

## BRIDGERAIL™ AS5100.2 CL12.5 and NZTA Compliant Balustrade

Level - Standard 2.0 Mtr Spacing with Offset Cycle Rail, Kerb Rail and Handrail



### Key features

- > Modular flexibility
- > No-weld assembly
- > Flat pack delivery
- > Reduced corrosion
- > Colour options
- > BIM & CAD Support

### Applications suited to

- > Cycle paths and bikeways
- > Shared pedestrian paths
- > Protection over culverts
- > Footbridges
- > Refer to applicable Aust and NZ Standards and Building Codes.

### Specification Summary

Supply and install the proprietary Bridgerail™ BR50 barrier system to substrate according to Moddex specifications, or by a Moddex accredited installer.

### Design Life

Standard design life of barrier is 100 years in C2 corrosivity zones.

### Technical Data

#### Material

<b>Stanchions, rails &amp; balustrades</b>	Steel/grade 250 & C350
<b>Kerb Rail</b>	Aluminium Extrusion (with EPDM separation pads)
<b>Clamp fittings</b>	Ductile iron
<b>Clamp locking screws</b>	Stainless steel (304)

#### Protective coating

<b>Stanchions, rails and balustrades</b>	G390 Hot-dip Galvanized (min 390g/m <sup>2</sup> )
<b>Clamp fittings</b>	Hot-dip Galvanized with patented protective coating on threads
<b>Optional</b>	Powder coating and paint specs

\*The standard process for Powder Coated and Painted handrail products is as follows: black steel is used for fabrication. The steel is sand blasted and a zinc primer coating is applied. The powder coat / paint coat is then applied over the zinc primer creating a dual shield coating with a decorative finish.

### Dimensions

Variable depending on building/application/ code

#### Stanchions

<b>Dimensions</b>	1400mm high
<b>Nominal Thickness</b>	16.0mm plate

#### Rails (Balustrade Panel)

<b>Diameter</b>	48.3mm OD
<b>Nominal Thickness</b>	3.25mm

#### Rails (Top Rail)

<b>Diameter</b>	60.3mm OD
<b>Nominal Thickness</b>	4.5mm

#### Base Plate

<b>Nominal Thickness</b>	16.0mm
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#### Balustrade

<b>Heavy Duty Baluster</b>	16mm
<b>Baluster Centres</b>	100mm (84mm gap)

#### Clamp fittings

<b>Thickness</b>	5.0mm (approx)
<b>Locking screws</b>	M12 x 1.75 x 11mm - DEXX® Drive

#### Expansion Joint

<b>Diameter</b>	48 mm
<b>Length</b>	300.0mm
<b>Material</b>	Steel Hollow Bar

### Weight

Variable depending on building/application/ code

<b>2.0m spacing (Top Mount)</b>	122kg
<b>2.0m spacing (Face Mount)</b>	132kg

### Fixings

Stanchion attachment to

<b>Concrete</b>	M16 mechanical concrete anchors or cast in studs/ ferrules as specified.
<b>Structural steel</b>	M16 galvanized high tensile bolt set

\*Other Fixing options are available on request

### Compliance

Moddex balustrades and handrails are designed and manufactured in accordance with Austroads Guide to Road Design, relevant statutory WHS Codes of Practice/ Guidelines, including AS5100.2:2017 CL12.5\*, and the NZTA Bridge Manual B6.4\*\*.

Galvanized to AS 4792 and AS/NZS 4680:2006 (where applicable).

The manufacture of Bridgerail proprietary systems is in accordance with Moddex specifications and manufacturing processes, and this may differ to some jurisdictional specifications for steelwork fabrication, bridges and related structures.

\* Forces from wind load, water and debris or earthquakes are to be determined by the bridge designer/engineer. The bridge designer/engineer must request and confirm (not assume) adequacy for these projects specific requirements, before specifying or approving this barrier system for use.

\*\*Excluding where the road controlling authority requires the barrier to restrain crowds or people under panic conditions

### Testing

Stringent vibration endurance tests have been performed and independent testing has been carried out to confirm the suitability of the Moddex system in maritime conditions.

### Warranty

5 years from date of purchase subject to correct installation, use and maintenance in accordance with manufacturer's specifications and recommendations, unless otherwise negotiated at the time of purchase.

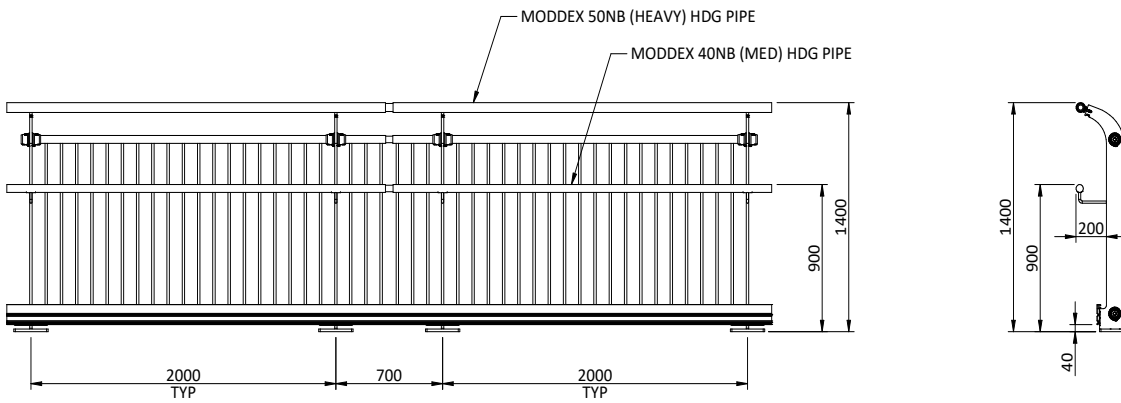
— Refer maintenance manual

### Inspection & Maintenance

Visual inspection for any damage or loose fixings must be done periodically and prior to use. No certified maintenance required. Basic wear and tear preventative maintenance is recommended, as per manufacturer's specifications and recommendations.

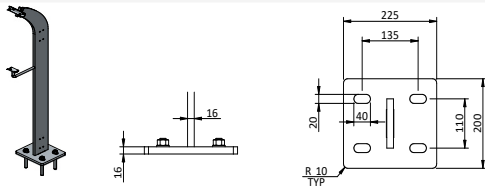
— Refer maintenance manual

## Technical Information



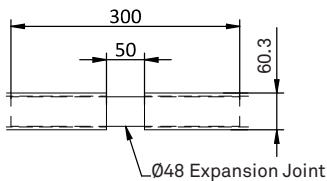
## Mount Dimensions

### T4 - Top Mount (4 Fixings)



\*Face mount and custom mounting options available.

## Expansion Detail



## Standard References

### Austrroads Guide To Road Design; Part 6A

5.5.3 The installation of a fence at the side of a path used by cyclists is desirable where:

- there is a steep batter or large vertical drop located in close proximity to the path
- the path is adjacent to an arterial road and it is necessary to restrict cyclist access to the road
- a bridge or culvert exists on a path
- a hazard exists adjacent to a particular bicycle facility
- cyclists are likely to be 'blazing a separate trail' at an intersection between paths or around a path terminal.

### Australian Standard Bridge Design; Part 2

This Standard was prepared by the Standards Australia Committee BD-090, Bridge Design, to supersede AS 5100.2—2004. This Standard is also designated as Austrroads publication AP-G51.2-17.

The objectives of the AS(AS/NZS) 5100 series are to provide nationally acceptable requirements for—

- (a) the design of road, rail, pedestrian and cyclist path bridges;
- (b) the specific application of concrete, steel, timber and composite construction, which embody principles that may be applied to other materials in association with relevant standards;
- (c) the assessment of the load capacity of existing bridges; and
- (d) the strengthening and rehabilitation of existing bridges.

The objective of this Part (AS 5100.2) is to specify minimum design loads and load effects for road, rail, pedestrian and cyclist path bridges, and other associated structures.

The requirements of the AS(AS/NZS) 5100 series are based on the principles of structural mechanics and knowledge of material properties, for both the conceptual and detailed design, to achieve acceptable probabilities that the bridge or associated structure being designed will not become unfit for use during its design life.

### NZTA Bridge Manual Clause B6.4\*

Pedestrian, cyclist and equestrian barriers shall be designed for the most extreme of the following loads:

- a. horizontal and vertical service loads of 1.75kN/m applied to the top rail
- b. a horizontal service load of 1.5kN/m<sup>2</sup> applied to the gross area of the barrier
- c. a point load of 0.5kN in any direction at any point.

\*Excluding where the road controlling authority requires the barrier to restrain crowds or people under panic conditions

**Important Note:** Failure to supply and/or install proprietary product in accordance with above Standards and codes, specification and instructions, voids complete system certification and/or warranty.

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For information or technical support please contact us

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moddex.com

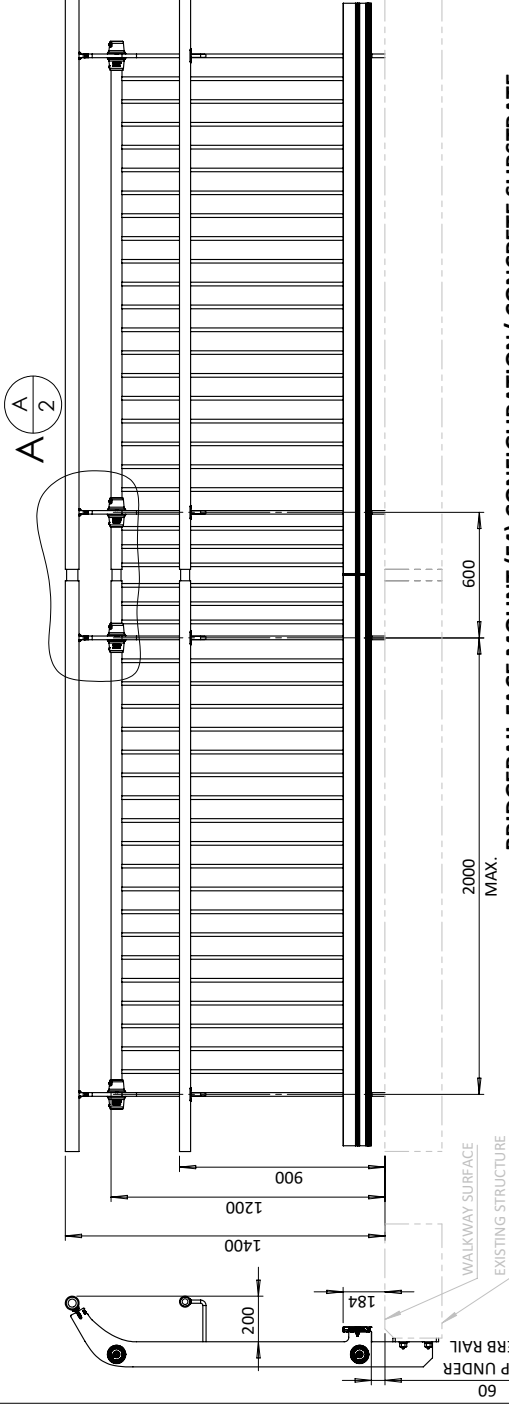
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**General NOTES:**

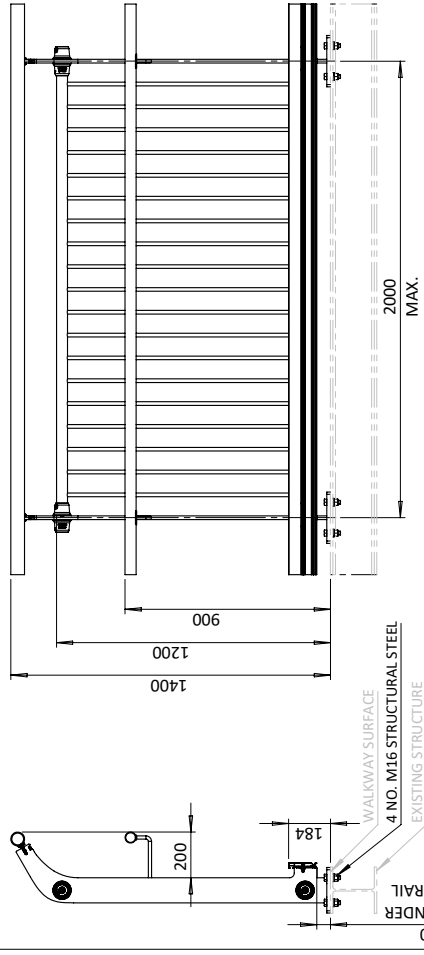
1. THESE SPECIFICATIONS SHALL TAKE PRECEDENCE UNLESS OTHERWISE ADVISED BY THE DESIGN ENGINEER.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH THE BUILDING ACT & REGULATIONS.
3. THE STRUCTURE DESIGNER IS RESPONSIBLE FOR ENSURING THE NECESSARY SUPPORTING STRUCTURE IS PROVIDED FOR THE BARRIER SYSTEM.
4. FORCES FROM WIND LOAD, WATER AND DEBRIS SHALL BE DETERMINED BY THE BRIDGE DESIGNER/ENGINEER. OTHERWISE, THEY WILL BE ASSUMED AS NEGLIGIBLE LOADS COMPARED TO OTHER LOADS FROM CLAUSES (a) TO (c).
5. THE SUPPORTING STRUCTURE SHALL BE DESIGNED FOR THE MINIMUM DESIGN LOADS SPECIFIED IN THE DESIGN TABLE & FIXING NOTE
6. THE SUPPORTING STRUCTURE SHALL BE DESIGNED TO ACCOMMODATE THE SPECIFIED HANDRAIL FIXINGS.
7. ALL WELDS TO BE IN ACCORDANCE WITH MODDEX WP51 AND/OR AS1554.1SP.
8. ALL COMPONENTS OF THE MODDEX WALKWAY AND/ OR BARRIER SYSTEM INCLUDING, FIXINGS SHALL BE SUPPLIED BY MODDEX AU.

**DESIGN TABLE:**

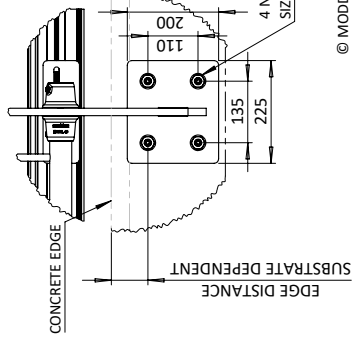
- |                 |   |
|-----------------|---|
| 1. DESIGN LIFE  | 100 YEARS IN C2 CORROSIVE ZONE  |
| 2. LOADING      | AS5100.2, CLAUSE 12.5, NORMAL LOAD  |
| 3. LIVE LOADING | 0.75kN/m LONGITUDINAL & 0.75 TRANSVERSE (SIMULTANEOUSLY) ON TOP RAIL                              |
| 3. LIVE LOADING | 1.0kPa TRANSVERSE ON INFILL AREA  |
| 3. LIVE LOADING | A SINGLE LOAD OF 0.6kN ACTING OVER AREA OF 0.1mx0.1m TRANSVERSE AWAY FROM THE PATH ON INFILL AREA |
- SYSTEM COULD BE MODIFIED TO ACCOMMODATE AS5100.2, SECTIONS 12.5, CLAUSE (A) TO (D) FOR CROWD LOADS.*



**BRIDGERAIL FACE MOUNT (F4) CONFIGURATION/ CONCRETE SUBSTRATE**  
TOP MOUNT (T4) OPTION IS AVAILABLE

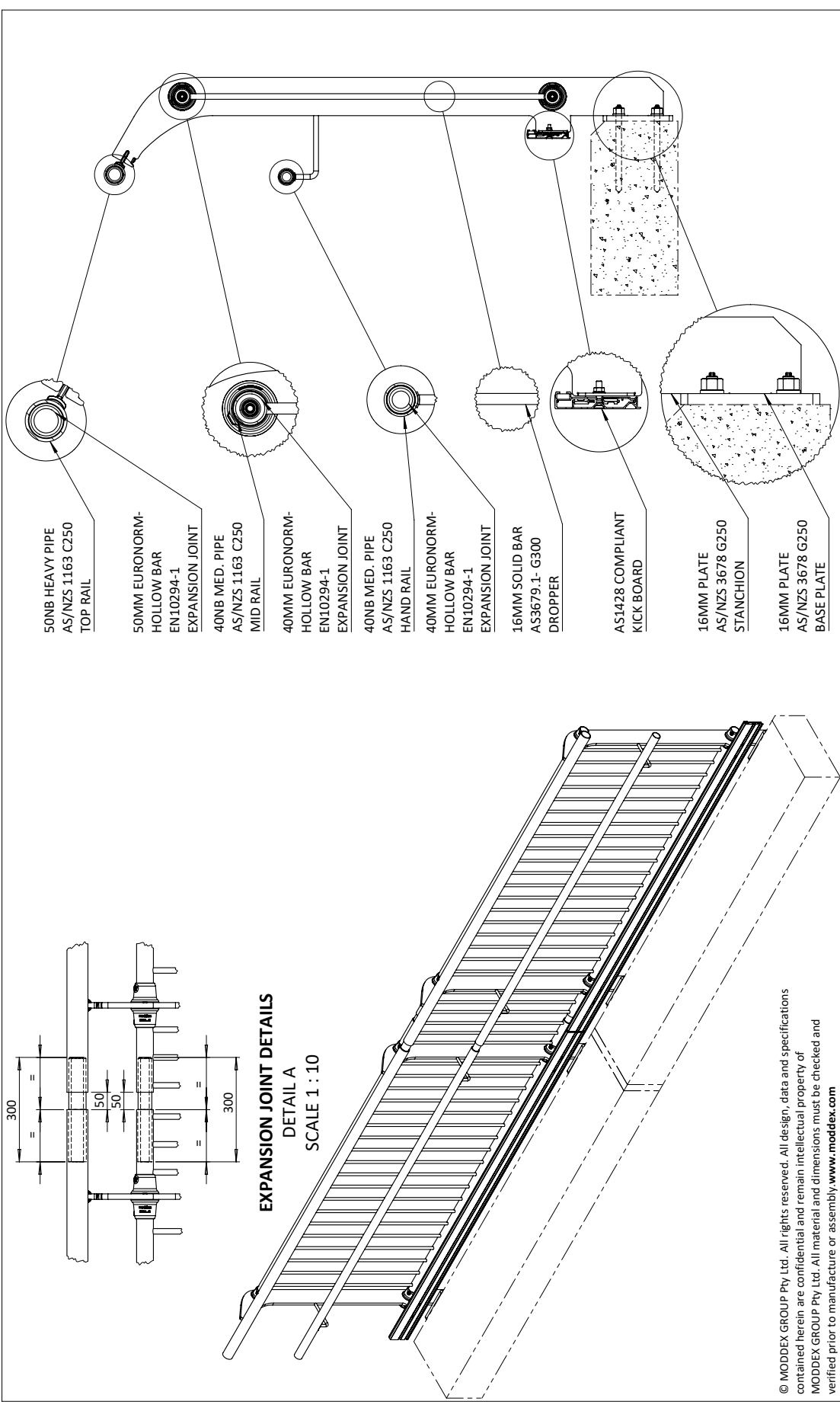


**BRIDGERAIL TOP MOUNT (T4) CONFIGURATION/ STEEL SUBSTRATE**  
FACE MOUNT (F4) OPTION IS AVAILABLE



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4			DESIGNED	AM	21/09/2023	MODDEX	DRAWING No.	BR50
3			DRAWN	AM	21/09/2023	BR50 BridgeRail Barrier Specification		
2			CHECKED	JDR	29/09/2023			
1	AM	04/10/2023	APPROVED	JDR	04/10/2023			
REV.	CHANGE DESCRIPTION	BY	DATE	SCALE	MATERIAL	FINISH:	ASSEMBLY	UNIT:
				1:20	A3	(POWDER COATED AVAILABLE)	LAST SAVED BY: AM-5/10/2023	METRIC



REV.	CHANGE DESCRIPTION	BY	DATE
4			
3			
2			
1	MODDEX DATA REVIEW/ UPDATE	AM	04/10/2023

<p><b>moddex</b>  <b>MODDEX GROUP Pty Ltd</b>                  44 Kaiman Drive                  Boronia VIC 3155</p>		<p>DESIGNED AM 21/09/2023</p>	<p>DRAWN AM 21/09/2023</p>	<p>CHECKED JDR 29/09/2023</p>	<p>APPROVED JDR 04/10/2023</p>	<p>SCALE 1:20 A3</p>	<p>MATERIAL: AS SPECIFIED</p>	<p>FINISH: HDG (POWDER COATED AVAILABLE)</p>	<p>UNIT: METRIC</p>
<p><b>MODDEX</b>                  BR50 BridgeRail Barrier Specification</p>		<p>DRAWING No.  <b>BR50</b></p>			<p><b>ASSEMBLY</b>                  LAST SAVED BY: AM-5/10/2023</p>				

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