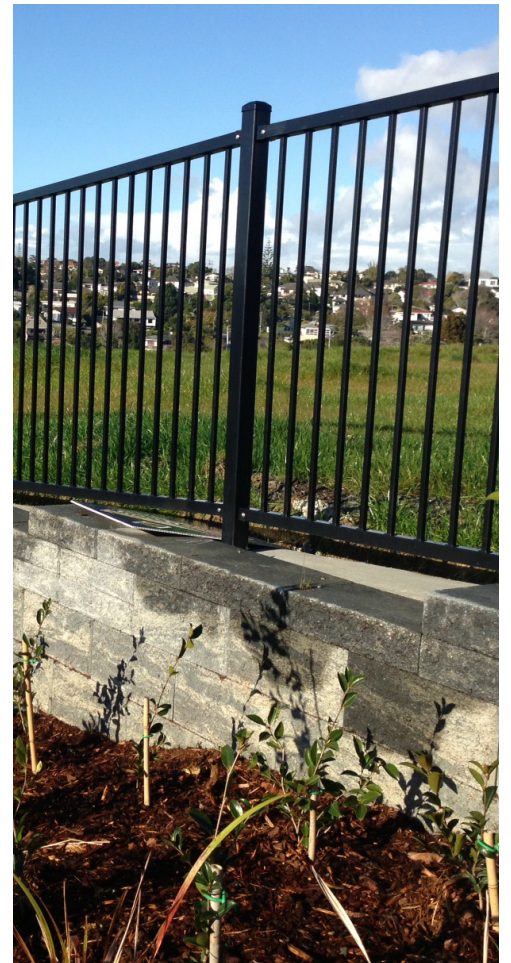
Note 2: The table above is only a guide. Please refer to SNZ TS 3404:2018, Figures 1 to 7 for specific corrosivity maps for further guidance.

INSPECTION AND MAINTANENCE SCHEDULE

This schedule of ongoing maintenance of structural elements shall be included with the O&M manuals and provided to the Owner/Body Corporate and building managers.

Timeframe	Inspection / Maintenance
Half Yearly	Wash down all exposed metalwork including panels, posts and fixings
3 yearly	Check panels, posts and fixings for signs of corrosion. Repair protective coatings or replace as required.
Following seismic shaking > SLS1 event	Inspect and repair as per the 10 yearly requirements.

Full engineers report with design calculations available on request.



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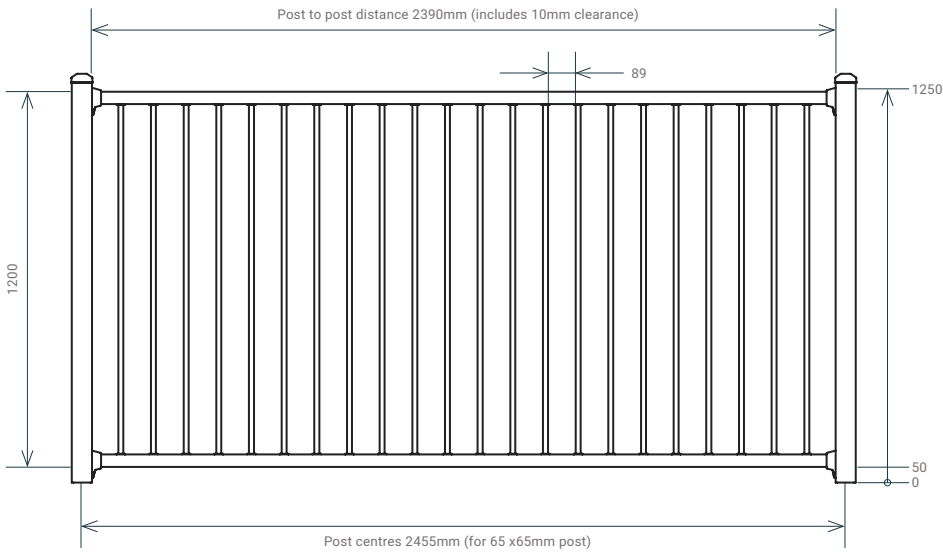
For Commercial and Residential Balustrades

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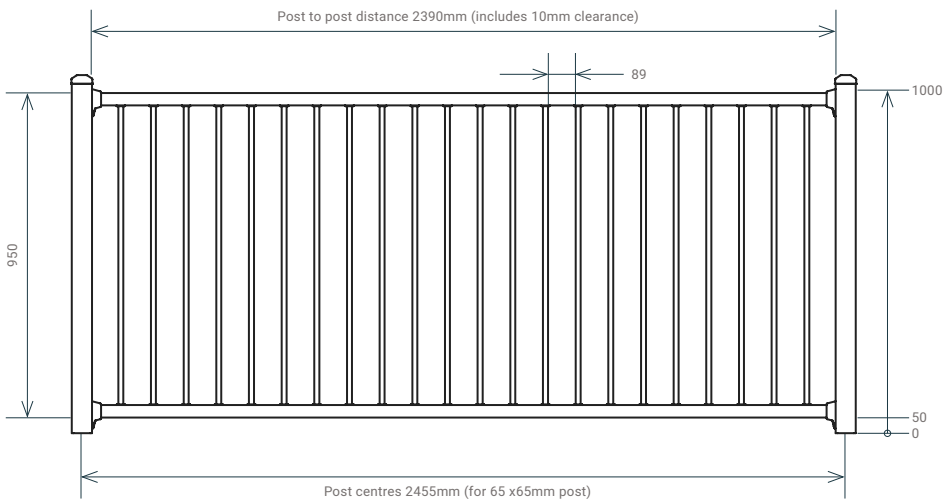
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THE BOSS - 1.2mH



THE BOSS - 0.95mH



Material:

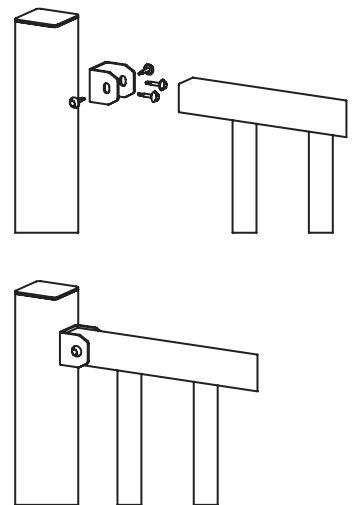
- Steel
- Pickets SHS 16 x 1.0mm
- Top Rail 40 x 40 Boss Channel
- Channel
- Bottom Rail 40 x 40 Boss Channel

Finish:

- Powder Coated

Bracket Fixings:

- Steel U-Brackets or Tube Brackets
- 12g Tek Screws or 14g Pentaforce Security Tek Screws (optional)



THE BOSS

For Commercial and Residential Balustrades



Te Kāhui
Whaihanga
New Zealand
Institute of
Architects



Building Code Clause(s) B1

PRODUCER STATEMENT – PS1 – DESIGN

ISSUED BY: OBD Consultants Ltd
(Design Firm)

TO: Edgesmith Ltd.
(Owner/Developer)

TO BE SUPPLIED TO: Relevant Local Authority
(Building Consent Authority)

IN RESPECT OF: Boss Range (Commercial Landscape & Pool) Balustrade Design
(Description of Building Work)

AT: Throughout New Zealand
(Address)

LOT DP SO

We have been engaged by the owner/developer referred to above to provide Structural Engineering Design services
(Extent of Engagement)

in respect of the requirements of Clause(s) B1 of the Building Code for

All or Part only (as specified in the attachment to this statement), of the proposed building work.

The design carried out by us has been prepared in accordance with:

Compliance Documents issued by the Ministry of Business, Innovation & Employment VM1 or
(Verification method / acceptable solution)

Alternative solution as per the attached schedule AS/NZS 3604

The proposed building work covered by this producer statement is described on the drawings titled Boss Range Balustrade and numbered S01 to S06 and Calculation pages Revision 2

together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions: Barrier supporting structures sufficient to take barrier design loads & design is based on strength only & for situations that fall strictly within the limitations set out in clause F4 of the building code. Components exposed to environments that do not adversely affect the durability of steel bolts along with washers & nuts. Barrier design based on occupancy A, B, E, and C3 of Table 3.3 AS/NZS 1170.1 and NZS 8500:2006, Safety Barriers and Fences around Swimming Pools, Spas and Hot Tubs.

(ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

CM1 CM2 CM3 CM4 CM5 (Engineering Categories) Or as per agreement with owner/developer (Architectural)

I, Tony O'Brien (AC Author NO: 1966) am: CPEng 251875 # Reg Arch #
(Name of Design Professional)

I am a Member of: Engineering New Zealand NZIA and hold the following qualifications: BSc Dip. Eng MIEI CMEngNZ CPEng IntPE(NZ)

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$200,000*.

The Design Firm is a member of ACENZ:

SIGNED BY Tony O'Brien (signature)
(Name of Design Professional)

ON BEHALF OF OBD Consultants Ltd Job Ref: 1522 - 9 Date 22/06/2022
(Design Firm)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of \$200,000*.

This form is to accompany Form 2 of the Building (Forms) Regulations 2004 for the application of a Building Consent.

THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, ENGINEERING NEW ZEALAND AND NZIA

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Producer Statement
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FenceLab
by Edgesmith

22 June 2022

To the Building Official,

Auckland Council
Private Bag 92300
Victoria Street West
Auckland 1142

The Boss Range Balustrade System Design Throughout New Zealand (C2, C3 & C4 Zones)

OBD Reference: 1522.9

Compliance with Building Code Clause B2 – Durability

The purpose of this letter is to demonstrate how compliance with Clause B2 (Durability) of the Building Code for the above project. We can confirm that for specifically designed structural elements that are included within our design documentation:

Material	Means of compliance	Details
Steel structure & fixing components	Alternative Solution	Protection for mild steel has been specified in accordance with SNZ TS 3404 – Durability requirements for steel structures and components and AS/NZS 2312 – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings. This guide works on a time to first maintenance. Refer to the attached maintenance plan.

Yours faithfully,



Tony O'Brien
BSc Dip Eng MIEI CMEngNZ CPEng IntPE(NZ)
Director
For and on behalf of **OBD Consultants Ltd**

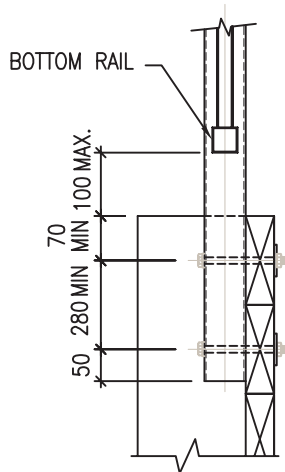
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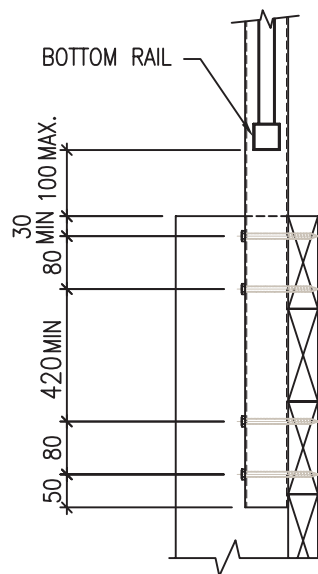
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SIDE FIX TO TIMBER RETAINING WALL - COMMERCIAL



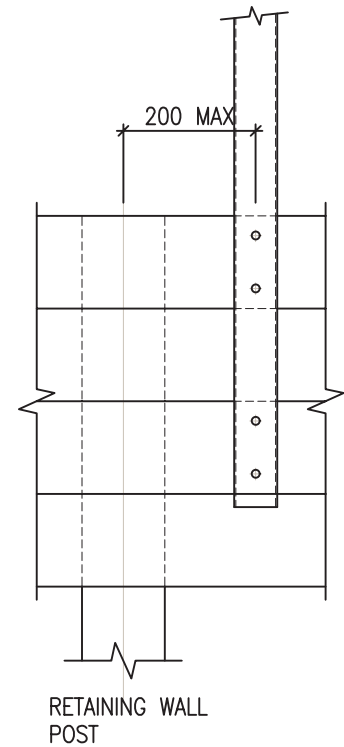
Option 1 - Coach Bolts:

2xM12 with 50x50x4mm sq washer on timber side. [drawing S06]



Option 2 - Coach Screws:

4xM12, min 50mm penetration into timber. [drawing S05]

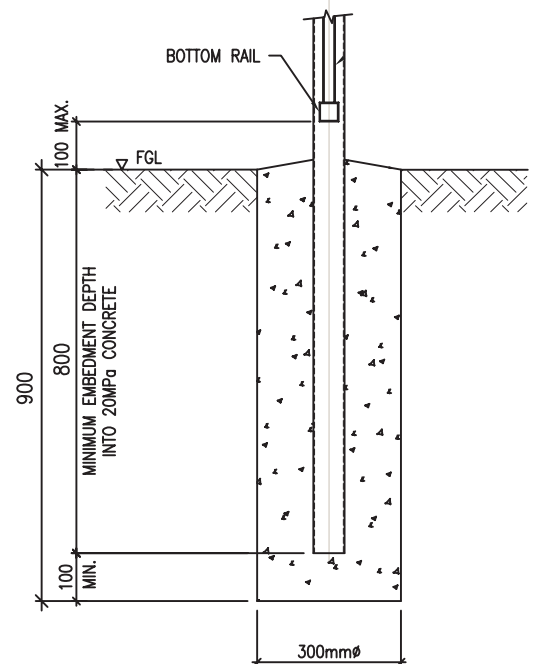


CONCRETED IN GROUND - COMMERCIAL

[drawing S07]

Note:

Post footing to be embedded in good ground with min 100kPa allowable bearing as defined by NZS 3604:2001

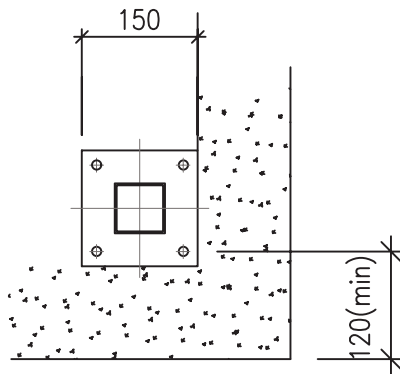


POST DETAILS FOR RESIDENTIAL BALUSTRADE

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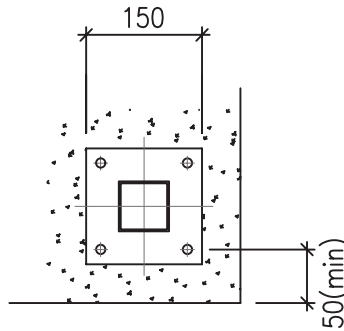
Zone	Loading	Panels	Posts	Fasteners
B, E, C3 School, Park, Multi-Dwelling Residential, Commercial	0.75kN/m	The Boss	65SHS x 2.5mm Steel, Post centers 2.4m	< 500m from sea - 304SS, > 500m from sea - 304SS or HDG

TOP FIX TO CONCRETE



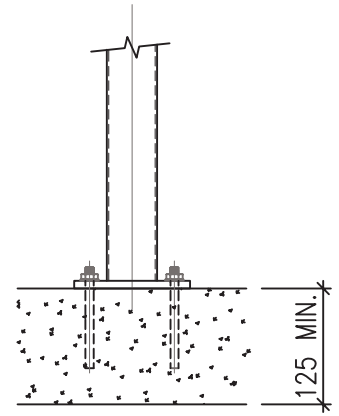
Option 1 - Screw Bolts:

4xM12 Ramset Weracs Ankascrew or equivalent, 90mm min embedment into 20MPa concrete. [drawing S01]



Option 2 - Chemset Rod:

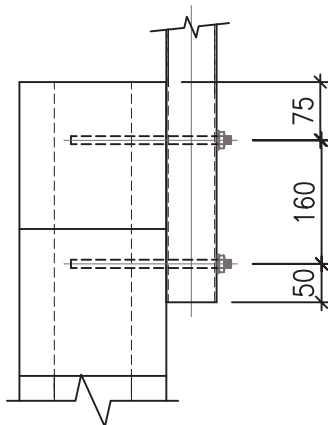
4xM10 threaded rod with epon C8 or equivalent, 90mm min into 20MPa concrete. [drawing S01]



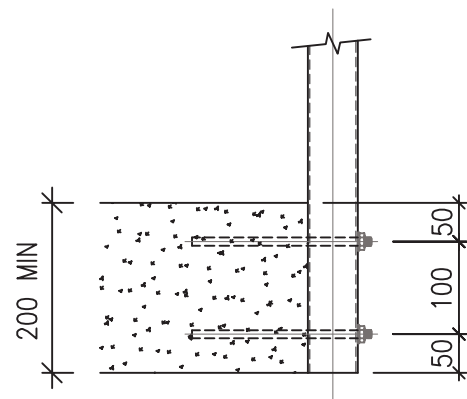
SIDE FIX TO BLOCK WALL

Chemset Rod:

2xM12 threaded rod with epon C8 or equivalent, 100mm min into masonry. [drawing S04]



SIDE FIX TO CONCRETE



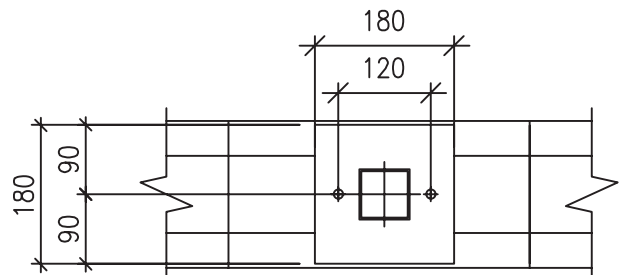
Chemset Rod:

2xM12 threaded rod with epon C8 or equivalent, 110mm min into 20MPa concrete. [drawing S02]

TOP FIX TO BLOCK WALL

Chemset Rod:

2xM12 threaded rod with epon C8 or equivalent, 100mm min into masonry. [drawing S04]

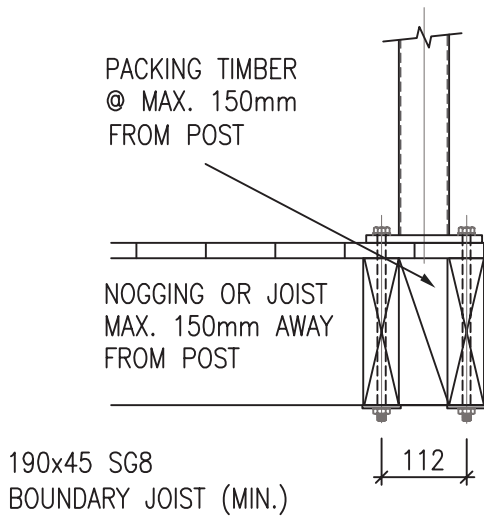


POST DETAILS FOR COMMERCIAL AND RESIDENTIAL BALUSTRADE

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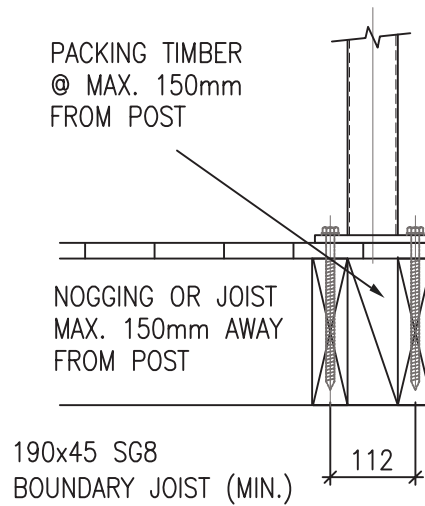
Zone	Loading	Panels	Posts	Fasteners
B, E, C3, A School, Park, Single or Multi-Dwelling Residential, Commercial	0.75kN/m	The Boss	65SHS x 2.5mm Steel (with 10mm flange) Post centers 2.4m	< 500m from sea - 304SS, > 500m from sea - 304SS or HDG

TOP FIX TO TIMBER DECK



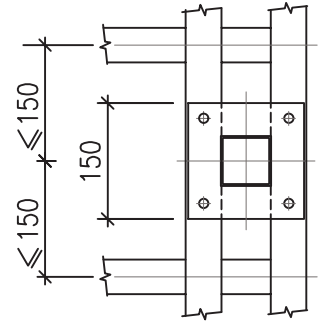
Option 1 - Coach Bolts:

4xM10 with 50x50x4mm sq washer on timber side. [drawing S03]



Option 2 - Coach Screws:

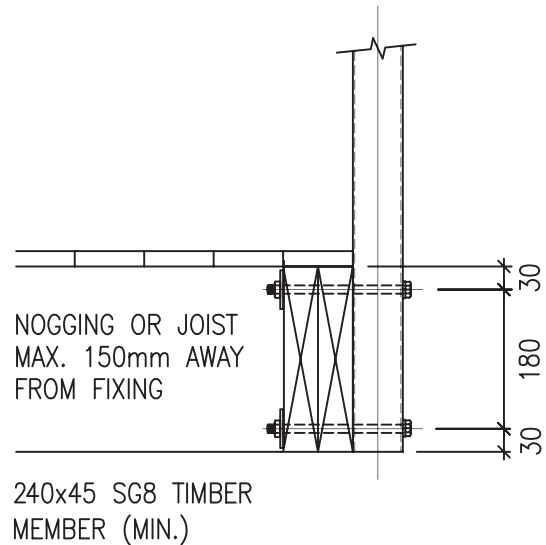
4xM12, min 150mm penetration into timber. [drawing S03]



SIDE FIX TO TIMBER DECK

Coach Bolts:

2xM12 with 50x50x4mm sq washer on timber side. [drawing S02]



POST DETAILS FOR RESIDENTIAL BALUSTRADE

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Zone Class	Loading	Panels	Posts	Fasteners
B, E, C3, A School, Park, Multi-Dwelling Residential, Commercial	0.75kN/m	The Boss	65SHS x 2.5mm Steel, 150x10mm Flange Post centers 2.4m	< 500m from sea - 304SS, > 500m from sea - 304SS or HDG



FenceLab
by Edgesmith

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E: hello@fencelab.co.nz

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