

MODDEX INSTALLATION GUIDE



moddex[®]
EVERYTHING FITS

SAFETY RECOMMENDATIONS

IMPORTANT

- > Read all installation instructions carefully before commencing any work.
- > Conduct an initial work/risk assessment, and take all reasonable precautions to eliminate or reduce potential hazards/risks during the installation.
- > Ensure all necessary WHS documentation is completed and up to date, including Job Safety Analysis (JSA), Safe Work Method Statement (SWMS) and valid industry licenses.
- > Consider all safety requirements when working at heights or near fall edges and use appropriate personal protective equipment (PPE) such as safety footwear, safety glasses & gloves.
- > Ensure support structure to which system is to be attached, will sustain necessary design loads (prior approval may be required from a qualified engineer).
- > Do not modify or remove any existing structural components without prior authorisation by manufacturer or qualified engineer.
- > Any re-routing services i.e. electrical, gas or water must be carried out by qualified or authorized personnel.
- > Work safely at all times.

Disclaimer

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All Moddex products are supplied subject to the Moddex Terms and conditions of sale. Moddex recommends all products and/or systems are installed by an inducted installer or other competent person. Moddex is not liable for the selection & installation of the right product and/or system. Moddex accepts no liability for any products and systems incorrectly installed or certified. While Moddex can provide assistance, recommendations or guidance in

relation to product selection and installation, Moddex is not liable for any inaccuracy or misinterpretation whatsoever. Moddex cannot warrant structural integrity or suitability to which any product or system is attached to and must be assessed by a qualified design engineer. Failure of the customer to follow or adhere to applicable Australian and New Zealand Standards, Building Codes, WHS Acts & Regulations, Codes of Practice & Guidelines, site installation requirements may result in serious injury or death.

TOOLS & EQUIPMENT RECOMMENDATIONS

- > Tape measure, Spirit level, Allen keys, Rubber mallet
- > Sockets, Spanners or Shifters
- > Impact drill/driver, DEXX drive bits (included) & 5/16" nutsetter
- > Hammer drill & Masonry drill bits
- > 5" Angle grinder with cutting & grinding discs
- > Suitable packers & cold Galv. Touch up paint
- > Vacuum/Blower to clean holes prior to applying fixing

Specialist tools you will find useful

- > Stud finder
- > Onsite pipe/tube bender
- > Magnetic Base Drill



INSTALLATION REQUIREMENTS

NOTE: Use DEXX or similar drive bits with an impact drill/driver for quicker installation

- > Ensure all cut pipe ends are checked and any burrs removed using a file or deburrer.
- > All cut and/or unprotected pipe ends must have cold galv. rust inhibitor paint applied.
- > Ensure all set screws are tightened within the Moddex recommended range for set screw torque settings. (MIN torque 25Nm – MAX torque 40Nm)
- > When installing double Assistrail (AR120 etc.) be sure to fix the top rail first as the lower/bottom rail will restrict access to fixings.
- > Ensure setscrews are facing the same way for better presentation.
- > Remove any paint marks/writing on pipe using suitable solvent or brake cleaner. Touch up any scratches or markings using color coded touch up paint for powder coated jobs.

INSTALLATION CHECKLIST

- > It is a Moddex requirement that the installation checklist is filled out at time of install so any warranty claims can be validated.

INSTALLATION CHECKLIST

It is a Moddex requirement that the installation checklist is filled out by the installer upon completion of the install.

Company: _____ Company Contact: _____

Installed By: _____ Supervisor: _____

Project Name: _____ Moddex Job # (as shown on Installation Drawings): _____

Check	Date Complete	Initial/Name
Pipes cleaned with brake cleaner (or similar) to remove paint markings		
Check for no sharp edges		
Check all cut sections are treated with Cold Gal spray to product spec – minimise overspray.		
Fixing to substrate double checked and firm, check all grub screws are tightened		
Check structure is straight, level & plumb		
Check all critical dimensions – Refer to relevant Australian Standards		
Check pipe insertion of rails is no less the minimum shown in image on page 8		
Ensure rivets are in place on all internal connecting fittings as per image detail on page 8		
Any extra thread cut off base mount fixings – 5mm above top of nut (if applicable)		
No gaps greater than 100mm for NZ/125mm for AU (balustrade), no pinch points less than 50mm		
Minimum 5 x photos clearly showing completed install		
Site clean and all rubbish removed		

Below are the areas of our service that we value the most. Could you please rate your satisfaction from 1 to 5, where **1 = Very Dissatisfied** and **5 = Very Satisfied**.

Initial response time to your enquiry	1	2	3	4	5
Delivery On Time / Timeliness of job	1	2	3	4	5
Feedback and communication during your job	1	2	3	4	5
Quality of work	1	2	3	4	5
Overall satisfaction with our service	1	2	3	4	5
Employee's conduct on site	1	2	3	4	5

Please rate the items below in terms of likelihood, where **1 = Very Unlikely** and **5 = Very Likely**.

Will you use our services again, if the need arises?	1	2	3	4	5
Would you recommend us to others in need of a similar service?	1	2	3	4	5

Are there any areas of our service that we can improve? Is there anything that we excel at? Are there any additional services that you would like us to offer? Please make any comments, complaints, compliments or suggestions in the box below.

- Can your comments be posted on our testimonial page on our website YES NO
- Can photos of this work be posted onto our website and social media YES NO

- Please ensure completed checklist & any supporting info & photos are filed or saved with other relevant job documentation.
- It is the installers responsibility to ensure all points in checklist are completed (where applicable).
- Refer to the 'Moddex Handrail and Balustrade Install Guide' for more information.

Client Contact Signature

Installer Signature

Client Contact Print Name

Date

Installer Print Name

Date

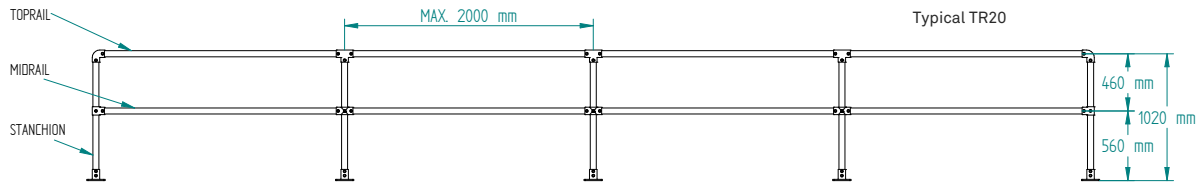
KEY MEASUREMENTS

NOTE: Preassembled stanchions will be supplied at correct height (application specific).

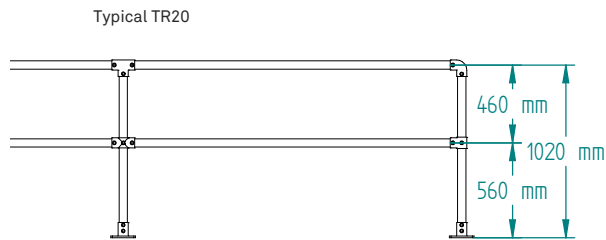
- > **Height of Top rail:** Between 900 - 1100mm from ground to top of handrail (refer to Australian Standards or NCC for job specific requirements)
 - > Maximum 1000mm for disability handrails on ramps/stairs (Assistrail applications). Moddex standard set to 925mm to centreline.
 - > Minimum 1000mm for balustrades (Conectabal applications).
- > **Top & Mid rail Spacing:** Maximum 450mm gap between top & midrail (refer to Australian Standards or NCC for job specific requirements)
- > **Stanchion Spacings:** 2000mm maximum
- > **Openings on Balustrade:** Maximum 100mm for NZ/125mm for AU openings anywhere (125mm sphere must not pass through), refer sketch overleaf.
- > **Hand Clearance:** Minimum 50mm clearance between fixed point and handrails (pinch point) as per AS & NCC requirements.
- > **Height above Stair Nosing:** Minimum 865mm for AU/900mm for NZ & maximum 1000mm from top of stair nosing to underside of handrail. Moddex standard set to 925mm to centreline.
- > **Edge Distance of Fixings:** Allow minimum 5x times diameter of fixing, from edge hole to edge of concrete (6x times diameter of fixing is recommended).

Refer to diagrams on page 7 and refer to the Moddex Guide to Handrail & Balustrade Compliance Booklet.

Stanchion & Rail Spacing



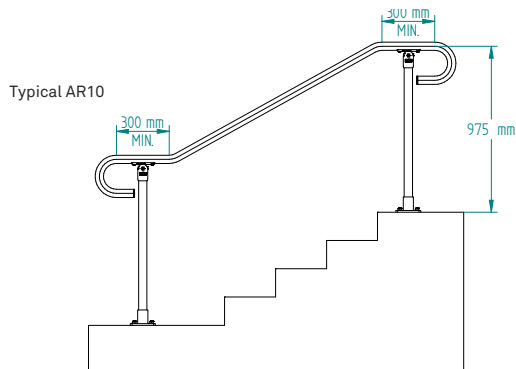
Rail Height (for Guardrails AS 1657)



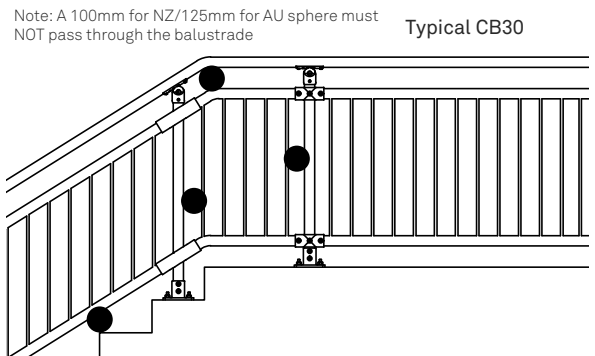
Rail Height (for Disability Handrails AS 1428)



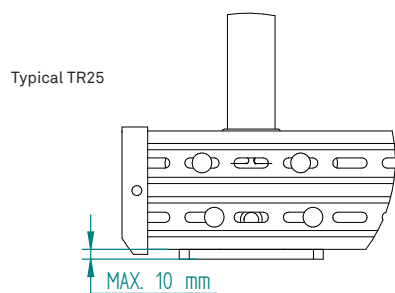
Height above Stair Nosing



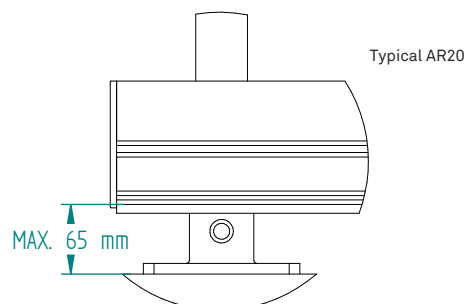
Openings on Balustrade



Height of Toeboard (AS 1657)

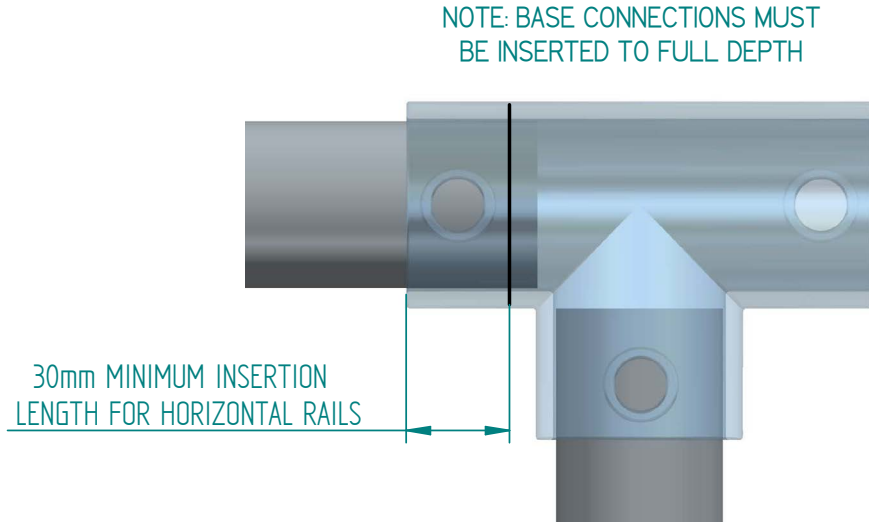


Height of Kerbrail (AS 1428)



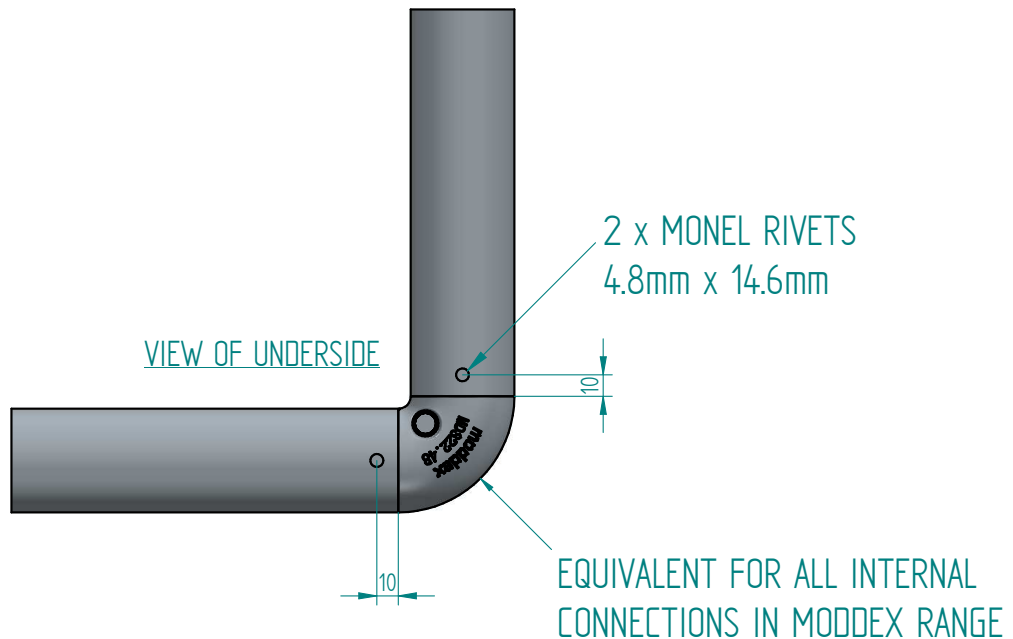
Minimum Rail Insertion

- > **Minimum Rail Insertion:** The minimum rail insertion length for all horizontal or angled rails is 30mm (Refer image below). Pipe must be inserted to full depth for all base mounting connections.



Rivets for Internally Connecting Fittings

- > **Rivets for Internally Connecting Fittings:** Drill and fix a 4.8mm x 14.6mm aluminium rivet on each side of the connection as shown in image below.
- > **NOTE:** Moddex internal joiner fittings are not designed for use in structural applications that are subject to engineering loads. Internal fittings are designed to create a smooth, continuous handrail joint that is not subject to engineering loads. A mandrel bend or fully welded corner for all structural handrail/barrier designs and assemblies is a Moddex requirement.



M12 SCREWBOLT INSTALL INSTRUCTIONS

Hole Preparation - Specific for use of EXCALIBUR HSB12-100-Gal in Moddex application

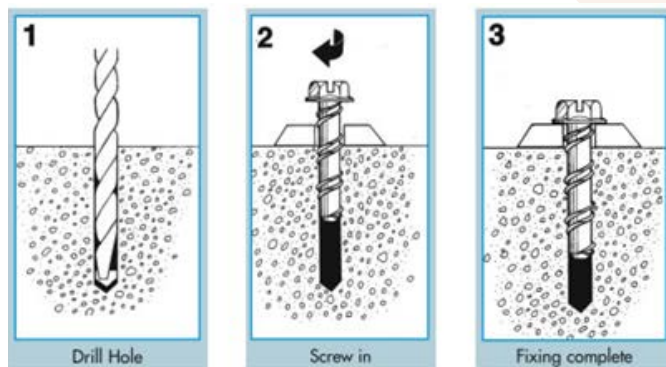
Use the right drill

Check that the drill bit diameter is correct for the EXCALIBUR Bolt size M12

Check the length of the Drill flute must exceed 120 mm then plus the length required to fit into the drill.

Flute length = the maximum hole depth capacity of drill

Recommended Drill Bit by Moddex is Sutton/Diager Booster Plus (Part No: 029477)



CLEAN THE DUST FROM THE HOLE

Important _DO NOT USE any drill bit with a hole depth capability less than 120mm

It is essential to drill deep and perpendicular - At 90° to the substrate.

Note: Moddex application - Hole depth recommended is required to be a minimum of 115mm in concrete.

This applies to perfectly clean holes after excess dust is removed.

For easier Moddex installation always drill the hole deeper than the minimum.

EXCALIBUR Screwbolts are designed to function correctly within DIN standards. Drill bits must not be below normal tolerance levels. This may result in stressing or over torquing a fastener product on insertion.

Screwbolt Installation when setting by hand or power tool

Use a good socket - Preferably a single hex socket rather than a multi point Socket.

Requirement for Excalibur M12 bolts 'across flats' 19mm socket.

We recommend the use of a quality full hexagon socket with a ratchet spanner.

Alternatively, where the substrate allows, a **torque controlled** impact wrench can be used.

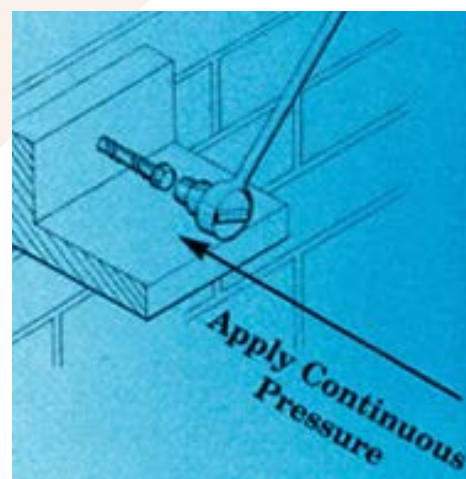
The Excalibur manufactures recommended installing Excalibur Bolts with a **Bosch variable speed GDS 18E** with a torque range of 70Nm – 250Nm. In a clean hole, without variances, it is expected torque required in this Moddex application would be 100Nm but should not exceed 250Nm. Damage to the bolt may occur if Maximum Torque is exceeded.

Apply pressure to start

Ensure that continual pressure is applied (see diagram), particularly when engaging the first thread.

Back off if tight

During installation, debris or dust created by the thread cutting action may cause some resistance to be experienced. This is easily overcome by unscrewing the Screwbolt for one turn or more, and then continuing to fix to full embedment.

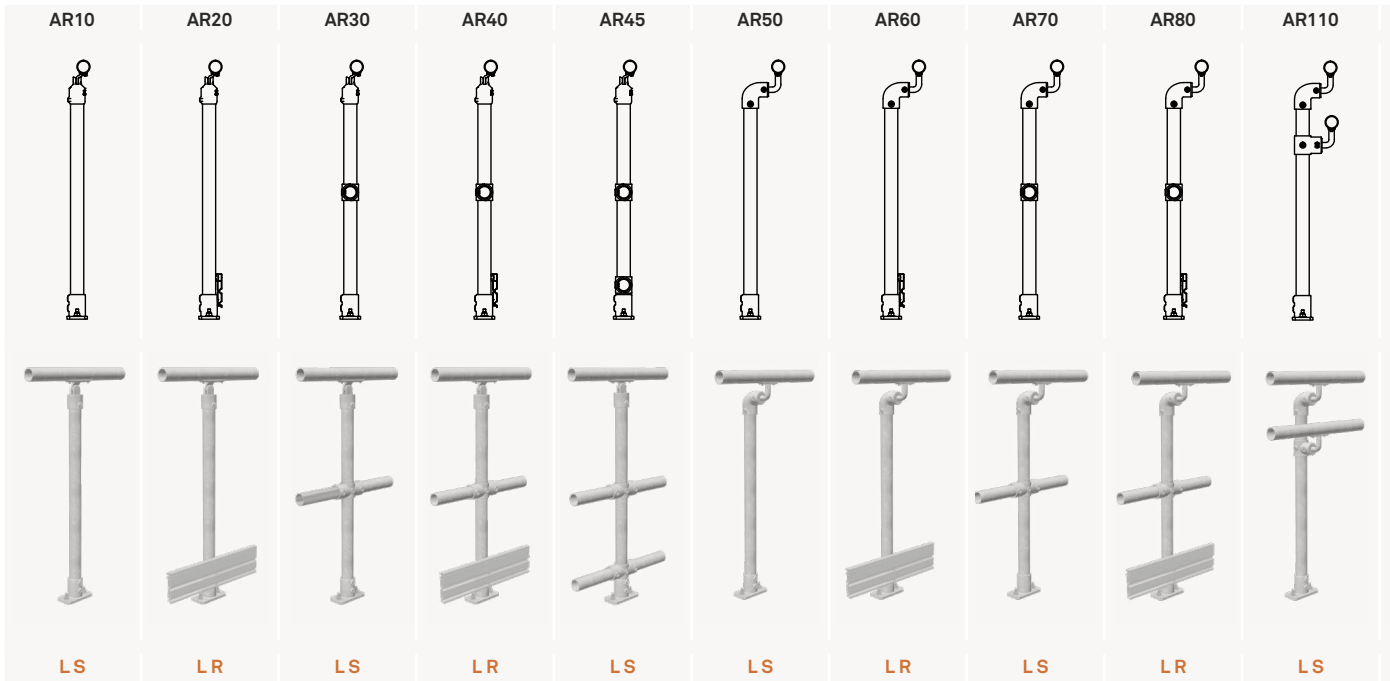


HANDRAIL & BALUSTRADE CONFIGURATION QUICK GUIDE

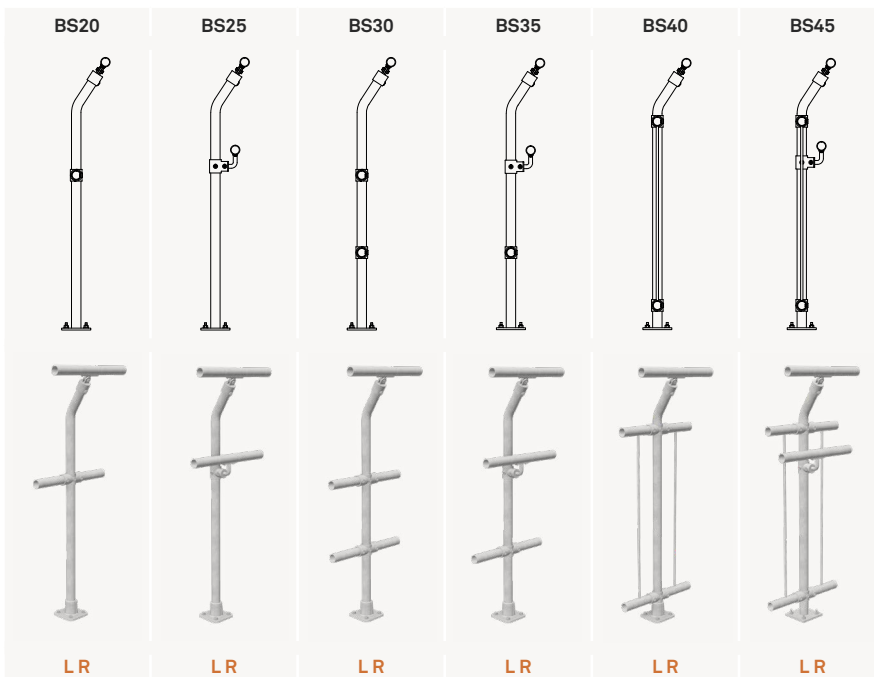
Key

LEVEL, RAKE, STAIR

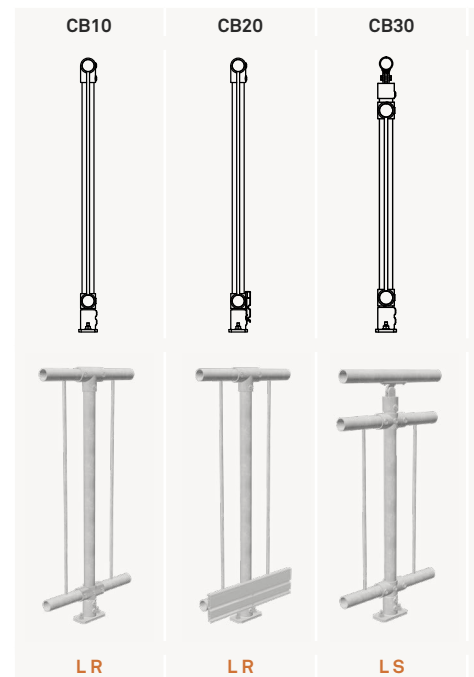
ASSISTRAIL



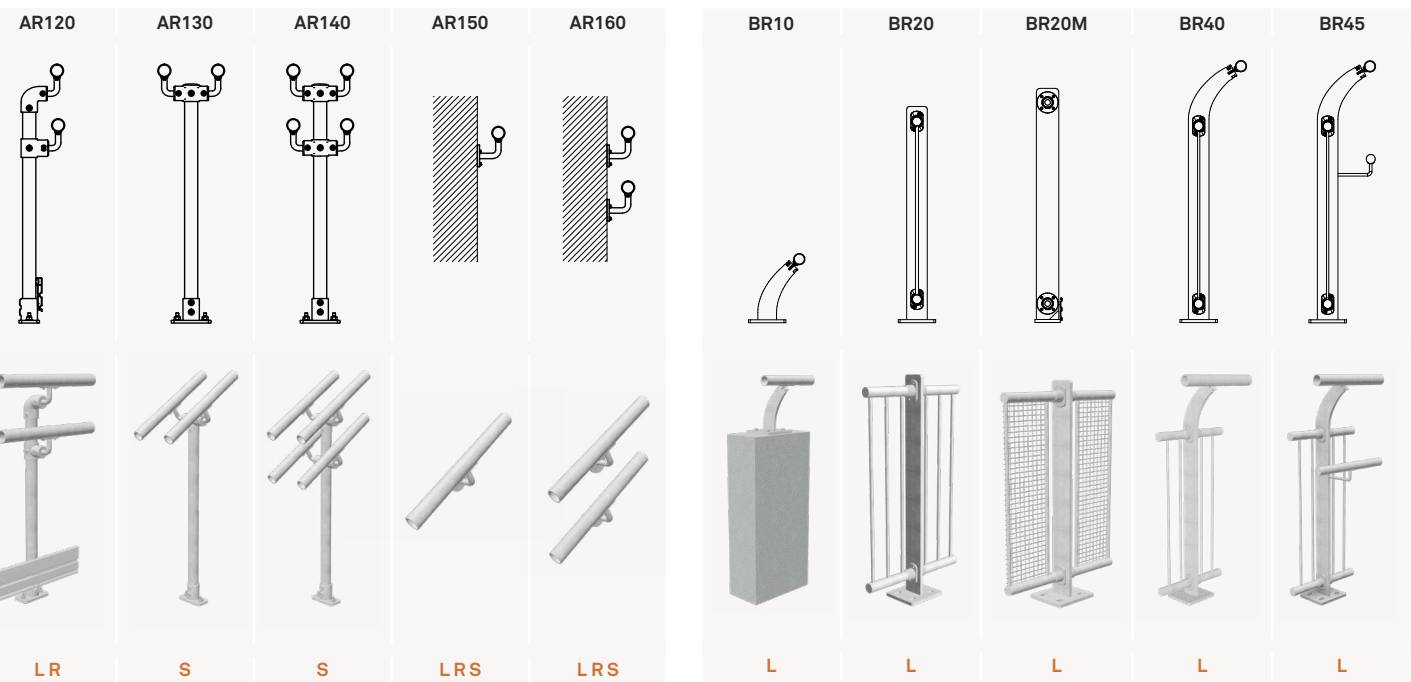
BIKESAFE



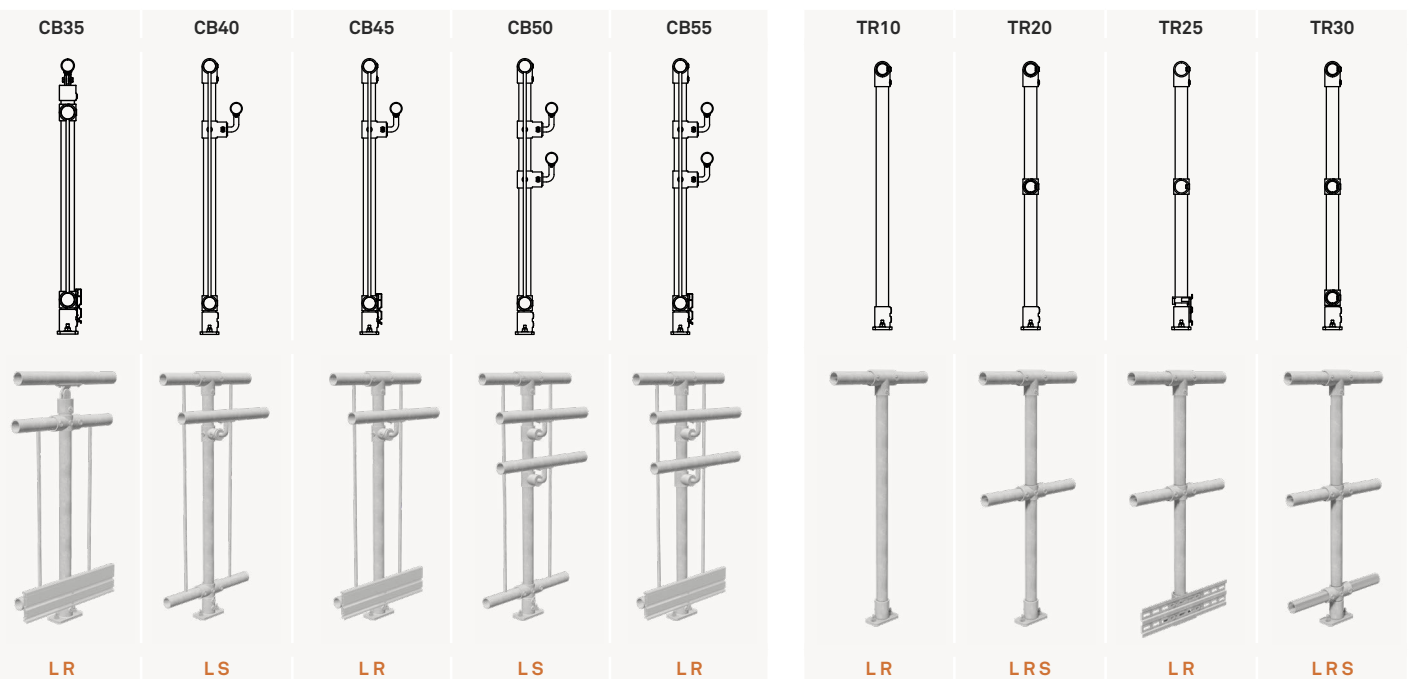
CONECTABAL



BRIDGERAIL



TUFFRAIL



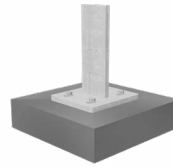
STANDARD MOUNT OPTIONS



T2 - Top Mount
(2 Fixings)



T4 - Top Mount
(4 Fixings)



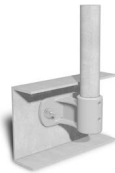
T4 - Top Mount
(4 Fixings)*



F2 - Face Mount
(2 Fixings)



F4 - Face Mount
(4 Fixings)*



C11 - Channel Mount
(2 Fixings)



C13 - Channel Mount
(2 Fixings)



CD - Cored Mount



GD - Inground Mount



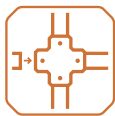
AM - Angle Mount (2 Fixings)



CM - Collapsible Mount

*Note: Only available for Bridgerail™ Product Range

THE MODDEX ADVANTAGE



Modular flexibility

Modular system designs adapt to on-site conditions with the flexibility to retrofit, replace broken sections or can disassemble when no longer required



No-weld assembly

No-weld assembly of components eliminates the need for hot works permits and site shutdowns to deliver a safer, quicker set-up and installation with little or no damage to galvanizing



Available ex-stock

All standard system configurations are available ex-stock from our extensive catalogue for immediate flat pack delivery across Australia and New Zealand



Reduced corrosion

Hot dip galvanized components assembled with stainless steel fixtures and fittings reduces corrosion from welding, cutting and grinding



Flat pack delivery

Flat pack delivery of all components, fixtures and fittings direct to site eliminates delivery of bulky items to site and the need for specialist transport and crange



BIM & CAD support

In-house CAD, BIM and technical design support for more complex projects, with AutoCAD and Revit file downloads available for layout and ordering

BARRIER SYSTEMS

assistrail

disability handrails



Engineered for ramps, stairs and walkways, with smooth connections for a safer finish. Standard and fire stair configurations available. AS 1428 compliant.

bikesafe

bikeway barriers



Engineered for bikeway and footpath safety, providing the ultimate protection for pedestrians and cyclists travelling at speed. Austrroads compliant.

bridgerail

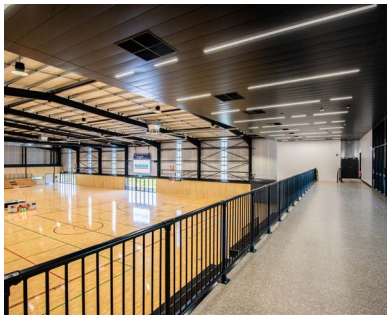
bridge barriers



Bridge Barrier systems for public access areas forming part of road, rail or other elevated bridge structures. AS5100.2 Clause 12.5 Compliant.

conectabal

commercial balustrades



Prevent injuries or falls from retaining walls, elevated areas, ramps and stairs. Standard and fire stair configurations available. NCC / BCA compliant.

kliptread

walkway systems



Walkway systems designed to incorporate into new builds, and retro-fit onto existing structures in the road, rail and mining sectors.

tuffrail

industrial guardrails



Robust guardrail protection for workers across mezzanines, service platforms, pedestrian walkways and fall edges. Safety Yellow options available. AS/NZS 1657 compliant.

ezibilt

trolley bays



Secure storage for trolleys at shopping complexes and airports. Load tested to AS 1170.

intac

tactile indicators



Tactile indicators for ramps, stairs and walkways for the blind or visually impaired. Ceramic tile or self-adhesive PVC options available. AS/NZS 1428 compliant.

tuffgard

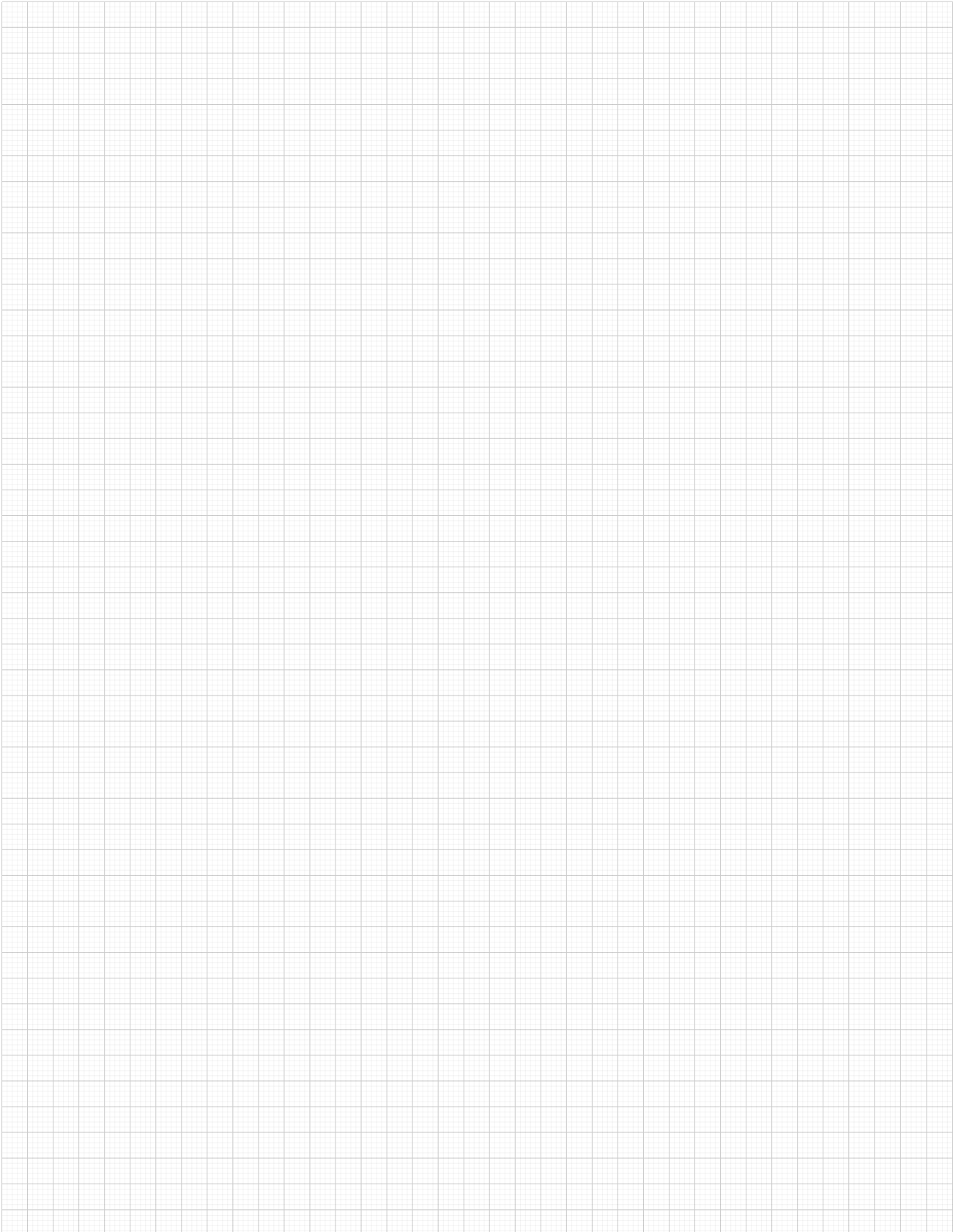
toeboard system



Toeboard systems for protection against falling objects from elevated platforms and mezzanines. Simply retrofitted to new or existing guardrails. AS 1657 & NZS 1657 compliant.

NOTES

Project Name	
Project No.	Contact
Date	Contact No.



Specified and sold across Australasia
1800 663 339 | info@moddex.com

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