

FenceLab

by Edgesmith



THE CHIEF

PS1

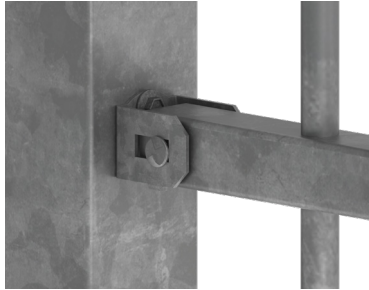
Producer Statement
Hot Dip Galvanised Commercial Balustrade

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

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THE CHIEF BALUSTRADE SYSTEM



Close-up View



The Chief Balustrade Panel is made from hot dip galvanised steel. It is fully rigid and extremely strong, making it the ideal balustrade for commercial and industrial applications. It is fully compatible with New Zealand building code balustrade regulations and pool fence regulations.

DETAILS

Steel 40x40 shs rails are fully welded to 16mm round pickets with a 94mm gap. The panels are hot dip galvanised to ANZS 4680:2002 giving them good protection against the New Zealand coastal climate. Panels are supplied with U shaped rail brackets and stainless steel anti-tamper bolts as standard. It uses standard 65x65 shs hot dip galvanised steel posts making it a very cost effective system for commercial balustrade and pool fencing.

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 5-8 for more details.

Setting	Application	Occupancy Type	Design Load	Post Centers	Posts	Fixing Options	Details
Commercial, Parks, Schools and Single or Multi Dwelling Residential	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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For Commercial Balustrades

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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 rainfall 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 MAINTENANCE 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
1/2 Yearly	Wash down all exposed metalwork including panels, posts and fixings
10 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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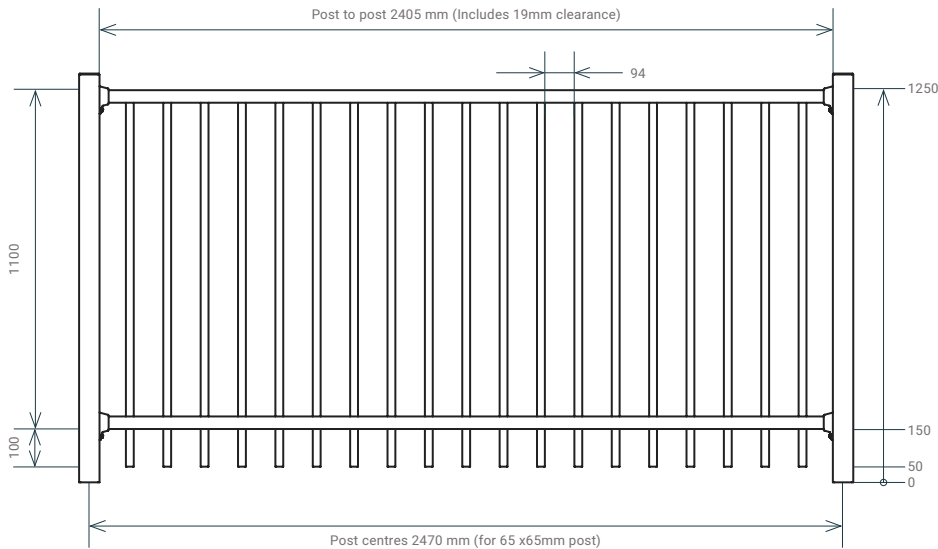
For Commercial Balustrades

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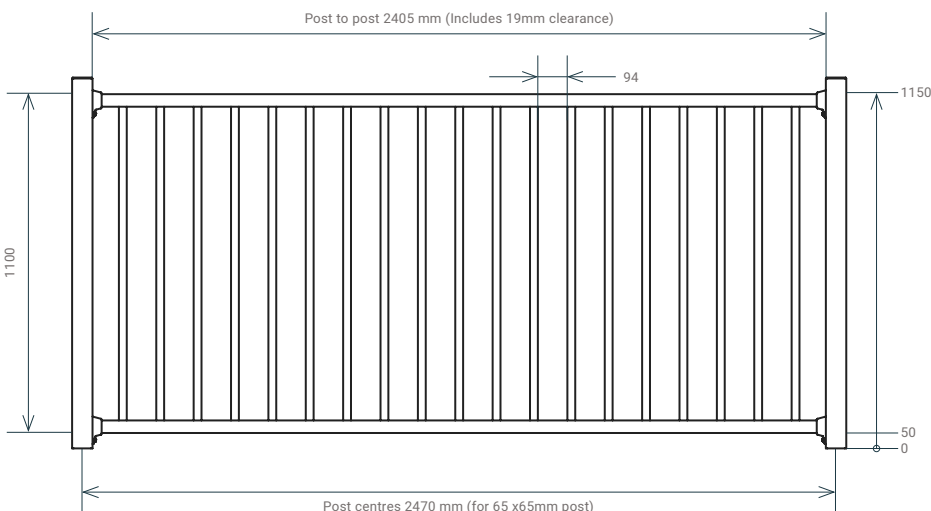
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THE CHIEF - 1.2mH



THE CHIEF - 1.1mH



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Material:

Steel

Pickets 16x1.2mm CHS

Rails 40x40x1.6mm SHS

Finish:

Hot Dip Galvanised

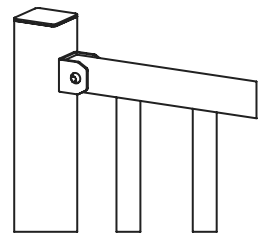
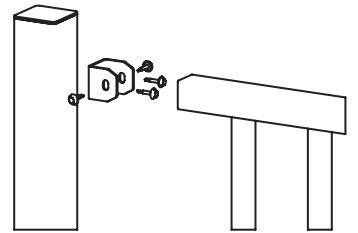
Powder Coated (optional)

Bracket Fixings:

HDG Steel U-Brackets

M5 Anti-tamper Bolts

12g Tek Screws



THE CHIEF

For Commercial
Balustrades

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: The Chief Balustrade System 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

The proposed building work covered by this B1 producer statement is described on the drawings titled The Chief 1.2mH Balustrade & Connections and numbered SK-01, SK-02, G01, S01-S05 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: The balustrade was designed based on strength only & for situations that fall strictly within the limitations set out in clause F4 of the building code and based on minimum barrier loads shown in Table 3.3 AS/NZS 1170.1 for Occupancy Type A, B, E & C3 only. The balustrade supporting structure/ members are to accommodate the additional loads induced by the barrier. Components exposed to environments that do not adversely affect the durability of steel bolts along with washers and nuts.
(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: 20002 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

22 June 2022

To the Building Official,

Auckland Council
Private Bag 92300
Victoria Street West
Auckland 1142

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

OBD Reference: **20002**

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**

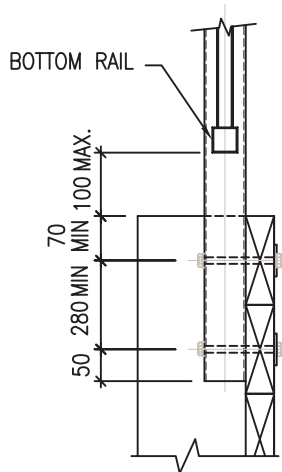
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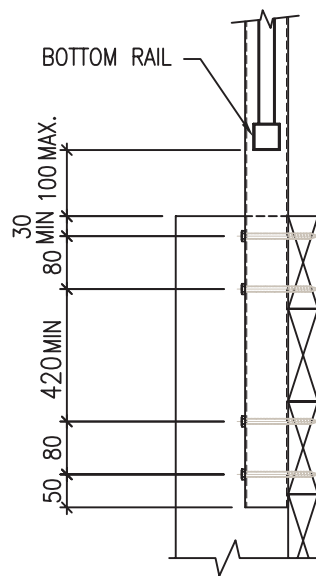
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SIDE FIX TO TIMBER RETAINING WALL - COMMERCIAL



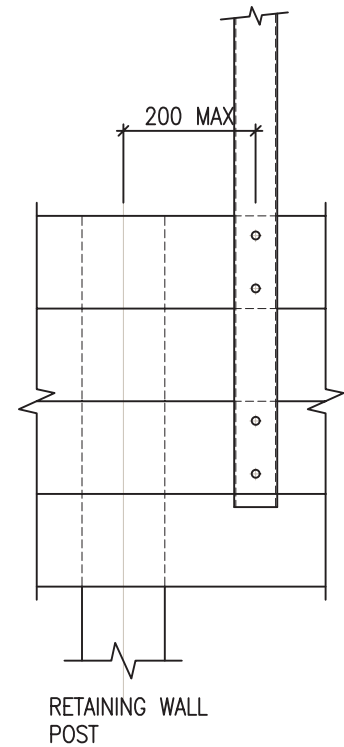
Option 1 - Coach Bolts:

2xM12 with 50x50x4mm sq washer
on timber side. [drawing S04]



Option 2 - Coach Screws:

4xM12, min 50mm penetration
into timber. [drawing S03]

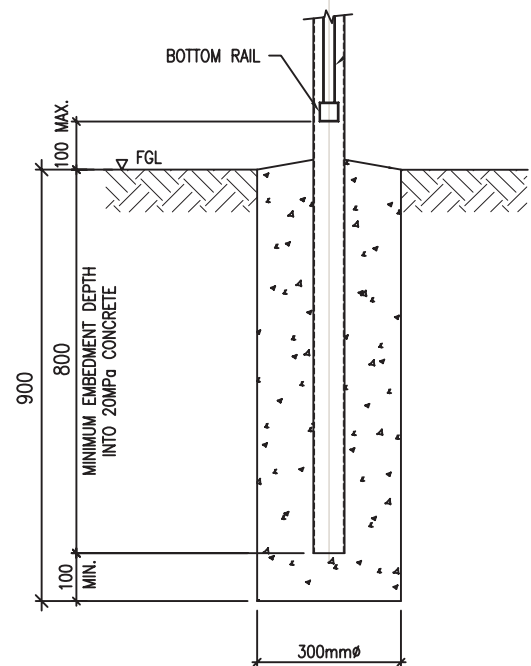


CONCRETED IN GROUND - COMMERCIAL

[drawing S05]

Note:

Post footing to be embedded in good ground
with min 100kPa allowable bearing as
defined by NZS 3604:2011

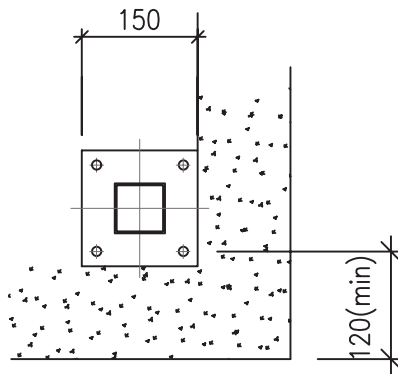


POST DETAILS FOR COMMERCIAL BALUSTRADE

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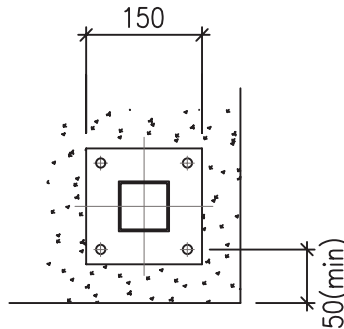
Zone	Loading	Panels	Posts	Fasteners
B, E, C3 School, Park, Multi-Dwelling Residential, Commercial	0.75kN/m	The Chief	65shs x 2.5mm Steel. Post centers 2.47m	<500m from sea - 304SS, >500m from sea - 304SS or HDG

TOP FIX TO CONCRETE



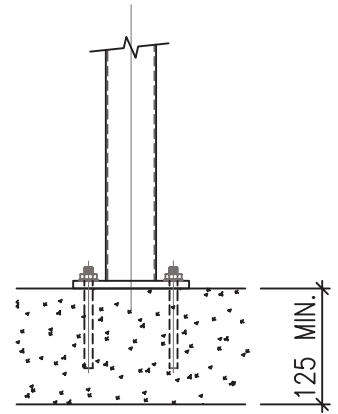
Option 1 - Screw Bolts:

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



Option 2 - Chemset Rod:

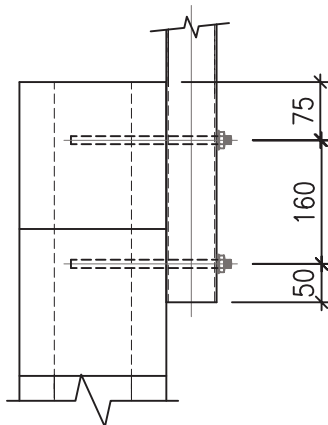
4xM10 threaded rod with epcon C8 or equivalent, 90mm min into 20MPa concrete. [drawing S01]



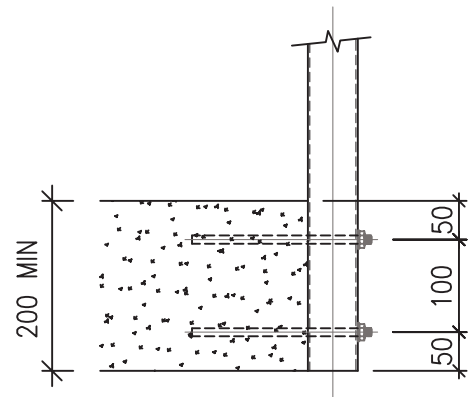
SIDE FIX TO BLOCK WALL

Chemset Rod:

2xM12 threaded rod with epcon C8 or equivalent, 100mm min into masonry. [drawing S02]



SIDE FIX TO CONCRETE



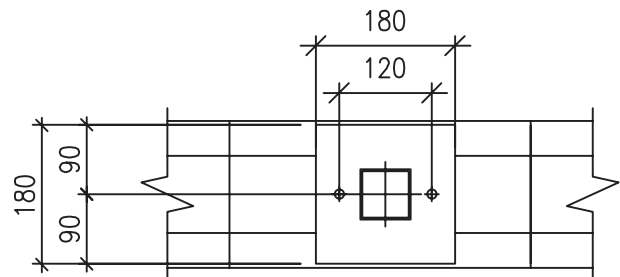
Chemset Rod:

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

TOP FIX TO BLOCK WALL

Chemset Rod:

2xM12 threaded rod with epcon C8 or equivalent, 100mm min into masonry. [drawing S02]



POST DETAILS FOR COMMERCIAL BALUSTRADE

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Zone	Loading	Panels	Posts	Fasteners
B, E, C3 Parks, Schools, Multi-Dwelling Residential, Commercial	0.75kN/m	The Chief	65shs x 2.5mm Steel 10mm thick flange Post centers 2.47m	<500m from sea - 304SS, >500m from sea - 304SS or HDG



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Monday - Friday:

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