

BRIDGERAIL™ AS5100.2 CL12.5 and NZTA Compliant

Balustrade

Level - Standard 2.0 Mtr Spacing with Offset Cycle 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™ BR45 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

Stanchions, rails & balustrades	Steel/grade 250 & C350
Clamp fittings	Ductile iron
Clamp locking screws	Stainless steel (304)

Protective coating

Stanchions, rails and balustrades	G390 Hot-dip Galvanized (min 390g/m²)
Clamp fittings	Hot-dip Galvanized with patented protective coating on threads
Optional	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

Dimensions	1400mm high
Nominal Thickness	16.0mm plate

Rails (Balustrade Panel)

Diameter	48.3mm OD
Nominal Thickness	3.25mm

Rails (Top Rail)

Diameter	60.3mm OD
Nominal Thickness	4.5mm

Base Plate

Nominal Thickness	16.0mm
-------------------	--------

Balustrade

Heavy Duty Baluster	16mm
Baluster Centres	100mm (84mm gap)

Clamp fittings

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

Expansion Joint

Diameter	48 mm
Length	300.0mm
Material	Steel Hollow Bar

Weight

Variable depending on building/application/ code

2.0m spacing (Top Mount)	122kg
2.0m spacing (Face Mount)	132kg

Fixings

Stanchion attachment to

Concrete	M16 mechanical concrete anchors or cast in studs/ ferrules as specified.
Structural steel	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.

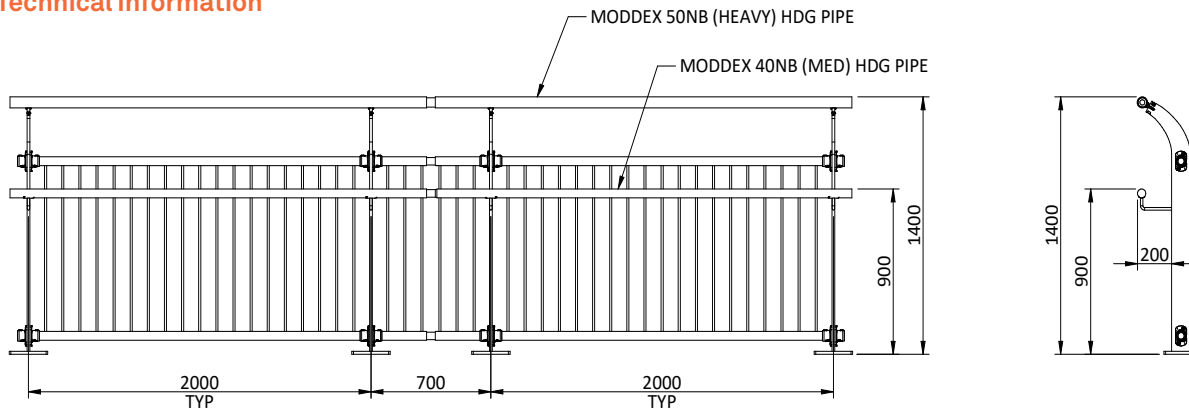
— Refer maintenance manual

Inspection & Maintenance

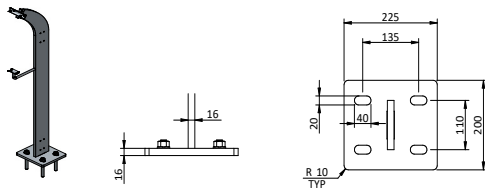
Visual inspection for any damage or loose fixings must be done periodically and prior to use. No certified maintenance required. Basic wear and tear preventative maintenance is recommended, as per manufacturer's specifications and recommendations.

— Refer maintenance manual

Technical Information

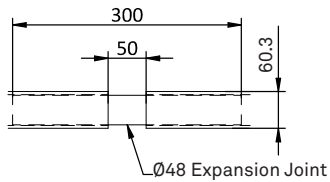


Mount Dimensions



*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/m² 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.

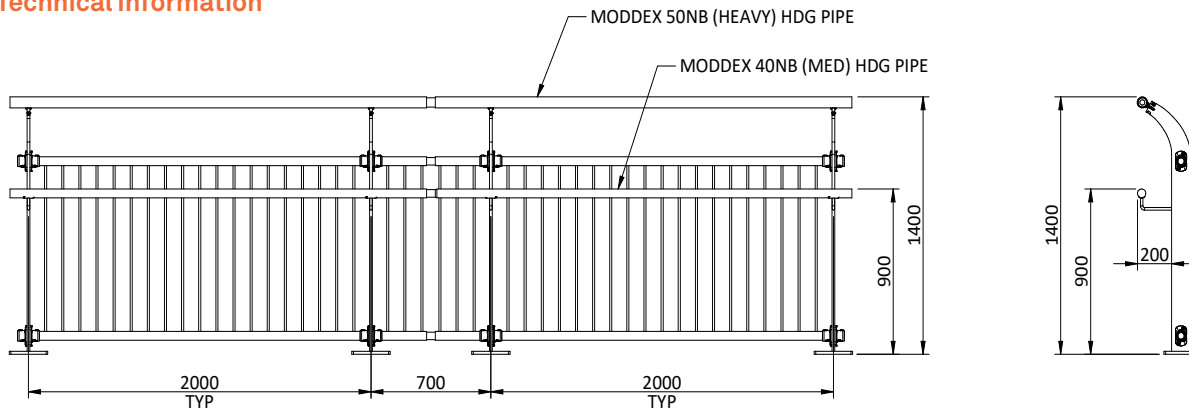
Designed and manufactured by Moddex. ©Moddex Group. All Rights Reserved.

For information or technical support please contact us

T 1800 663 339 (AU)
T 0800 663 339 (NZ)

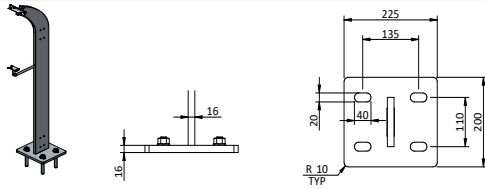
moddex.com

Technical Information



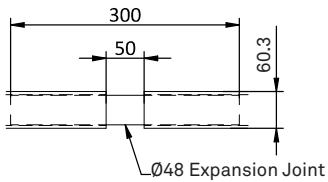
Mount Dimensions

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/m² 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.

Designed and manufactured by Moddex. ©Moddex Group. All Rights Reserved.

For information or technical support please contact us

T 1800 663 339 (AU)
T 0800 663 339 (NZ)

moddex.com

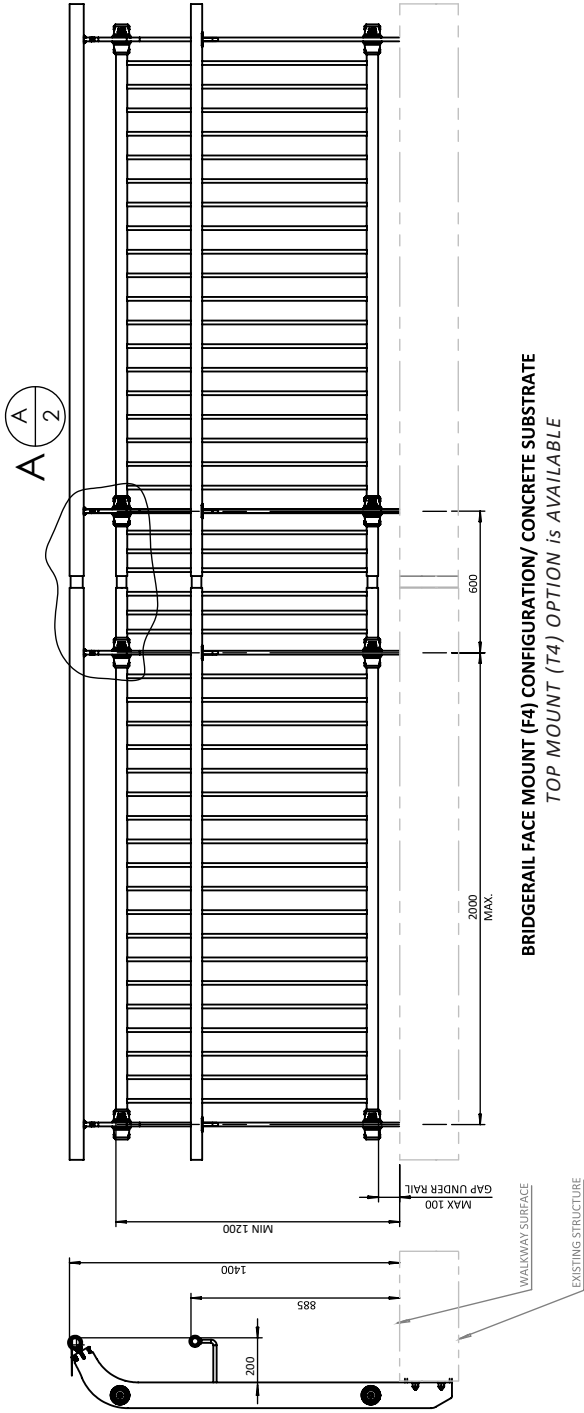
General NOTES:

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 (g).
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.

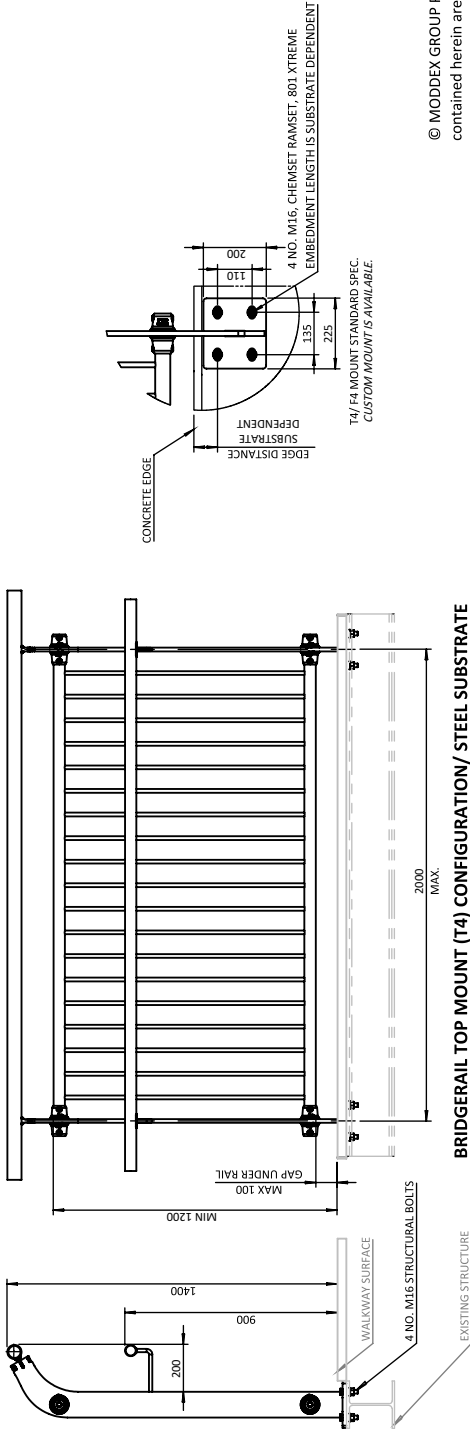
DESIGN TABLE:

1. DESIGN LIFE100 YEARS IN C2 CORROSIVE ZONE
2. LOADINGAS5100.2, CLAUSE 12.5, NORMAL LOAD
3. LIVE LOADING0.75kN/m LONGITUDINAL & TRANSVERSE (SIMULTANEOUSLY) ON TOP RAIL
- 1.0kPa TRANSVERSE ON INFILL AREA GLE LOAD OF 0.6kN ACTING OVER AREA OF 0.1mX0.1m TRANSVERSE AWAY FROM THE PATH ON INFILL AREA

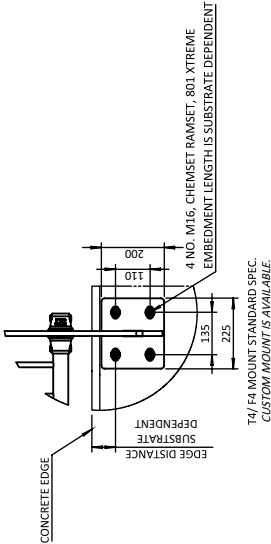
SYSTEM COULD BE MODIFIED TO ACCOMMODATE AS5100.2, CLAUSE 12.5 (A) TO (D) FOR CROWD LOADS.



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

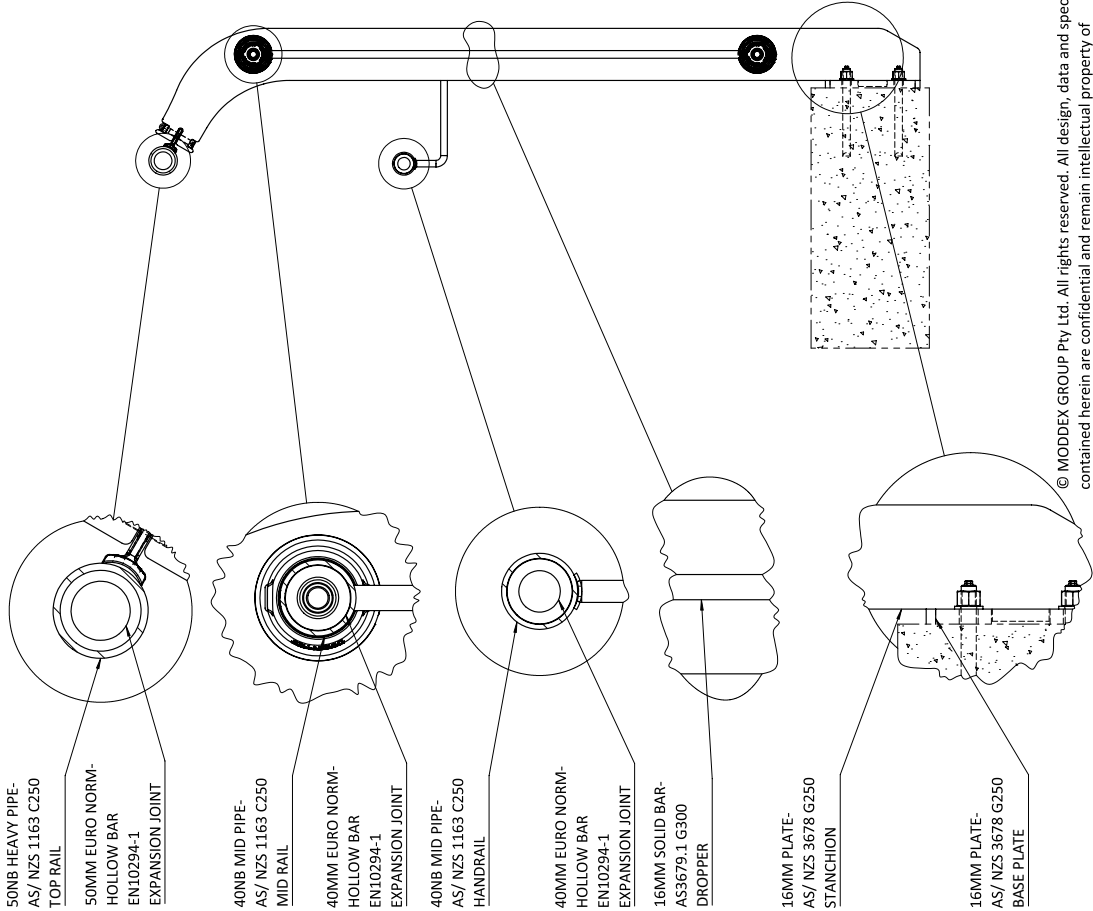
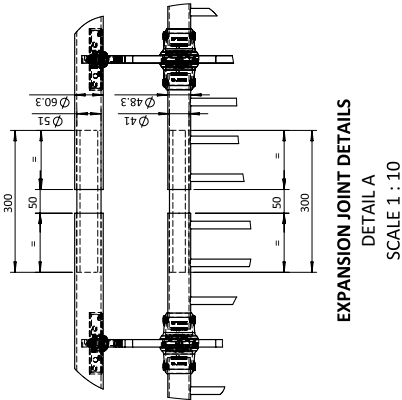


BRIDGERAIL TOP MOUNT (T4) CONFIGURATION/ STEEL SUBSTRATE
FACE MOUNT (F4) OPTION is AVAILABLE



© MODDEX GROUP Pty Ltd. All rights reserved. All design, data and specifications contained herein are confidential and remain intellectual property of MODDEX GROUP Pty Ltd. All material and dimensions must be checked and verified prior to manufacture or assembly. www.moddex.com

DESIGNED				MODDEX				DRAWING No.			
DRAWN				BR45 BridgeRail Barrier Specification				BR45			
CHECKED				JDR				ASSEMBLY			
APPROVED				DAV				UNIT: METRIC			
p ' ^ i b				NOT TO SCALE				LAST SAVED BY: AM - 15/03/2022			
15/02/2020				AS3				FINISH: HDG- ZINC (POWDER COATED AVAILABLE)			
AM				AS SPECIFIED				MATERIAL: AS SPECIFIED			
AM				21/09/2021				MODDEX GROUP Pty Ltd			
15/03/2022				44 Kalman Drive				BORONIA VIC 3155			
AM				BY				DATE			
MODDEX DATA REVIEW/UPDATE				21/09/2021				CHANGE DESCRIPTION			
2				AM				DESIGN UPDATE			
1				AM				MODDEX DATA REVIEW/UPDATE			
REV.				BY				DATE			



© MODDEX GROUP Pty Ltd. All rights reserved. All design, data and specifications contained herein are confidential and remain intellectual property of MODDEX GROUP Pty Ltd. All material and dimensions must be checked and verified prior to manufacture or assembly www.moddex.com

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--