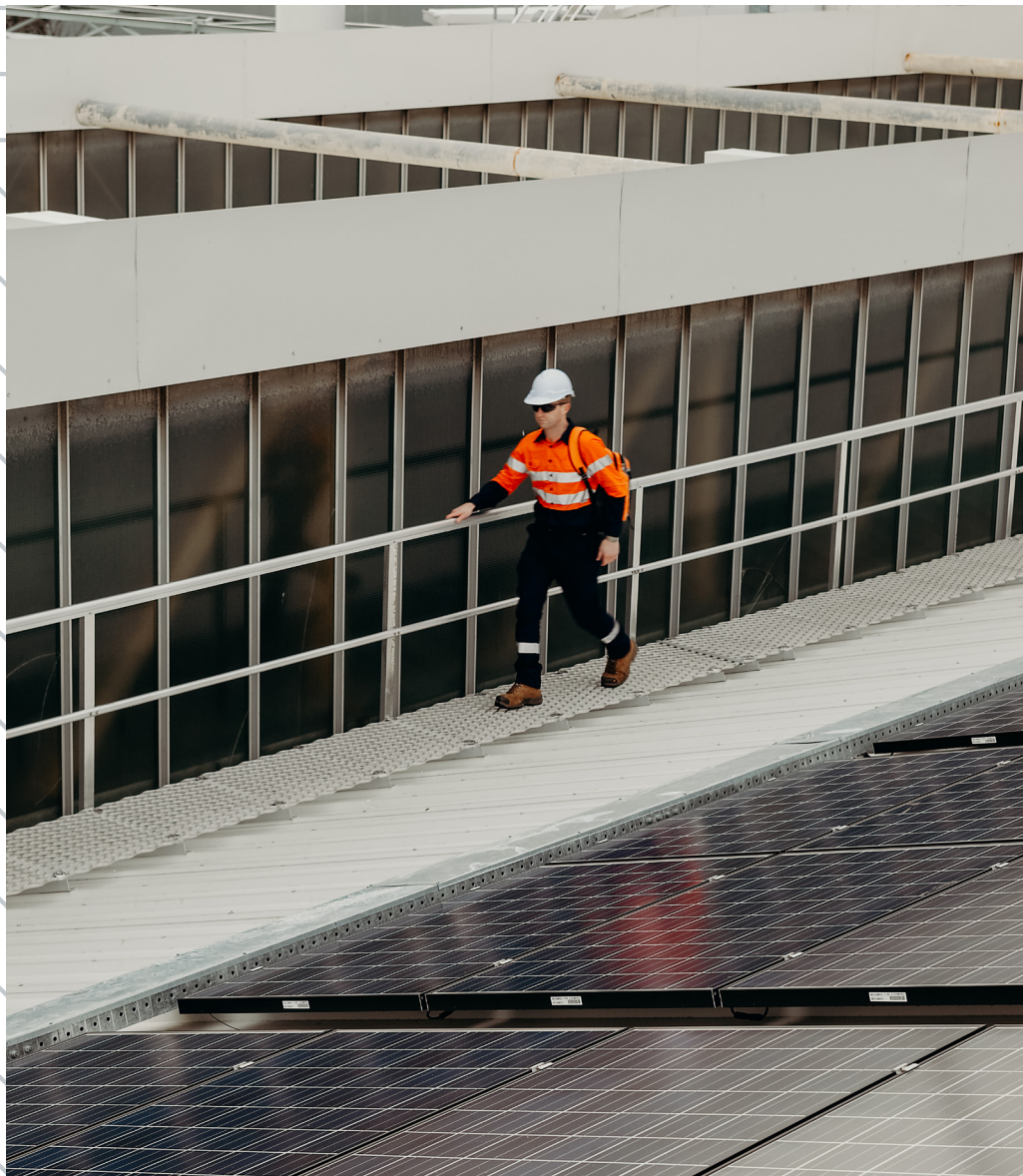


INSTALLATION MANUAL

GUARDRAIL



Kattsafe guardrail provides fall protection and high strength safe designated access to roof mounted plant and equipment.



Product brochure
Guardrail and walkway



Installation manual
Guardrail



Installation manual
Walkway

Find all related products and resources on our website
kattsafe.com.au

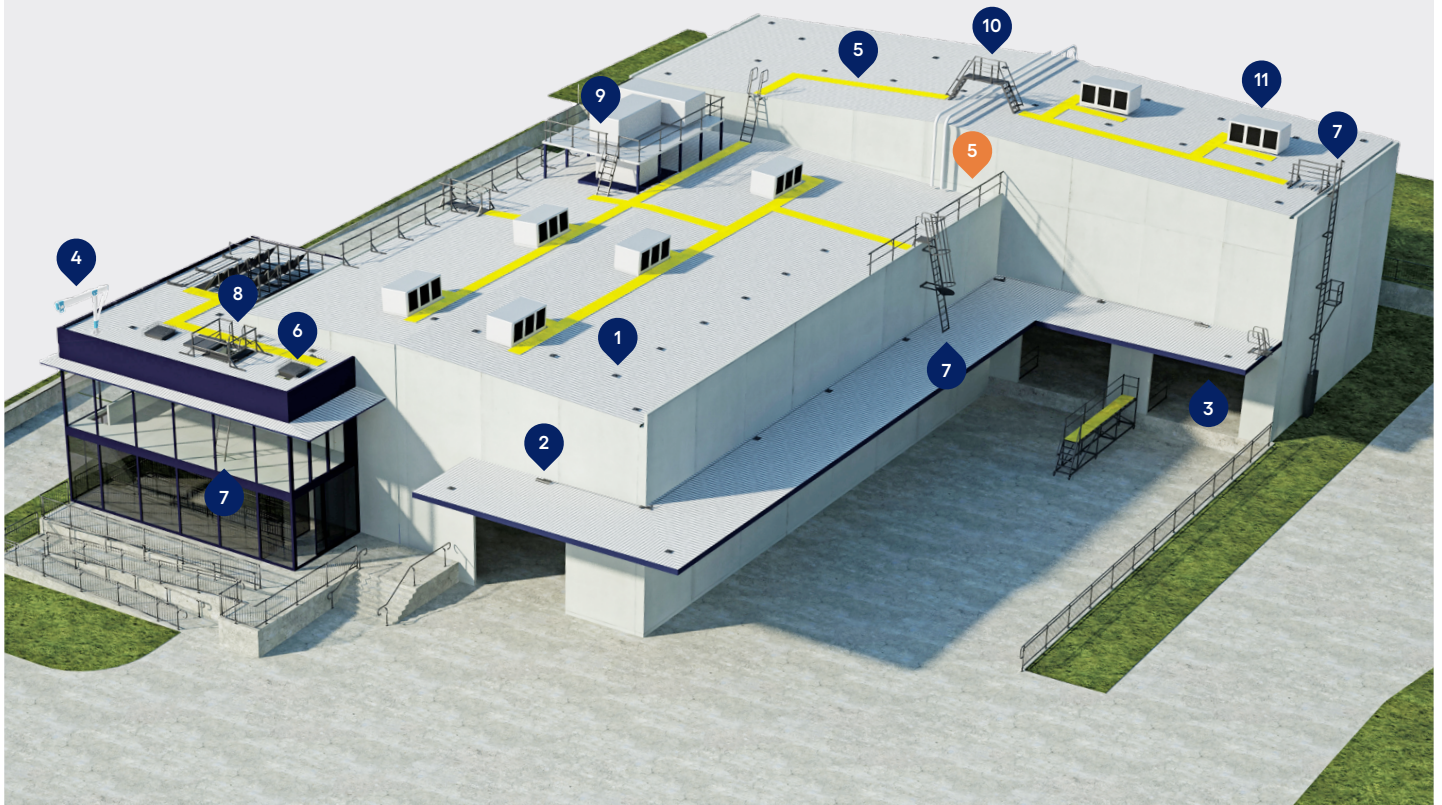
Commercial building height access and fall protection requirements

Kattsafe leads the industry in the design, installation and management of access and fall protection safety systems.

The in-action model demonstrates access and fall protection requirements for a commercial building design. Kattsafe recommendations fulfill current workplace requirements for the safety of building maintenance subcontractors, employees and the general public.

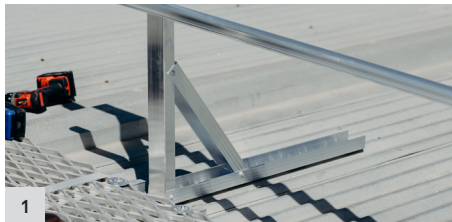
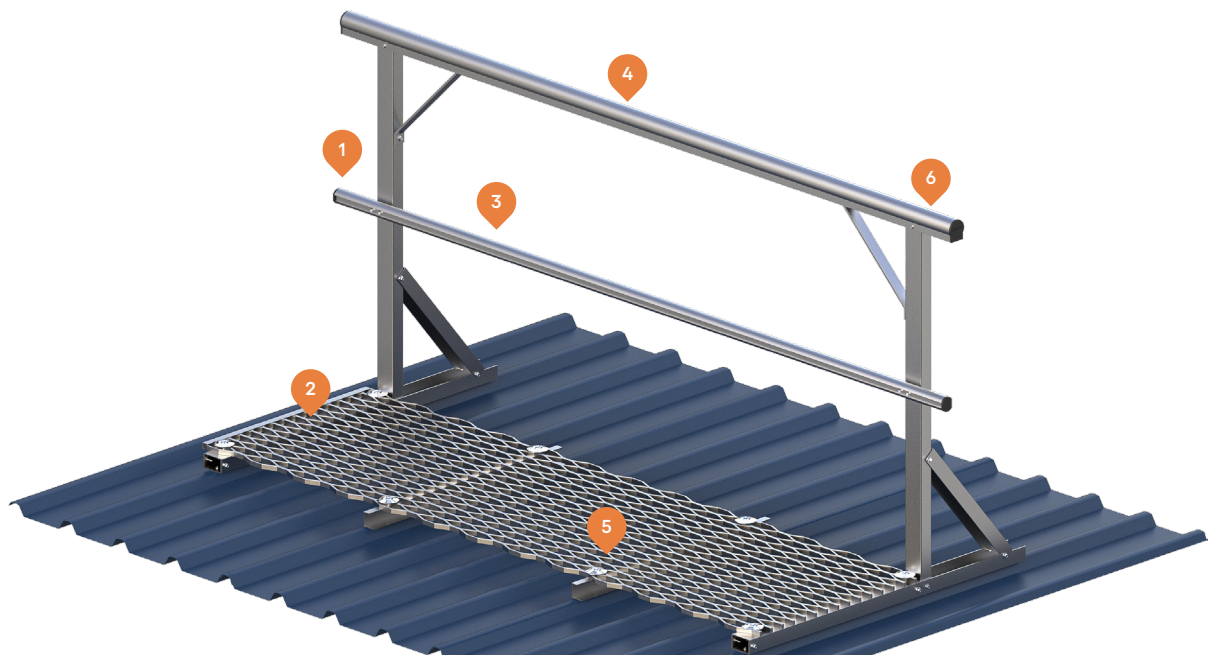
For more information please contact Kattsafe.
kattsafe.com.au

- 1 Anchor points
- 2 Static lines
- 3 Rigid rail
- 4 Davits and needles
- 5 **Guardrail and walkway**
- 6 Skylight protectors
- 7 Rung ladders
- 8 Access hatches
- 9 Platforms and stairs
- 10 Step ladders
- 11 HVAC platforms



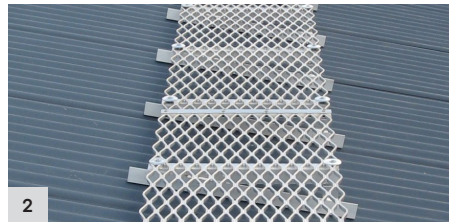
GUARDRAIL & WALKWAY

Lightweight guardrail and walkway providing high strength safe access and fall protection solutions for workers at heights.



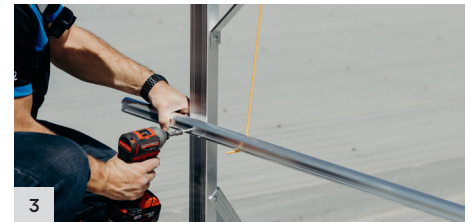
Lightweight construction

All guardrail and walkway components are manufactured from high strength aluminium, ensuring handling and installation is simple.



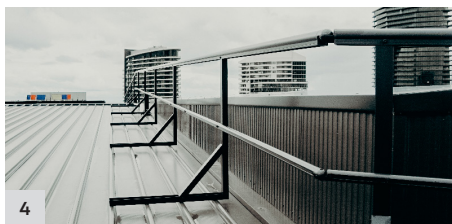
Knurled walkway

The small grooves on the walkway allow a better grip, creating a non-slip surface to walk on.



Pre-fabricated modular guardrail

The modular guardrail components and fixings allow for a fully adjustable system to fit varying applications and on-site requirements.



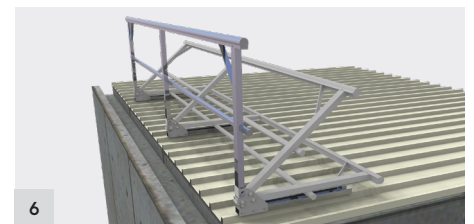
Low profile

The guardrail and walkway has an unobtrusive appearance with the option of powder coating to blend in.



Minimal components

Reducing on-site labour and removing the need for any specialist tools or equipment with easy to use, minimal components.



Additional option for a fold down design

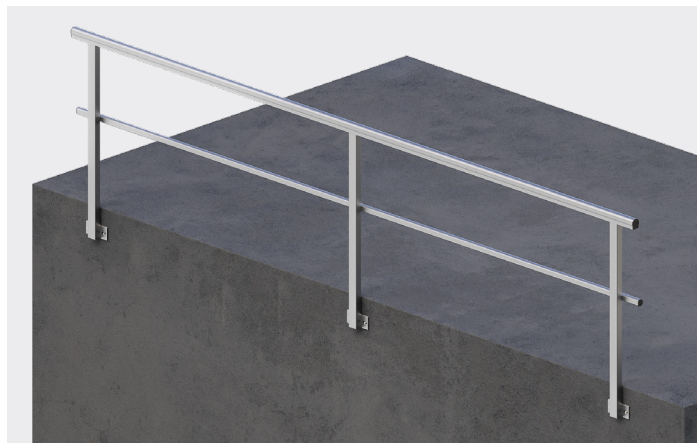
Provides the opportunity to be stored out of sight when not in use, eliminating visual impact in architectural sensitive locations.

GUARDRAIL & WALKWAY CONFIGURATIONS

GW1 Guardrail with baseplate - top mount



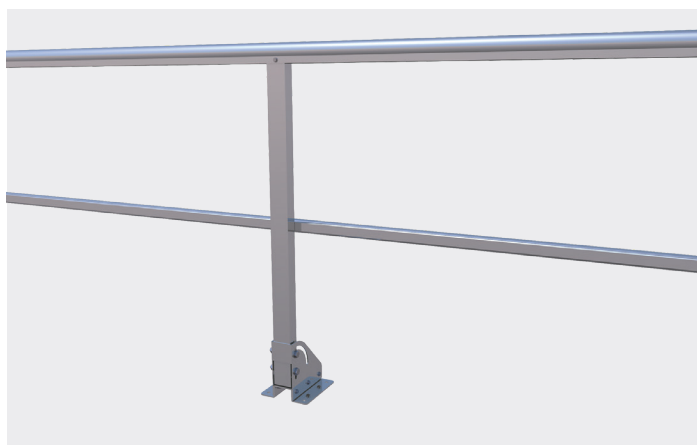
GW2 Guardrail with baseplate - side mount



GW3 Guardrail - metal deck mount



GW31 Fold down guardrail - concrete mount



GW32 Fold down guardrail - metal deck mount



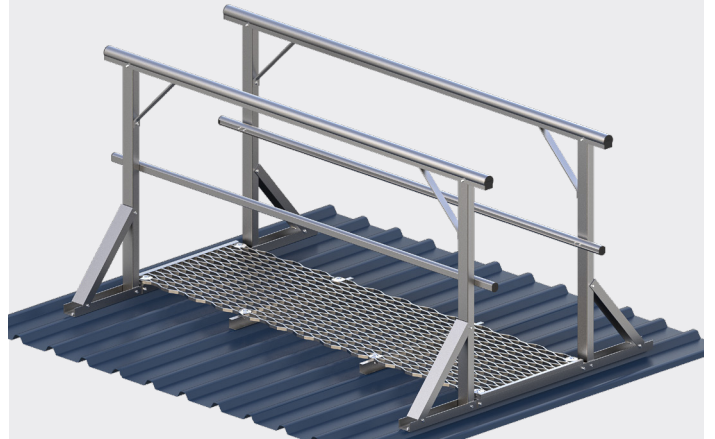
GW4 Walkway with guardrail one side - metal deck mount



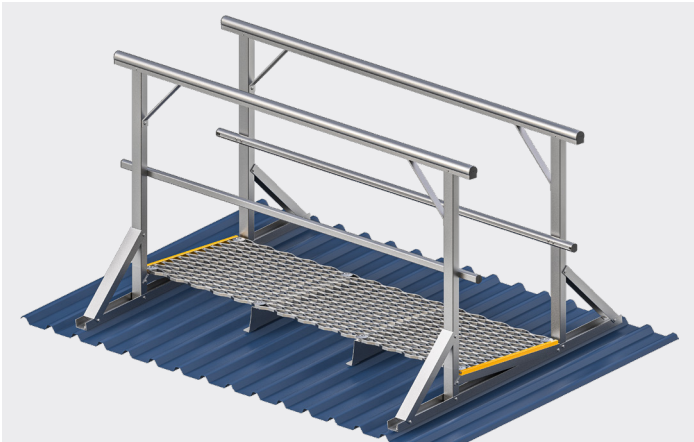
GW5 Walkway with guardrail one side - levelled metal deck mount



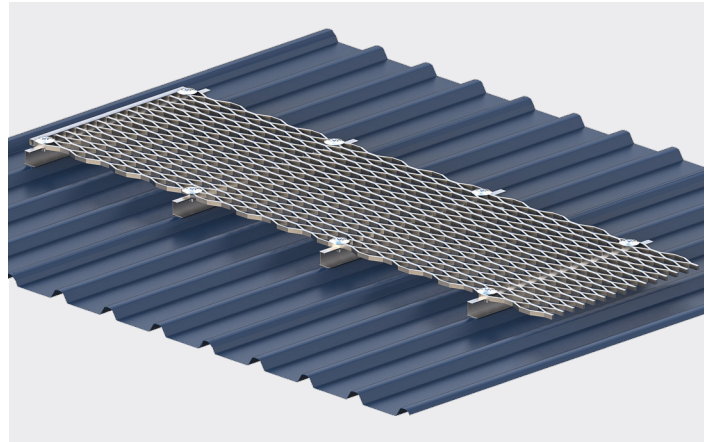
GW6 Walkway with guardrail both sides - metal deck mount



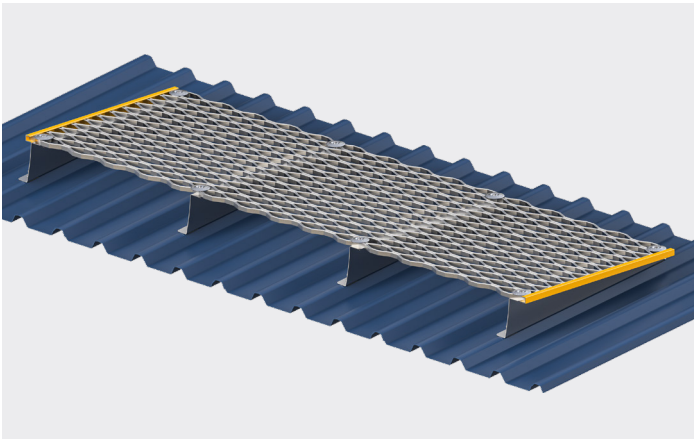
GW7 Walkway with guardrail both sides - levelled metal deck mount



GW8 Walkway

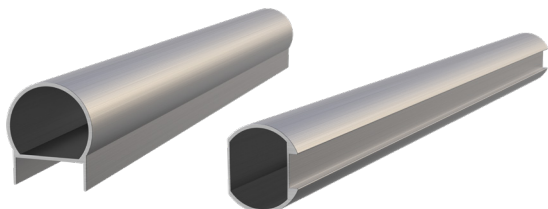


GW9 Walkway - levelled



GUARDRAIL COMPONENTS

Handrail and kneerail



Adjustable corner



End caps



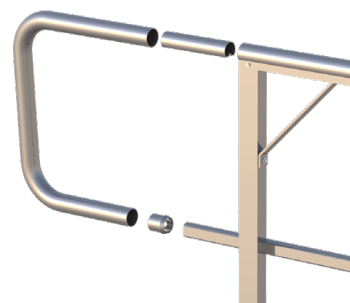
Post kit



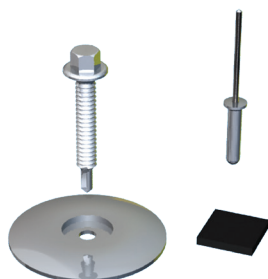
Self closing gate - adjustable



Closure bend



Fixings



TOOLS AND EQUIPMENT

Cordless drill



8mm metal drill bit



5/16 nut setter



Pitch meter



Tape measure



Drop saw



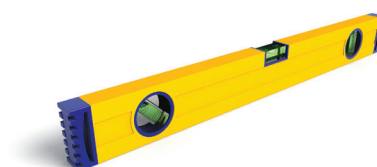
Battery powered or hand operated Gesipa riveter



Marking pen



Spirit level



INSTALLATION REQUIREMENTS

Must be read prior to installation

1. This system must only be installed by competent persons trained in the selection, use and maintenance of fall arrest systems and hold a current Kattsafe approved installer certificate.
2. Persons installing this system are required to have a comprehensive knowledge of the Australian Standards, codes of practice and industry guidelines that relate to the selection, use and maintenance of fall arrest systems and equipment.
3. Integrity and suitability of the structure to which this system is attached must be approved by a structural engineer unless it is clear to a competent person as to the suitability of connection to structure.
4. Read installation and operating instructions carefully before commencing any work. Consent to deviate from the installation guide must be obtained in writing from the manufacturer.
5. Conduct an initial work/risk assessment, and take all reasonable precautions to eliminate or control potential hazards and risks during the installation of this product.
6. Complete all necessary OH&S documentation, including a Job Safety Analysis and Work Method Statement and obtain consent from responsible person in workplace prior to commencement of work.
7. Installers must be authorised and accredited by Kattsafe and possess valid industry licenses, be appropriately trained, and comply with all relevant OH&S legislation prior to installation of this product.
8. Do not modify or remove any element of the support structure without prior authorisation by a qualified engineer.
9. Any re-routing of electrical and/or other services must be carried out by qualified or authorised personnel.
10. Appropriate temporary access and safety equipment must be used during installation, such as platform ladders or scaffolding and fall protection anchorage points.
11. In case of emergency access and fall arrest systems must be installed by a minimum of two persons.
12. Do not tamper with, modify or remove any part this system unless authorised by the manufacturer.
13. Appropriate labels or markings must be attached to each system and include the following:
 - System for personnel use only
 - Service entry date
 - Next examination/service due date
 - Harness gear requirements and system compatibility
 - Maximum designed load ratings
 - Installer/Certifier contact details
 - Decorative coatings and coverings must be removed to ensure correct evaluation of structure prior to attachment of system
14. Documentation confirming correct use and maintenance of the system and equipment must be provided to the workplace manager on completion of installation. (See operation manual).



Kattsafe instructions and recommendations, drawings and diagrams, and all other documentation are copyright, errors and omissions excepted, and must be carefully read and implemented. Any assistance or guidance given is without prejudice, and Kattsafe cannot be held responsible for any inaccuracy or misinterpretation whatever. Failure to follow site installation requirements and warnings, may result in serious injury or death.

Kattsafe accepts no direct or indirect responsibility and/or consequential liability whatever, for any products and systems incorrectly installed or certified. Kattsafe cannot warrant the integrity or suitability of the structure to which the products may be attached. Prior assessment must be made by a qualified structural engineer, unless the structure is authorised or approved by a competent person.

SYSTEM LIMITATIONS

Must be read prior to installation

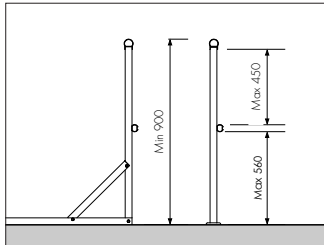
1. Minimum structural requirements for attachment of guardrail:
 - Metal roof deck – 0.42mm base metal thickness
 - Timber floor - 16mm MDF or composite
 - Concrete - 75mm slab (25 Mpa)
2. Guardrails are not designed for public access where crowd loadings are required.
3. The maximum height of the handrail cannot exceed 1100mm after which additional handrail bracing and support structure will be required.
4. Guardrail must not be installed on a roof pitch in excess of 35° as the system is not designed to withstand a dynamic fall load.
5. Guardrail is not designed to support rope access / abseil systems which will need to be configured independently of the guardrail system.
6. This system, under normal use and environment, has a life expectancy of up to 10 years. A manufacturer's assessment and certification to confirm suitability for an additional 5 years use is recommended. This will depend on location, usage and scheduled maintenance as per manufacturer and legislative requirements.
7. Do not tamper with or make alterations to system components without manufacturer's consent.
8. This system is not to be used for tethering or lifting machinery or equipment.
9. The safety system must be recertified by a competent height safety inspector as recommended:
 - Non corrosive/mild environment – 12 monthly
 - Corrosive/harsh environment – 6 monthly (more frequent inspection may be required)



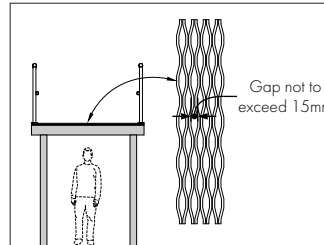
Kattsafe recommends that persons using fall arrest systems do not work alone in case of an emergency and help is required.

Should any part of the system/equipment have been subjected to abnormal loading, use must be discontinued until replaced/recertified by a competent height safety inspector.

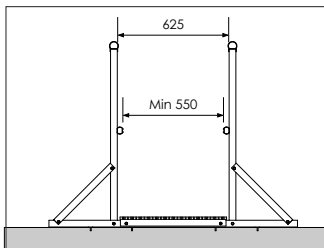
AUSTRALIAN STANDARDS SUMMARY



Minimum height for guardrail is 900mm from the walking surface. If guardrail is more than 1100mm high, a third rail is required

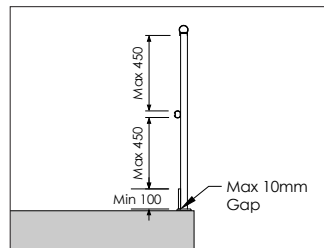


Where persons have access to or work beneath any platform or landing, the floor of such platform or landing shall be designed, or provided with protection, to prevent objects falling through the floor reaching the area below - max 15mm opening. Use small mesh or checkerplate.

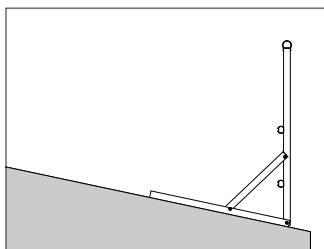


Horizontal distance between guardrails, intermediate rails or toeboards shall not be less than 550mm.

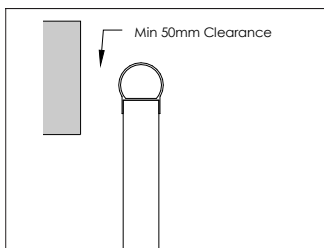
Minimum width of walkway must be 600mm.



A toeboard (Min 100mm) shall be installed on the edge of a walkway which an object could fall to where persons have access to the area below and to the side of the walkway.

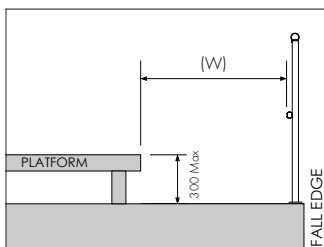


If there is guardrail on the edge of the roof where the slope is 12° or greater, a third rail is recommended.



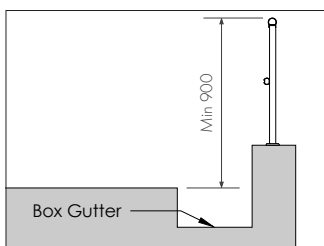
The distance between the edge of the handrail and any adjacent structure must be no less than 50mm.

A Handrail provides a handhold, eg. Stairway. This may not be applicable when used as a guardrail. (Barrier as edge protection)



Guardrail is not required on a platform if the height to lower landing is less than 300mm and (W) is not more than 1000mm. If (W) is less than 1000mm then the guardrail height must be increased by 300mm.

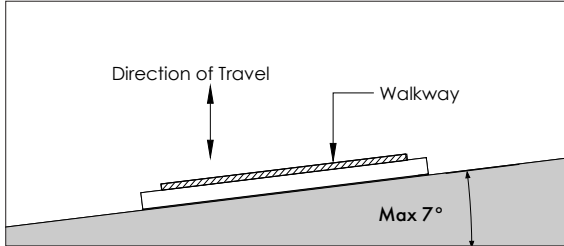
If platform is higher than 300mm, guardrail is required on the platform.



Height of guardrail must be min 900mm from main walking surface e.g. roof deck.

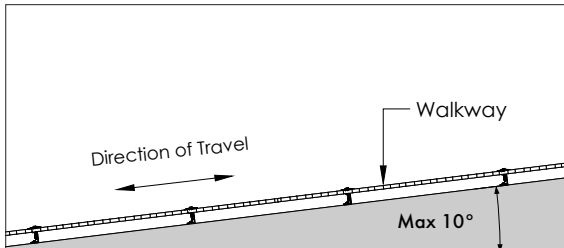
(Unless box gutter is more than 1000mm wide - then height is measured from box gutter)

WALKWAY APPLICATIONS



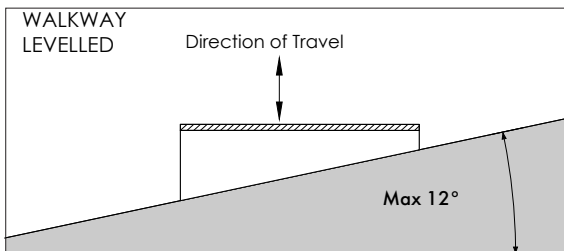
Across slope
Roof angle: 0° - 7°

Walkway same angle as roof.



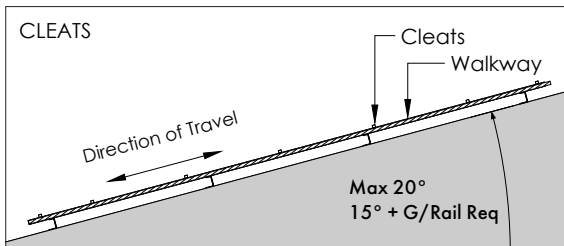
In-line with slope
Roof angle: 7° - 10°

Walkway same angle as roof.



Across slope
Roof angle: 8° - 12°

Walkway to be levelled.



In-line with slope
Roof angle: 10° - 20°

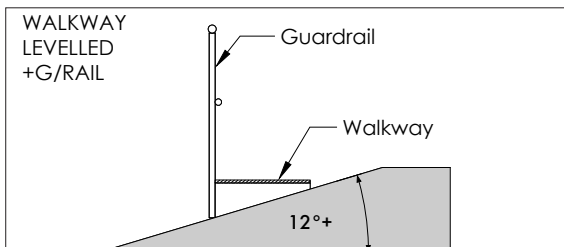
- Walkway same angle as roof
- Cleats required

Cleat Spacings:

Slopes 10° - 15°: 450mm

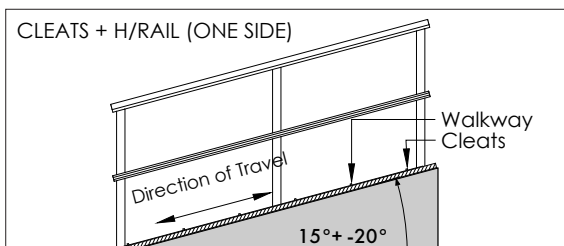
Slopes >15° - 18°: 400mm

Slopes >18° - 20°: 350mm



Across slope
Roof angle: 12° +

- Walkway to be levelled.
- Guardrail required.

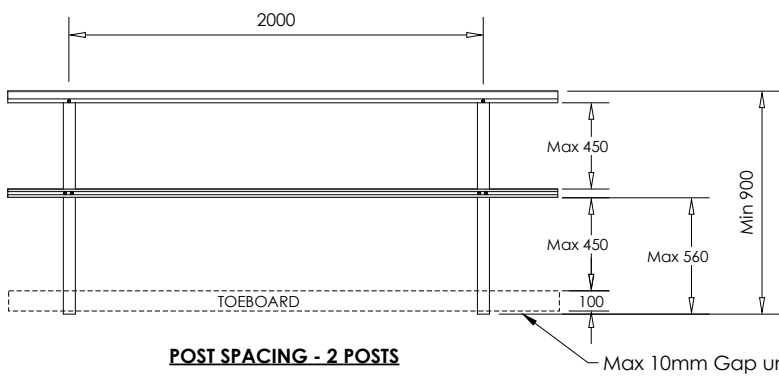


In-line with slope
Roof angle: 15° - 20°

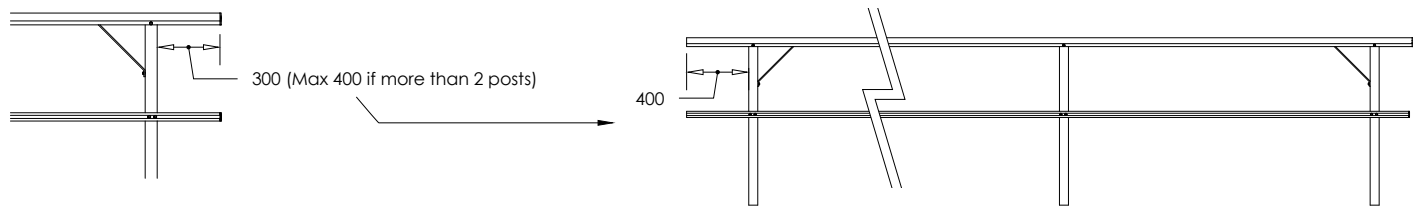
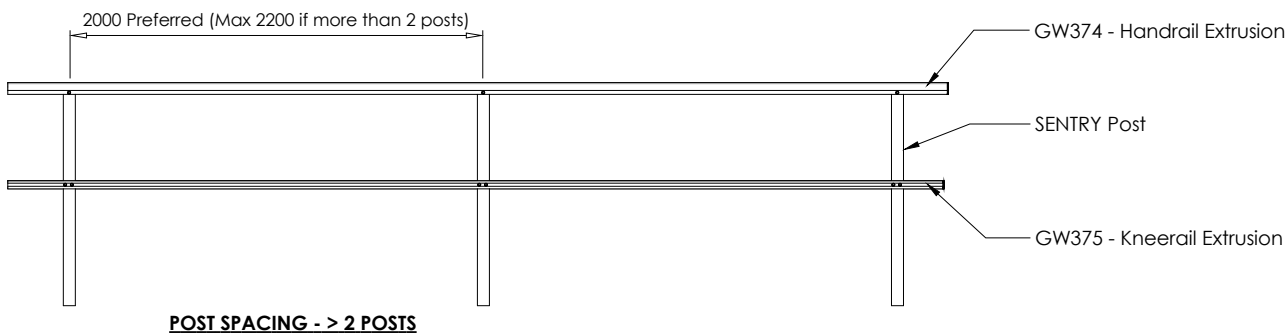
- Walkway same angle as roof
- Cleats required
- Guardrails required on both sides

GUARDRAIL SPACING

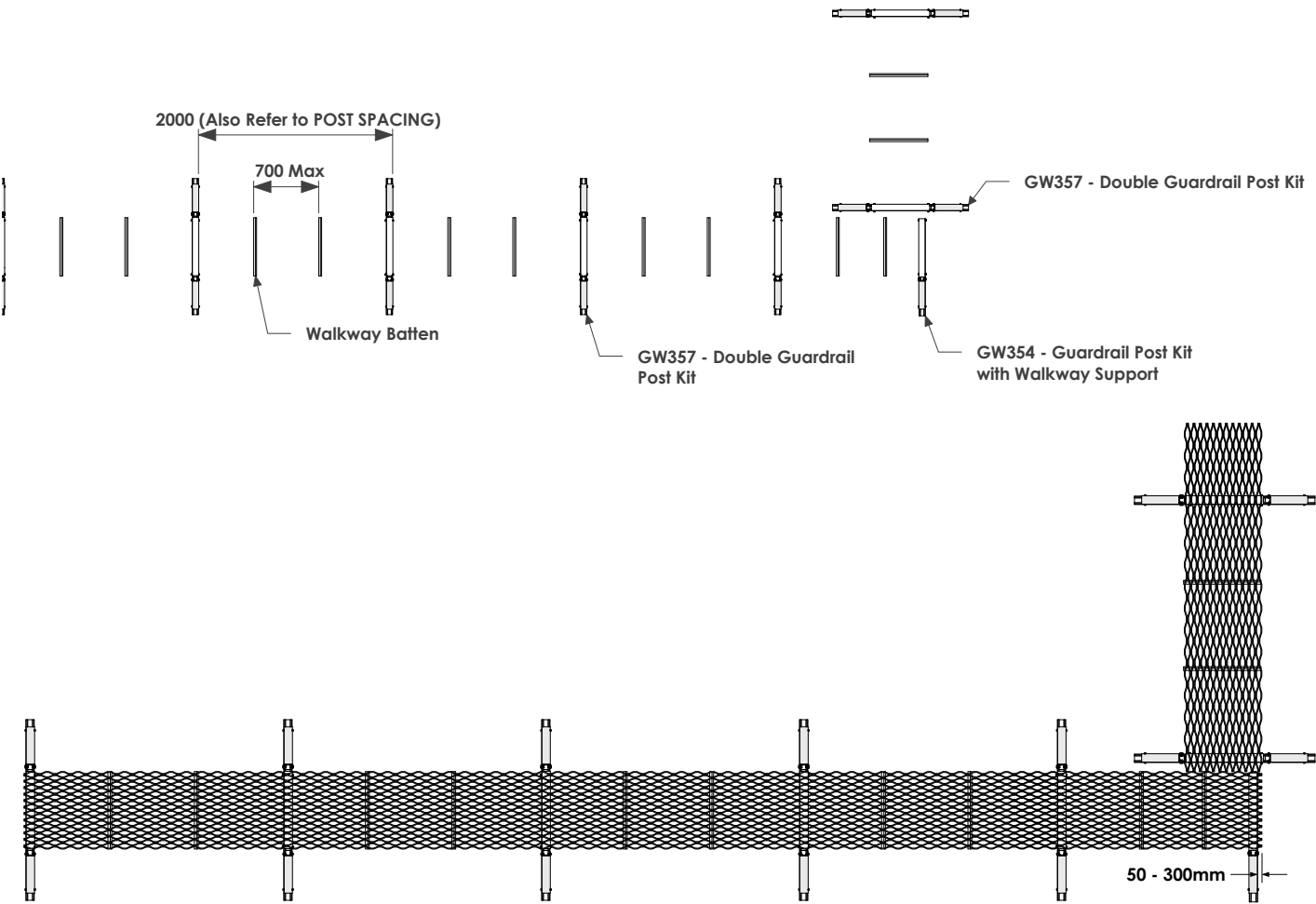
Post spacing - two posts



NOTE - SENTRY Guardrail System is standard 1000mm high
Guardrail over 1100mm high will require an additional mid-rail

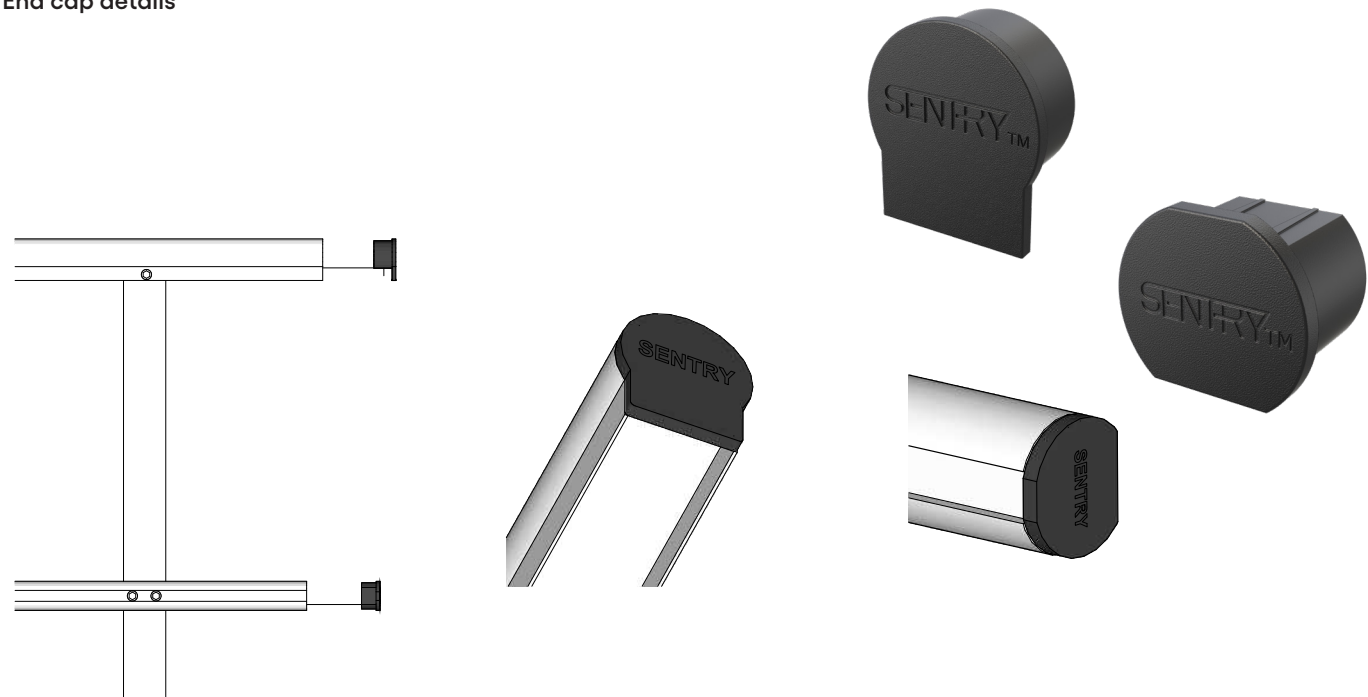


GUARDRAIL ON WALKWAY LAYOUT

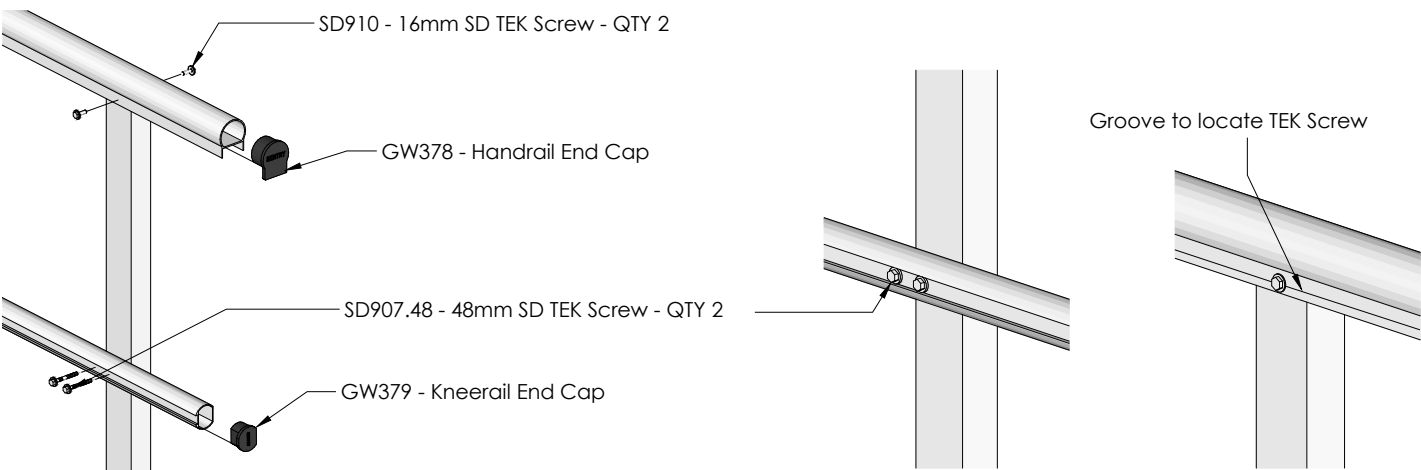


GUARDRAIL INSTALLATION PROCEDURE

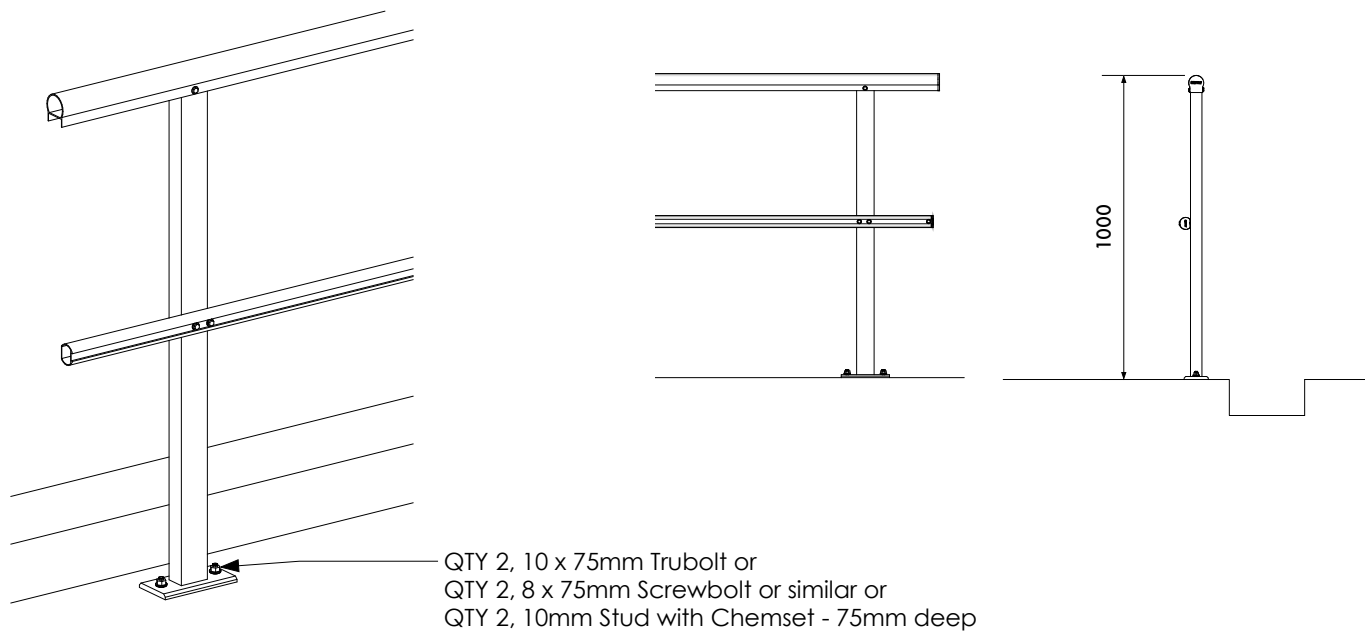
End cap details



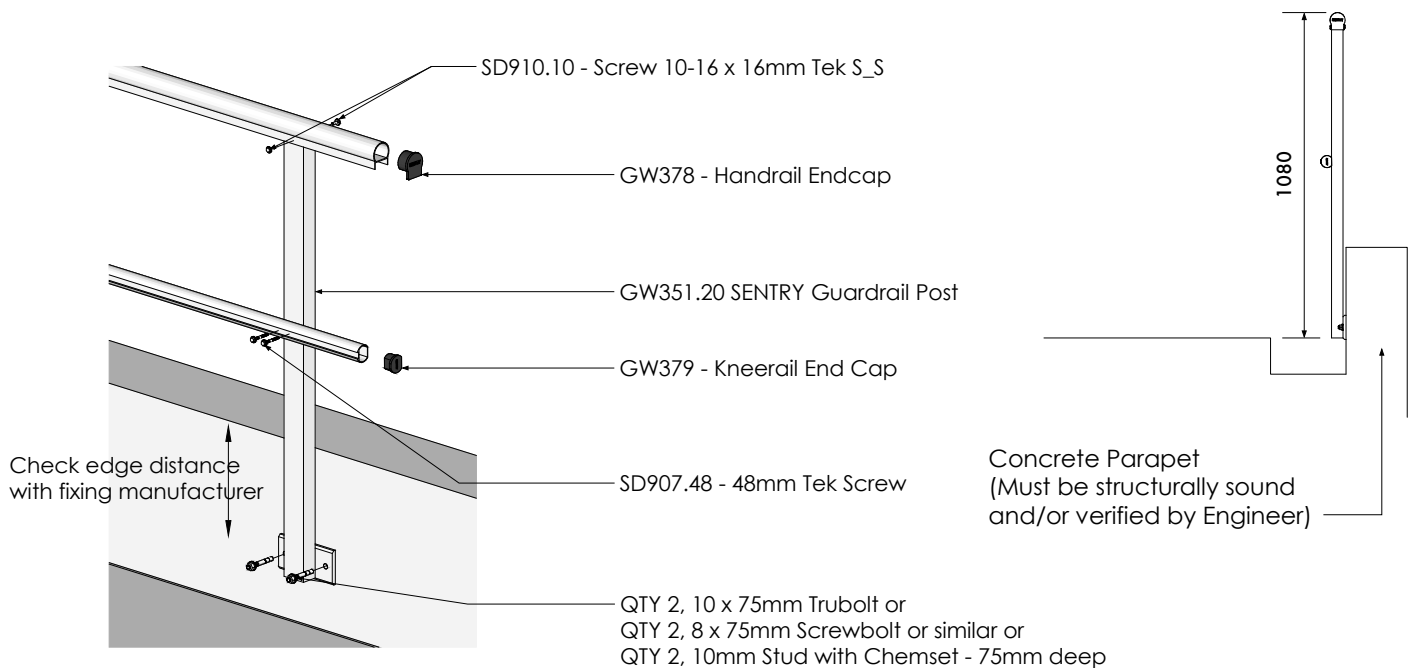
Post connection details



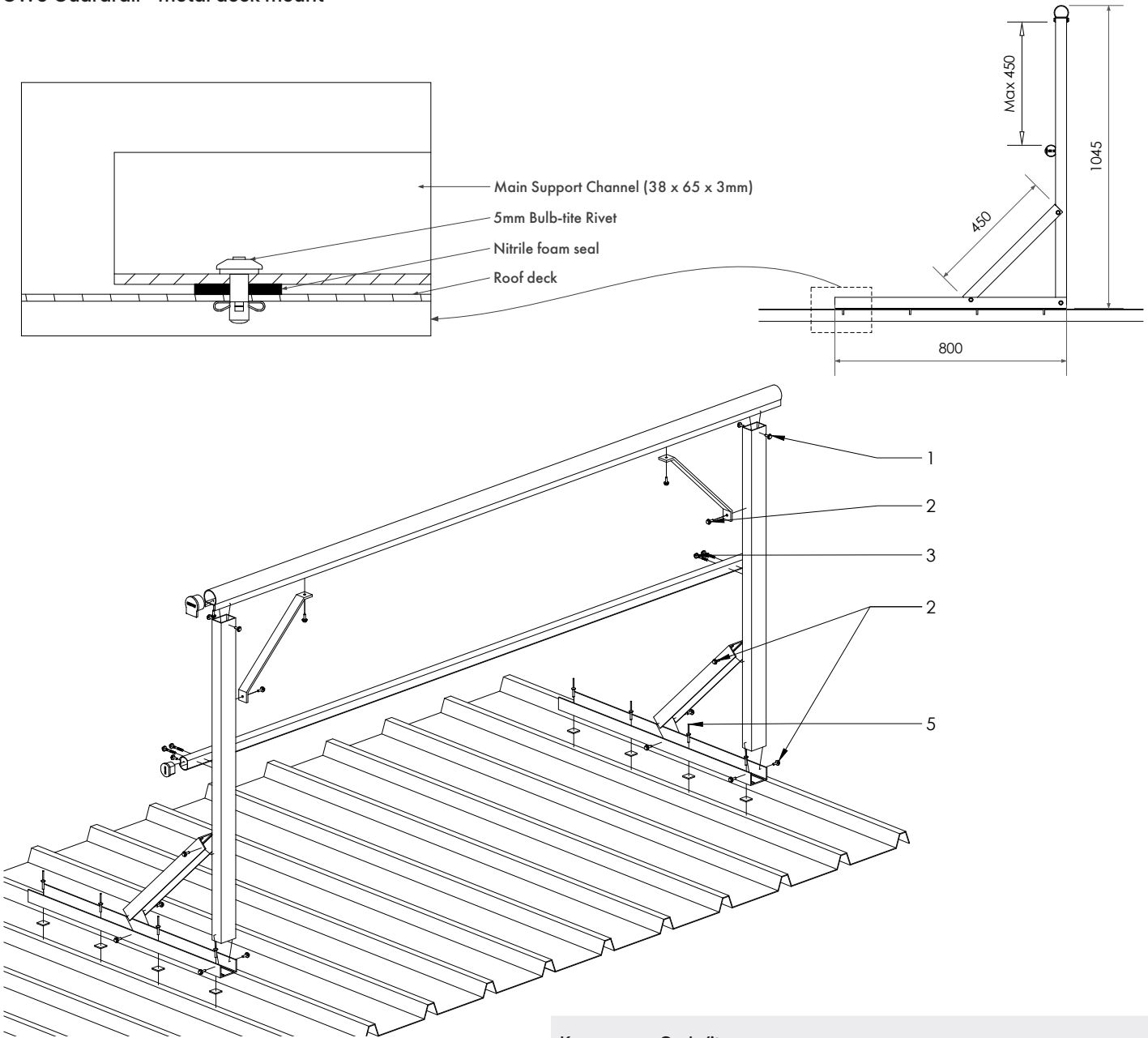
GW1 Guardrail with baseplate - top mount



GW2 Guardrail with baseplate - side mount

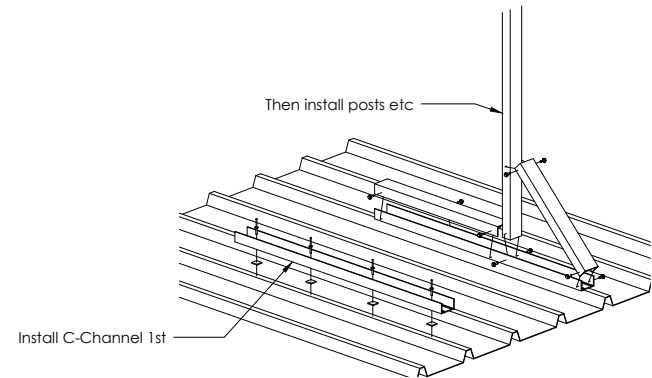
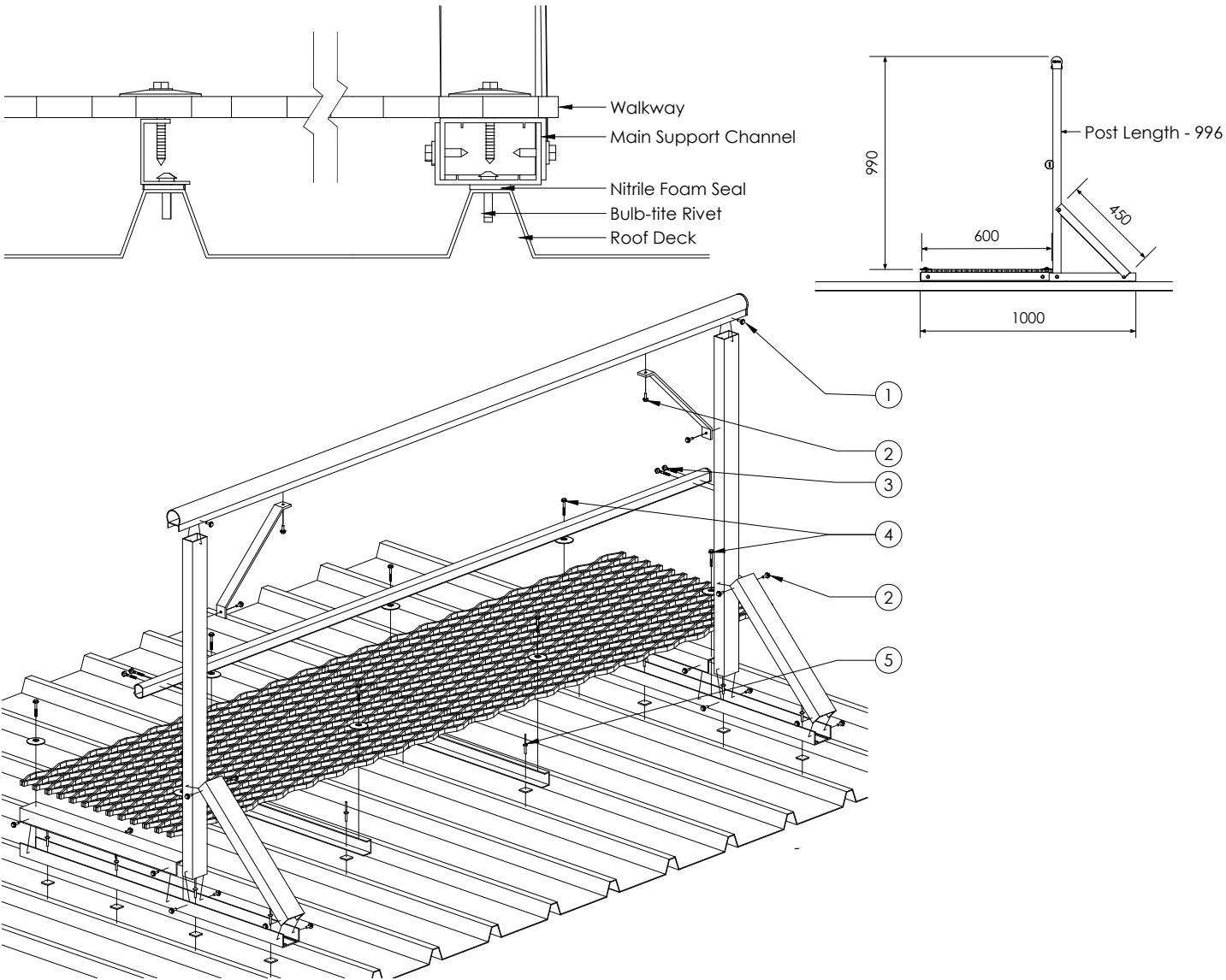


GW3 Guardrail - metal deck mount



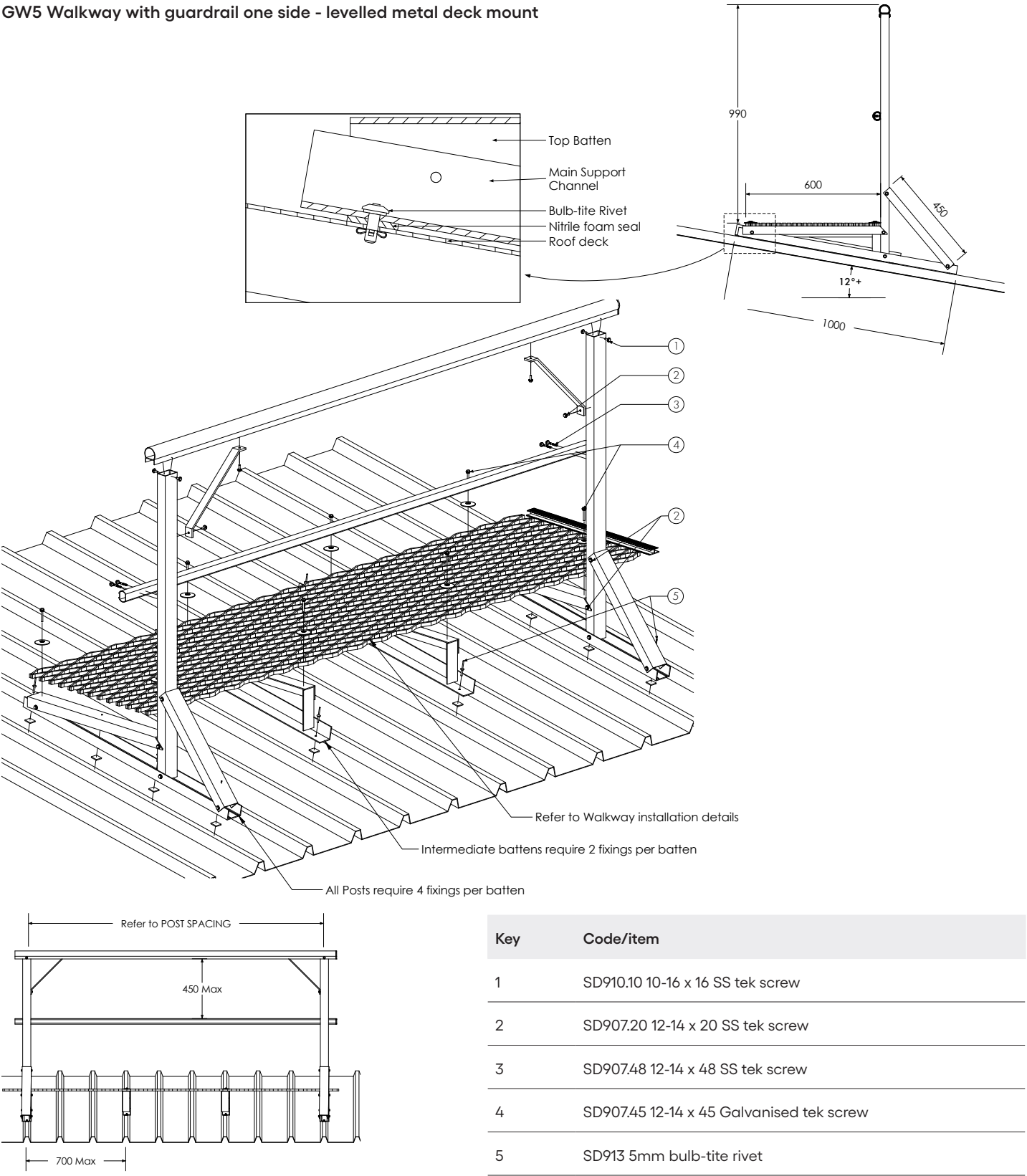
Key	Code/item
1	SD910.10 10-16 x 16 SS tek screw
2	SD907.20 12-14 x 20 SS tek screw
3	SD907.48 12-14 x 48 SS tek screw
4	SD907.35 12-14 x 35 SS tek screw
5	SD913 5mm bulb-tite rivet

GW4 Walkway with guardrail one side - metal deck mount

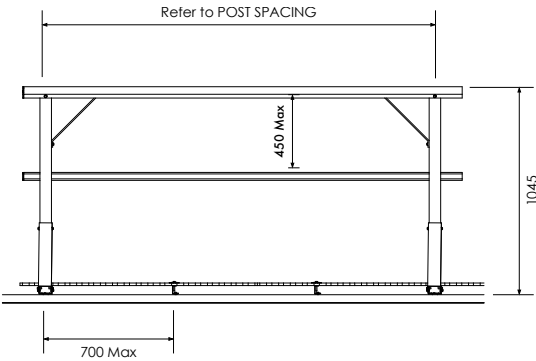
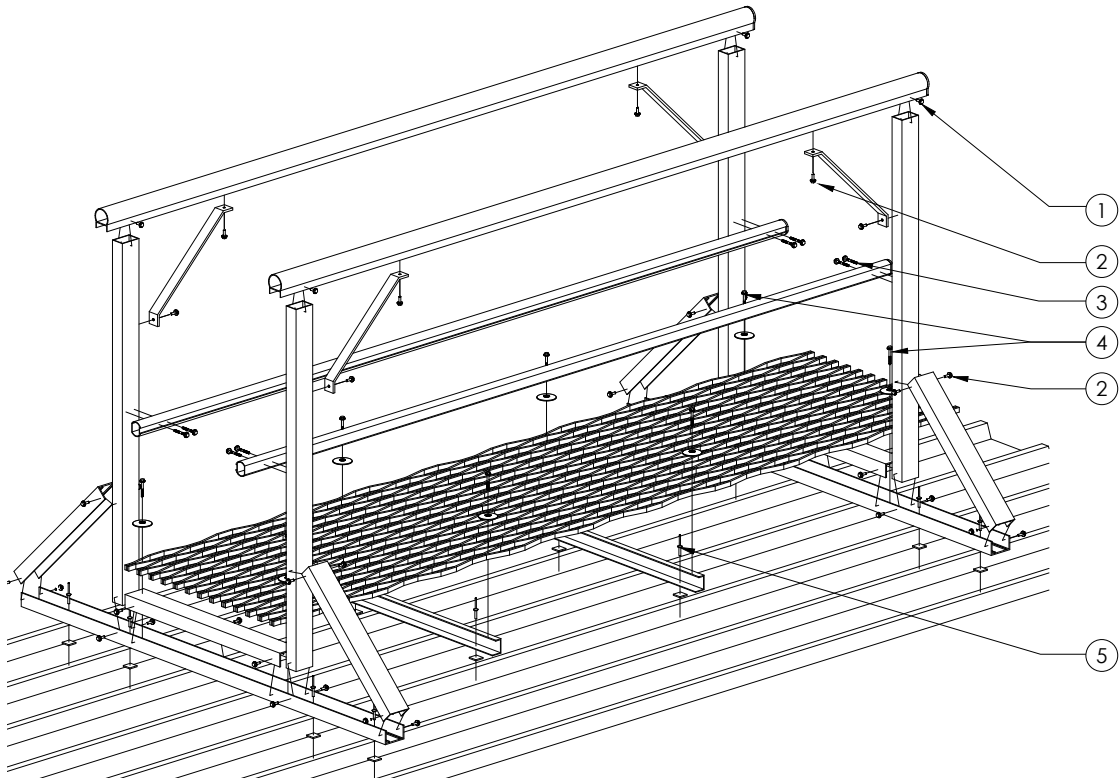
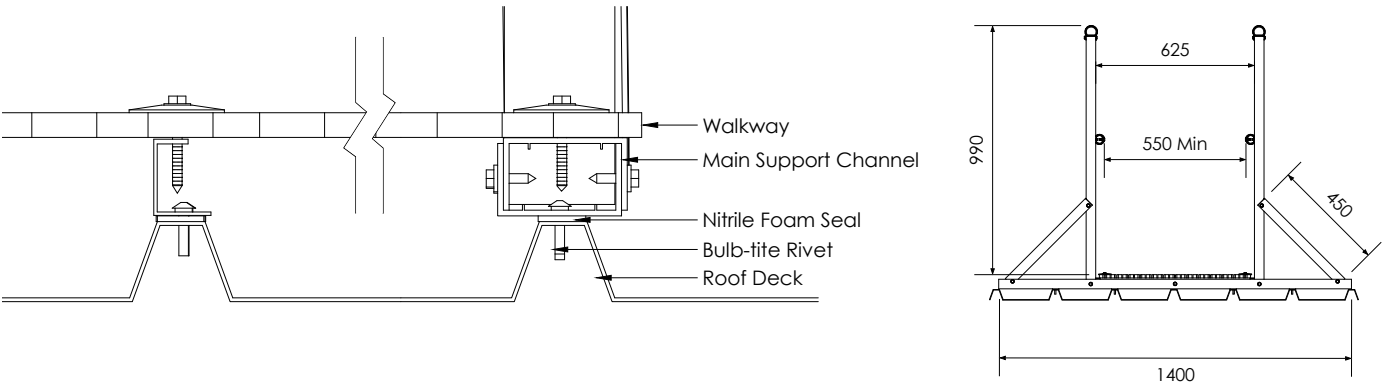


Key	Code/item
1	SD910.10 10-16 x 16 SS tek screw
2	SD907.20 12-14 x 20 SS tek screw
3	SD907.48 12-14 x 48 SS tek screw
4	SD907.45 12-14 x 45 Galvanised tek screw
5	SD913 5mm bulb-tite rivet

GW5 Walkway with guardrail one side - levelled metal deck mount

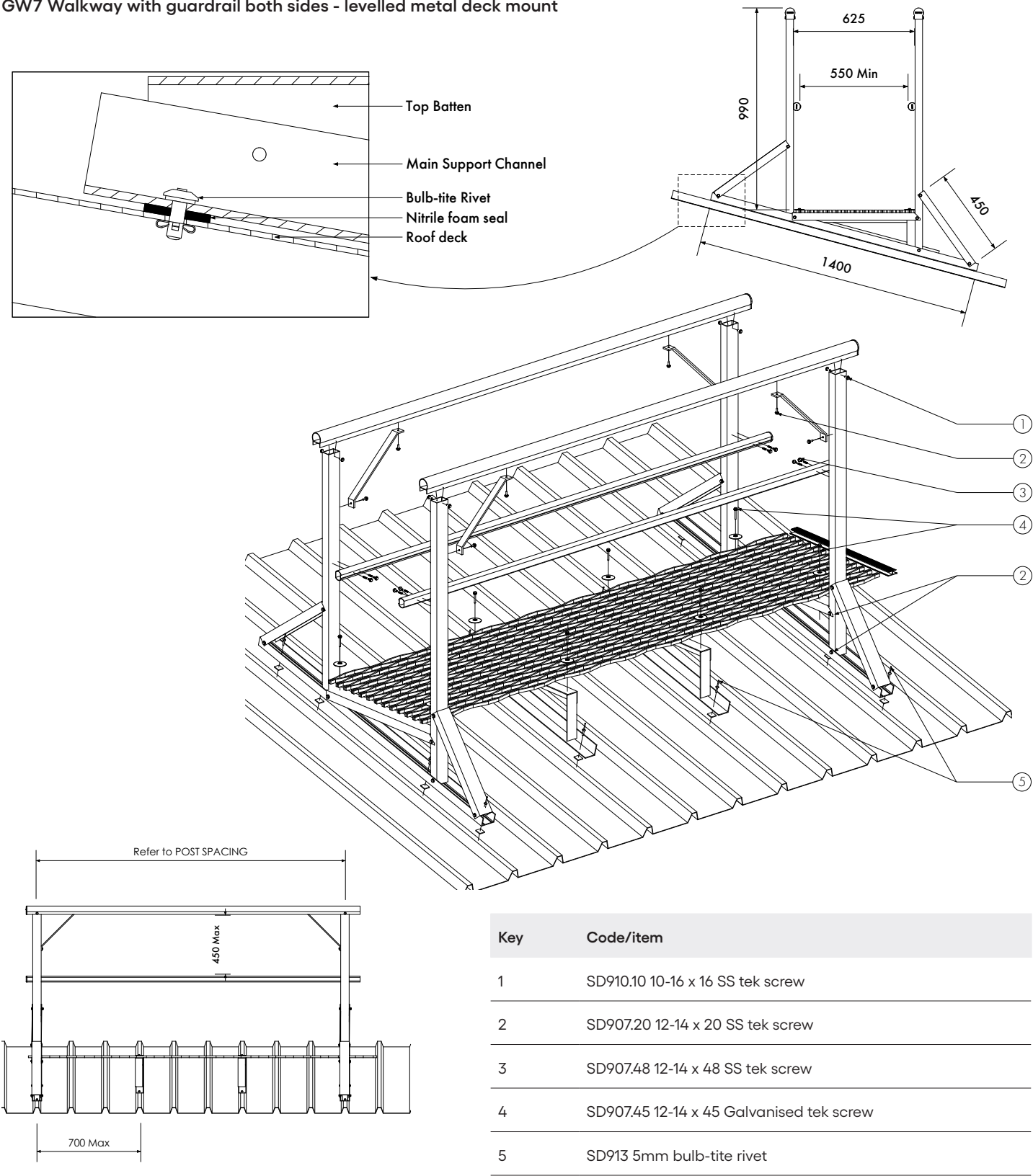


GW6 Walkway with guardrail both sides - metal deck mount



Key	Code/item
1	SD910.10 10-16 x 16 SS tek screw
2	SD907.20 12-14 x 20 SS tek screw
3	SD907.48 12-14 x 48 SS tek screw
4	SD907.45 12-14 x 45 Galvanised tek screw
5	SD913 5mm bulb-tite rivet

GW7 Walkway with guardrail both sides - levelled metal deck mount



Corner elbow installation

Step 1

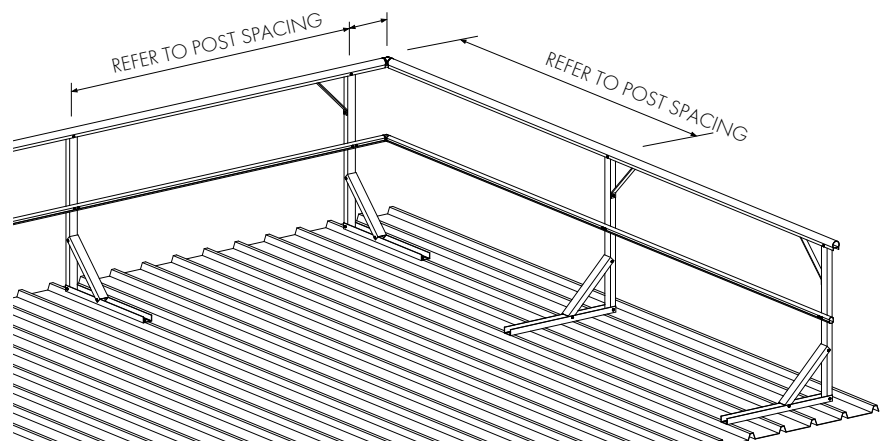
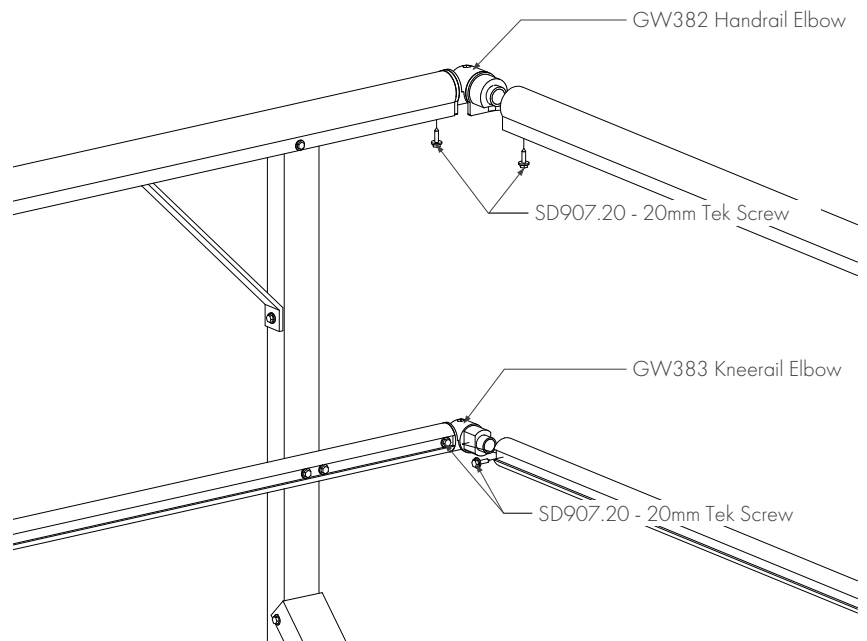
Insert the corner elbow into the handrail extrusion and fix with 1 x 20mm tek screw from the underside.

Step 2

Slide the adjacent handrail tube section onto the elbow then secure using a 20mm tek screw.

Step 3

Repeat above process for the kneerail elbow, however the tek screws are fixed into the front recess.



Splice join installation

Step 1

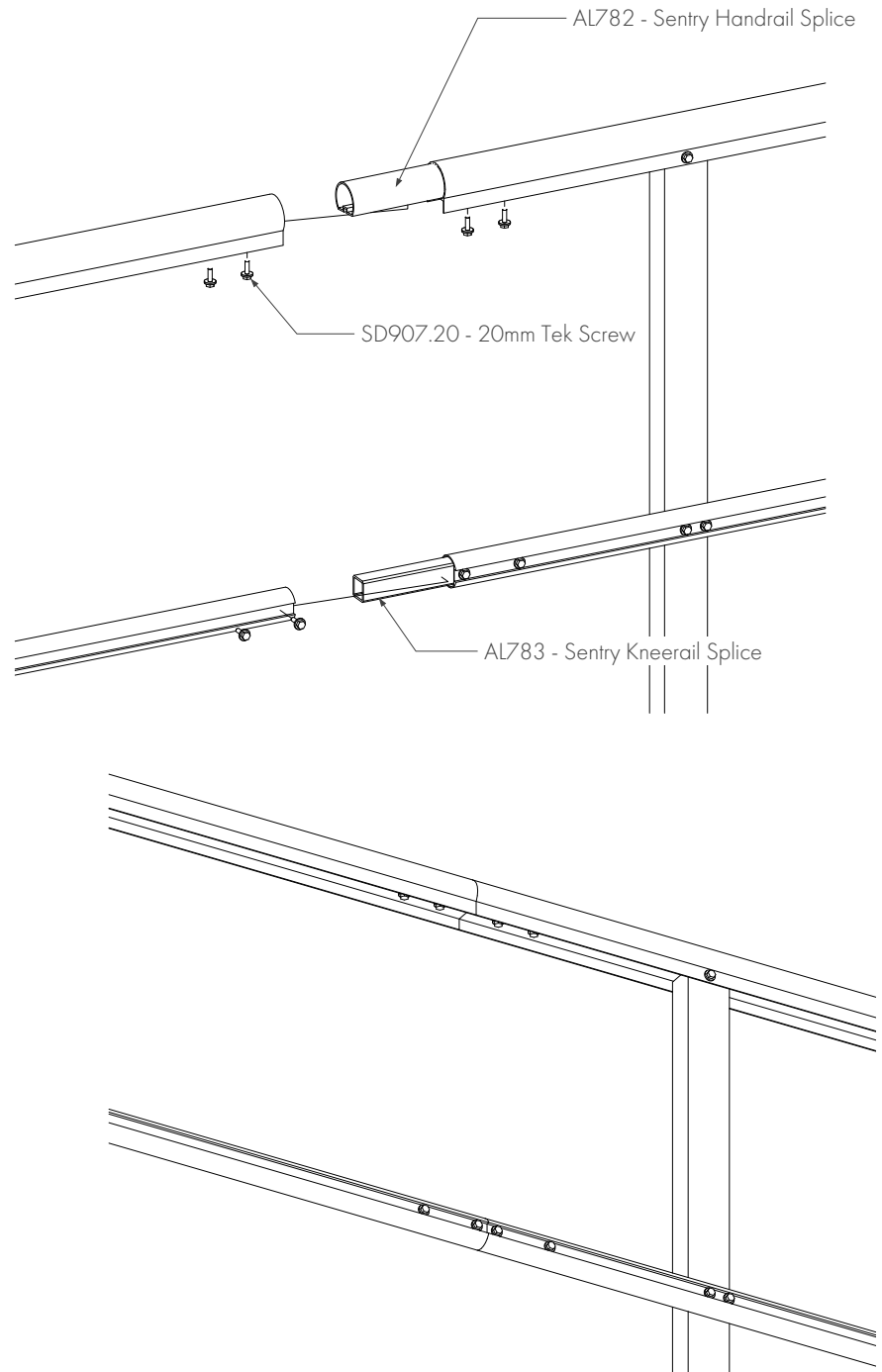
Insert the splice join halfway into the handrail/kneerail tube.

Step 2

Fix 2 x 20mm tek screws through the tube into the splice join.

Step 3

Slide the next section of handrail/kneerail tube over the splice join and fix with another two 20mm tek screws.



Closure bend installation

Step 1

Cut the handrail tube flush with the post (Note, this is the preferred option but it not critical - max overhand of top handrail tube is 300mm)

Step 2

Ensure the kneerail is protruding approx 200mm.

Step 3

Insert splice section into handrail section and fix with two 20mm tek screws.

Step 4

Slide the kneerail reducer over the kneerail tube.

Step 5

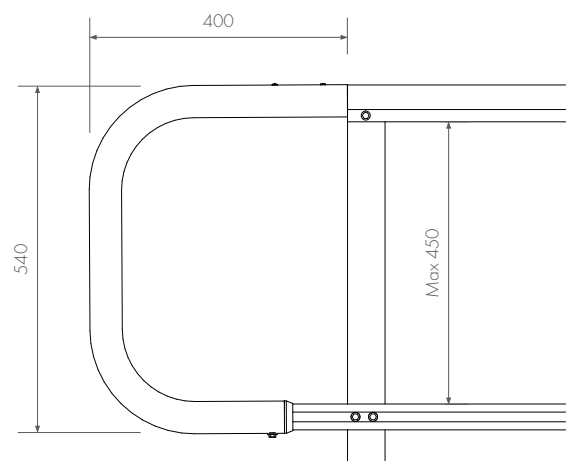
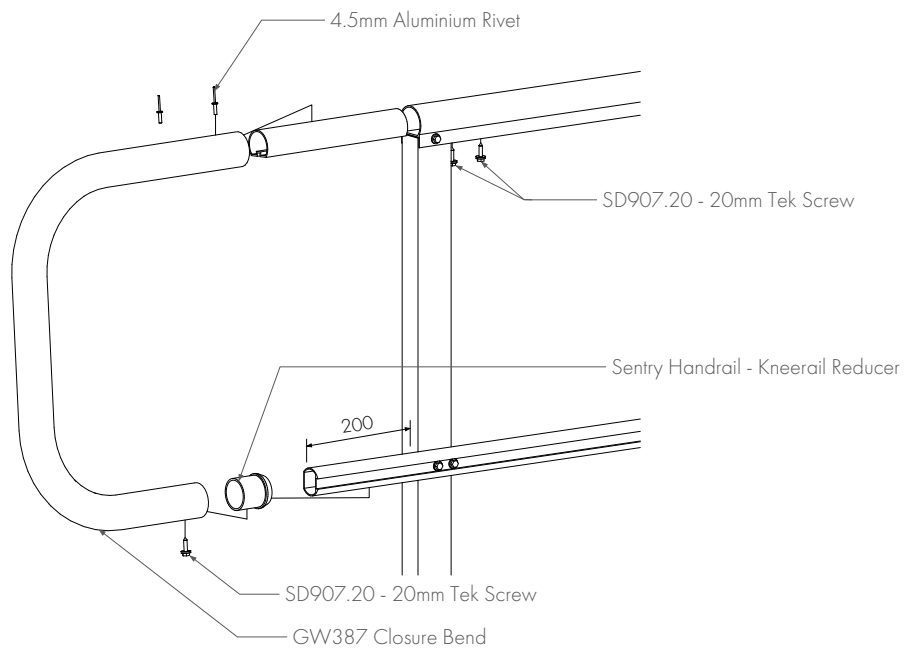
Slide the closure bend over the splice and kneerail reducer.

Step 6

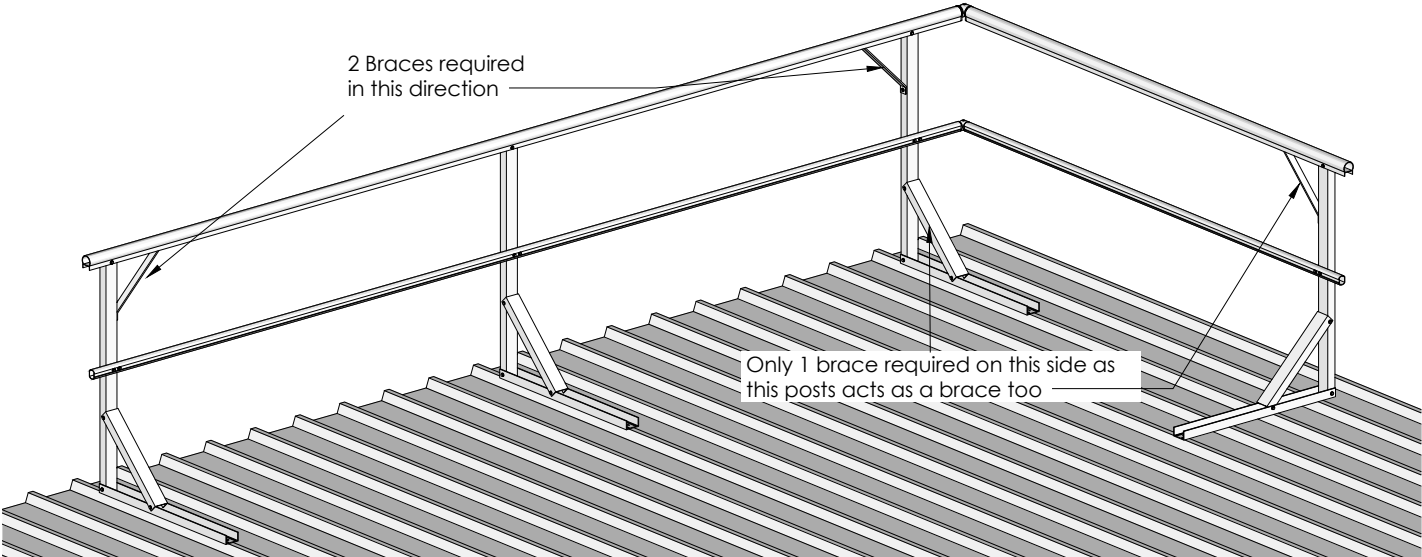
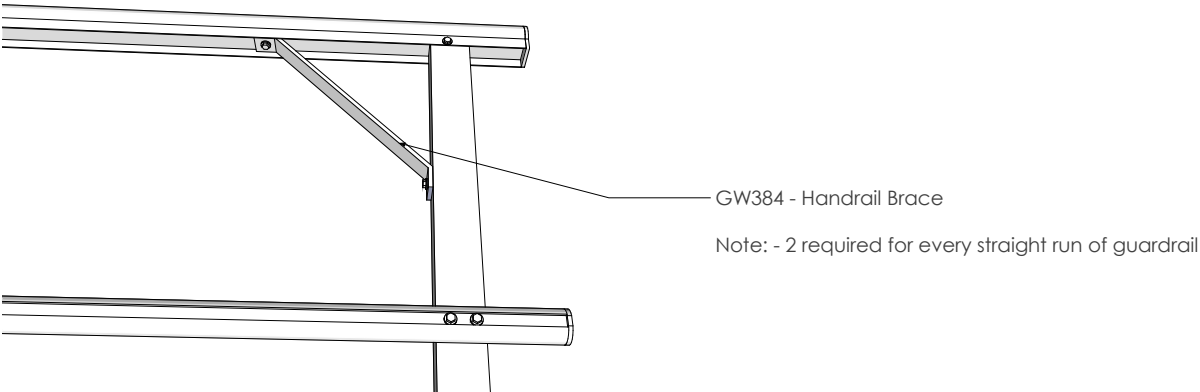
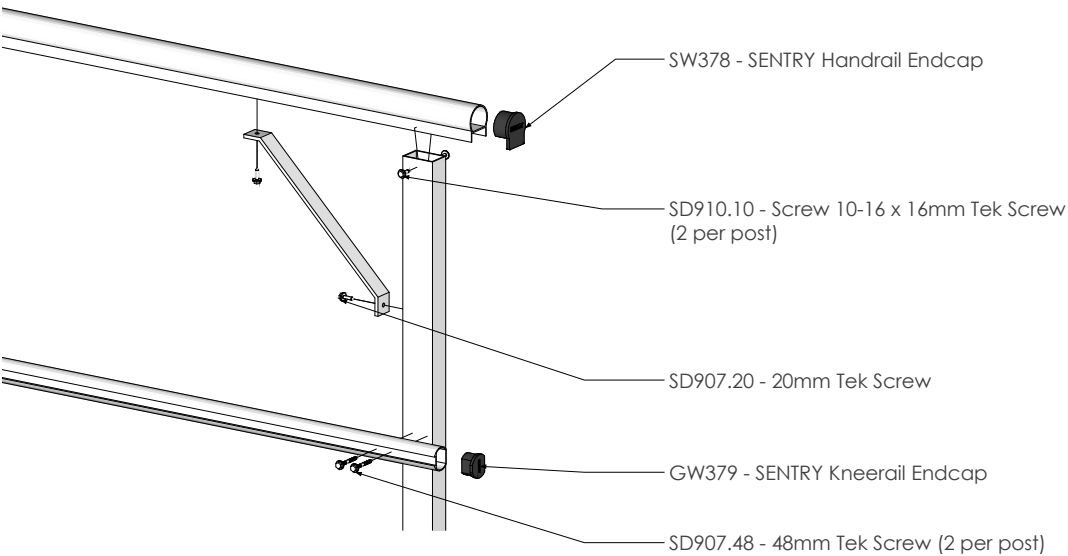
Fix two aluminium rivets through the top closure bend and into splice join.

Step 7

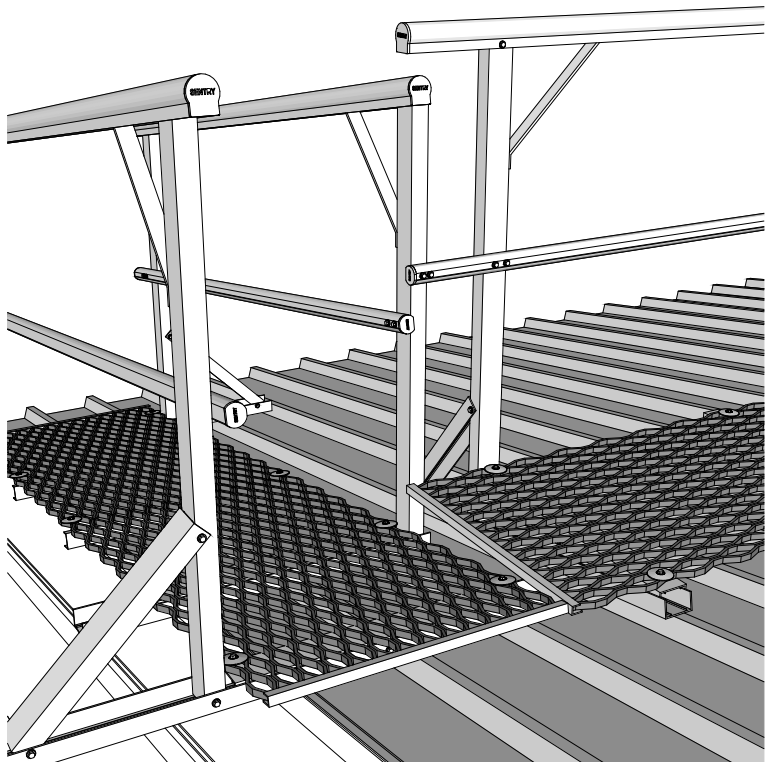
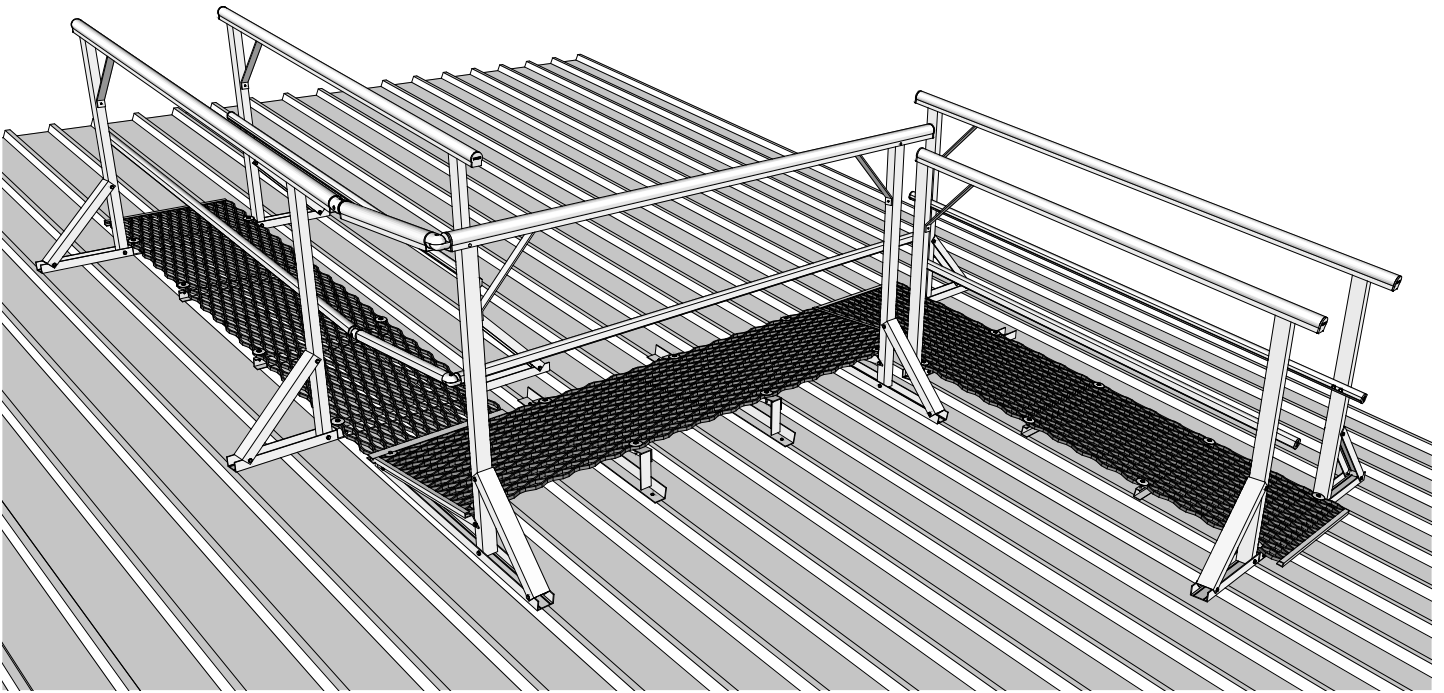
Fix a 20mm tek screw through the closure bend and kneerail reducer underneath.



End caps and brace installation

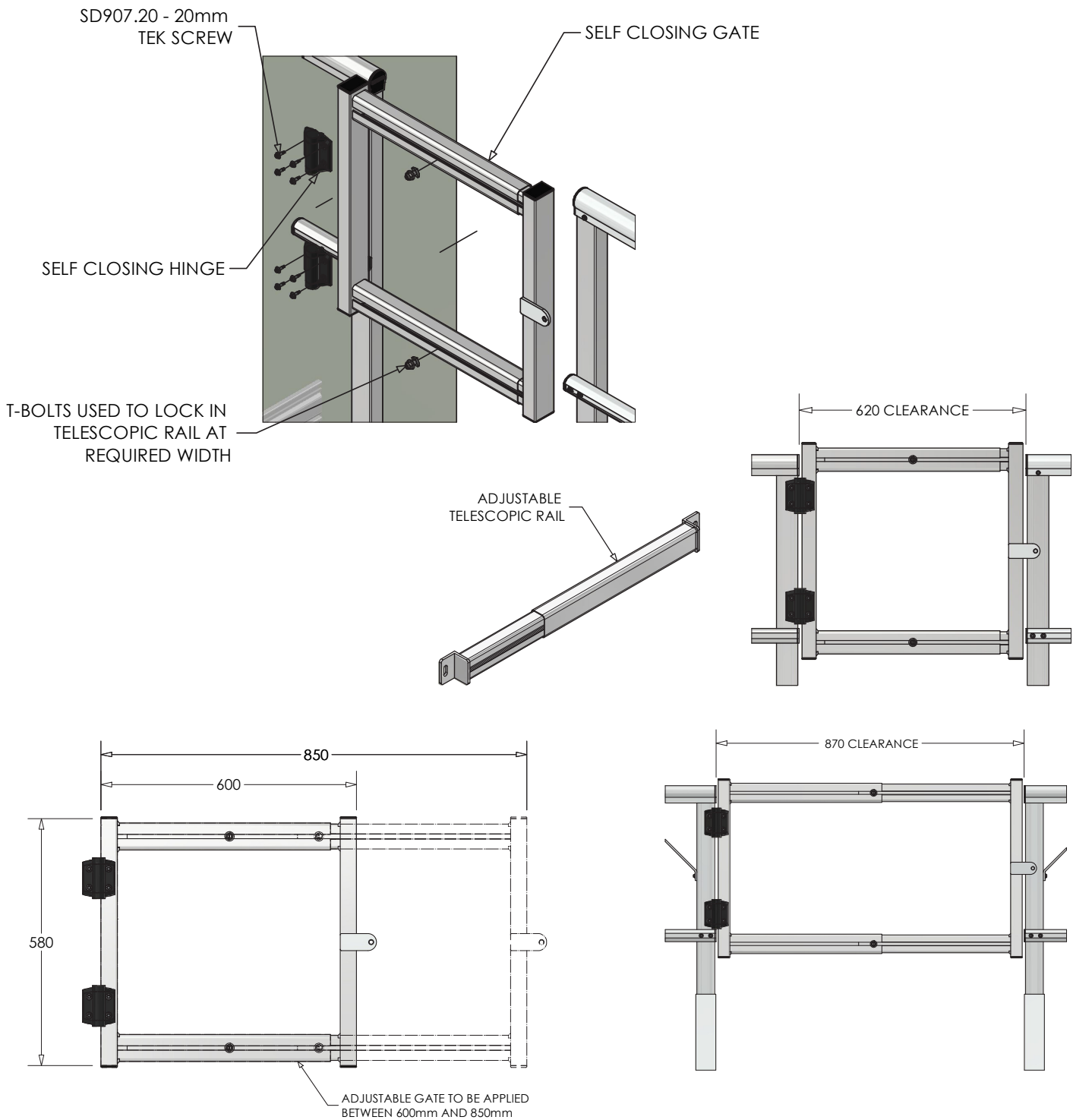


Corner details

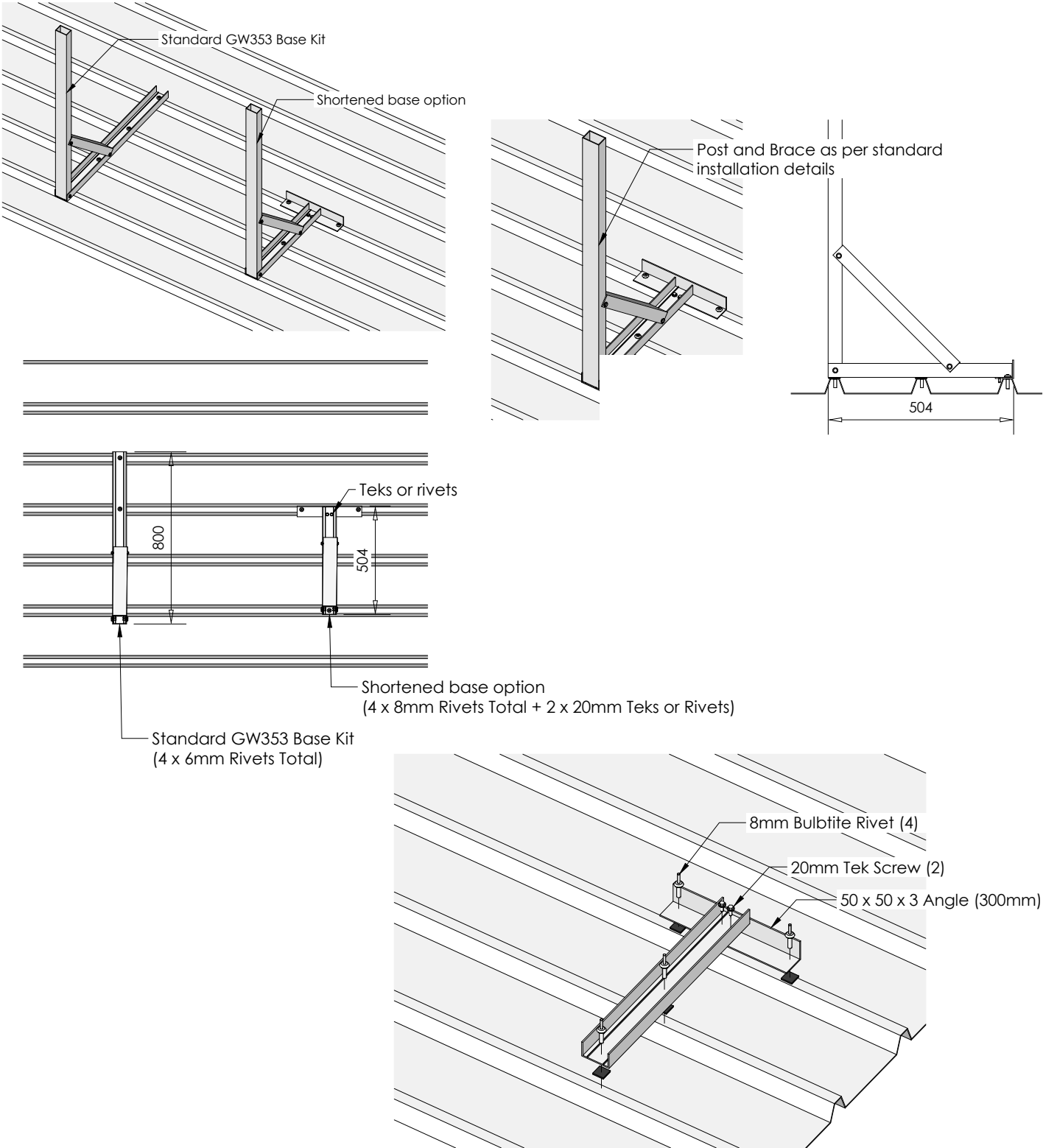


Adjustable self closing gate installation

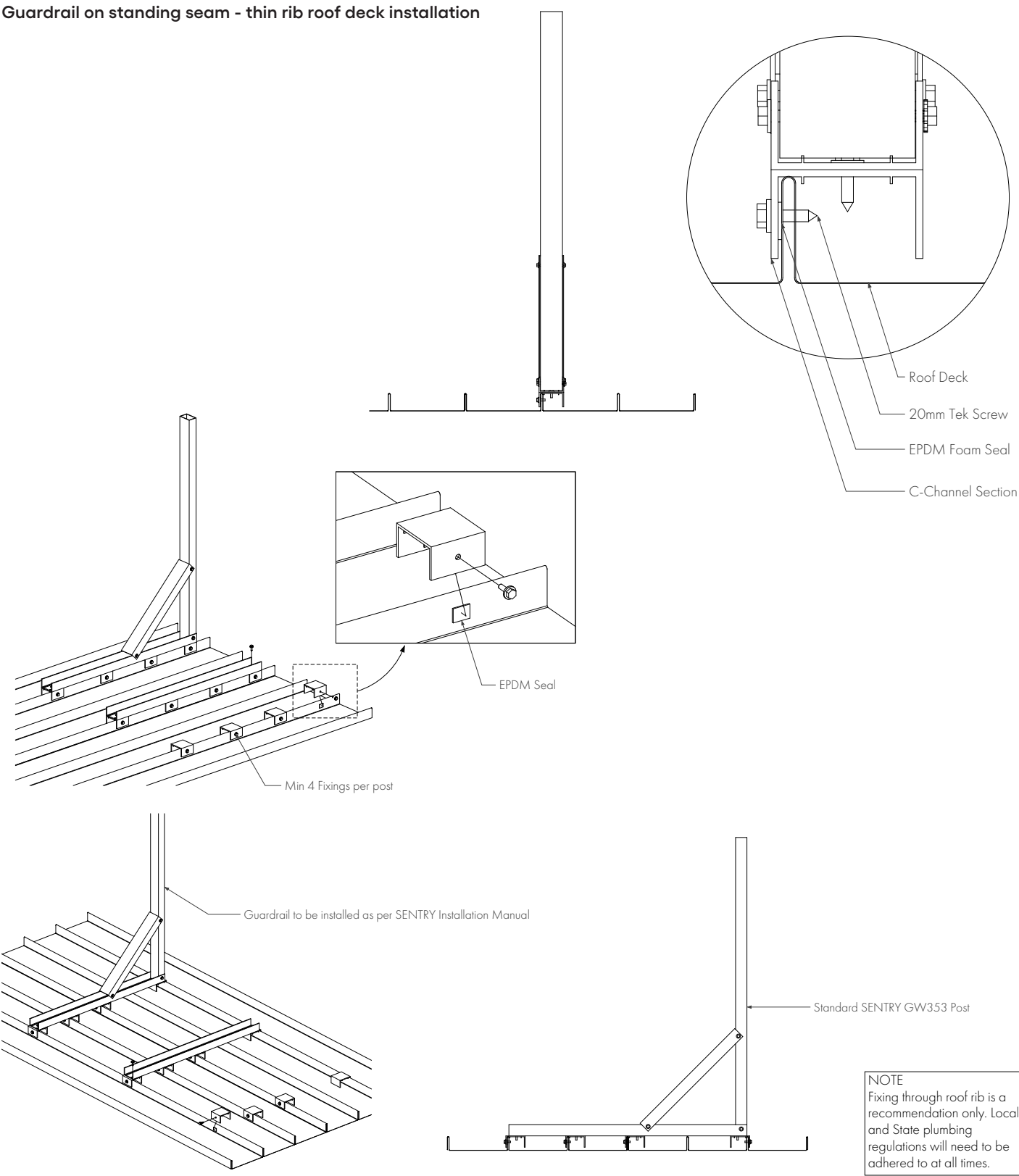
WARNING! Always mount the Self Closing Gate to open towards the safe zone.



Guardrail with shortened base installation



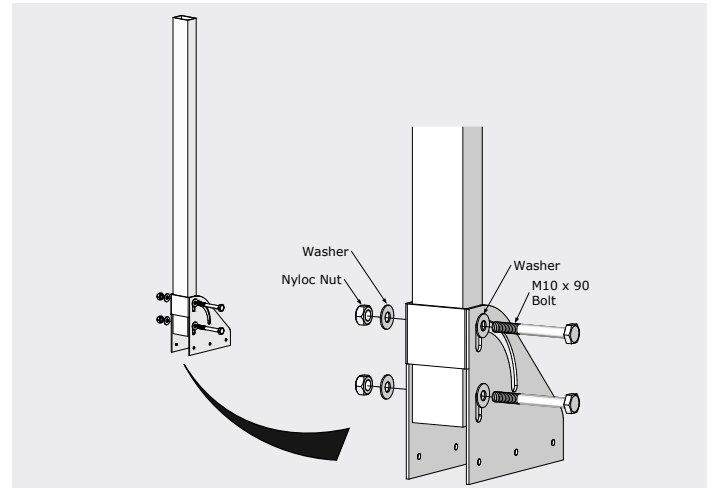
Guardrail on standing seam - thin rib roof deck installation



FOLD DOWN GUARDRAIL INSTALLATION PROCEDURE


Step 1: Post and bracket installation

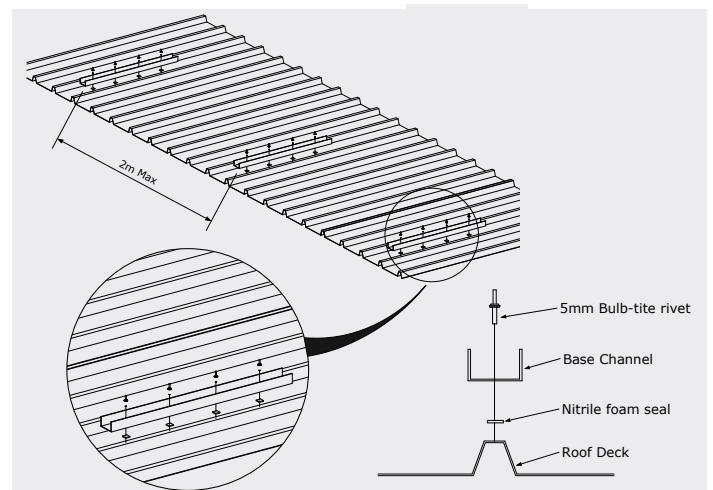
- Insert M10 x 90mm SS Bolt, 2 washers and 2 nyloc nuts.
- When doing up the nut, the nut must not be tight on the bracket.
- Allow approx 1mm gap to allow post to move.



Step 2: Set out base channels

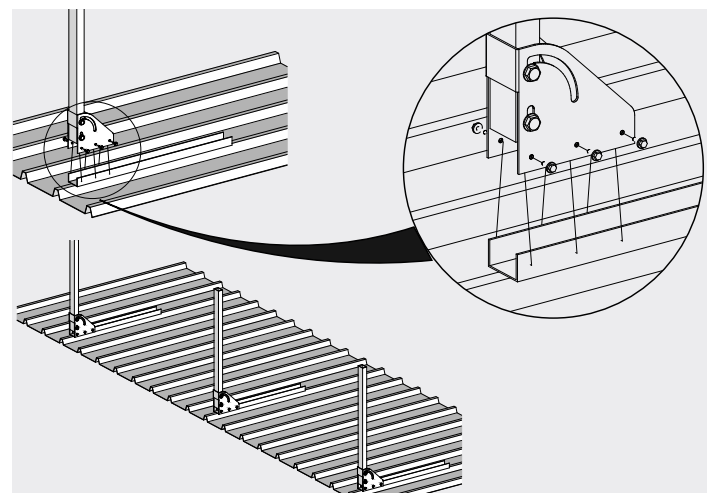
- Base channels must be set out at no more than 2000mm apart.
- Drill out base channel (4 x 6mm holes).
- Fix base channels to roof deck with 4 x 5mm bulb-tite rivets.

 It is very important to ensure these channels are in line with each other and that the roof deck is in line. (if not, this will cause problems with the folding mechanism)



Step 3: Assemble the post/bracket to the base channel

- Fix the bracket to the channel using 6 x 20mm tek screws.
- Ensure the post is vertical before fixing off completely.

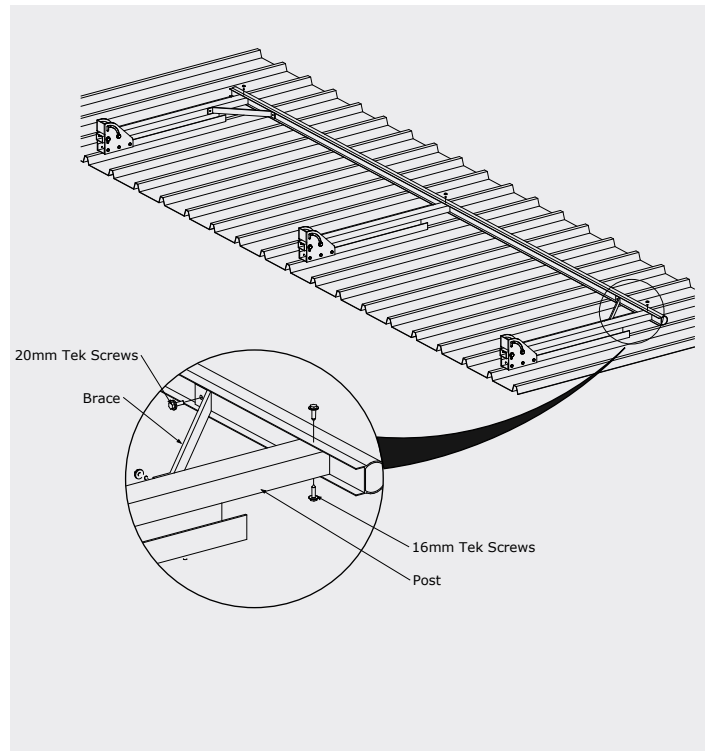


Step 4: Assemble the handrail to the posts

Fold the posts to the 'down' position. Attach the handrail to the posts using 2 x wafer tek screws per post.

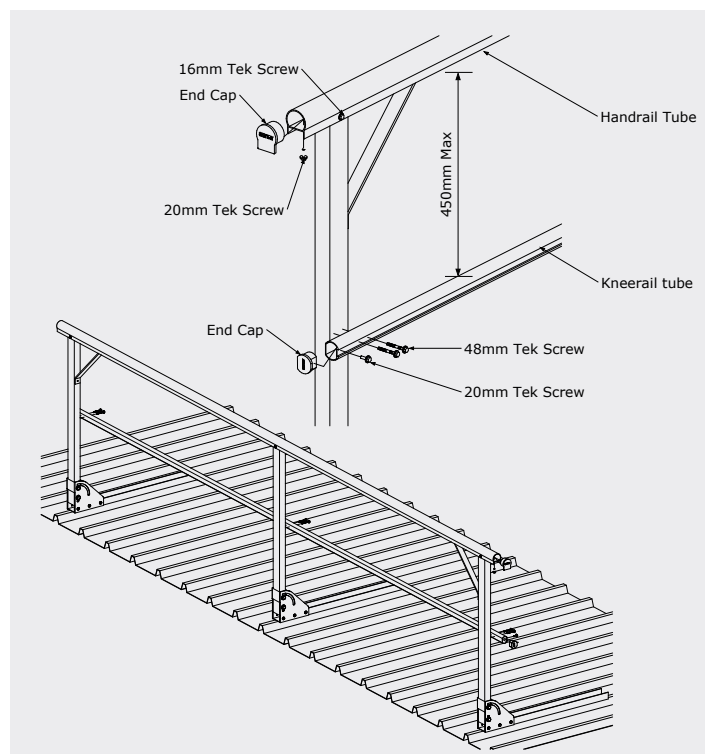


It is important to fold the posts down before attaching handrail to ensure correct alignment of the posts when folding the system down.

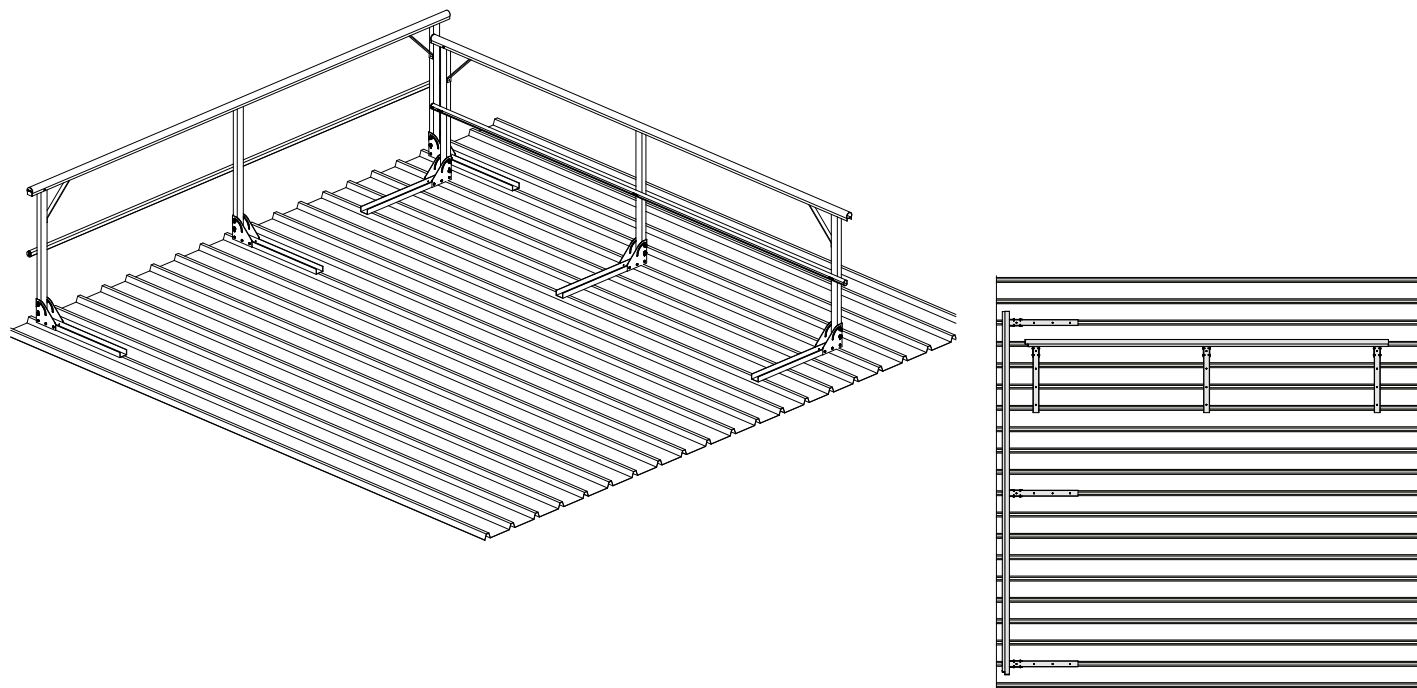


Step 5: Attach kneerail and end caps

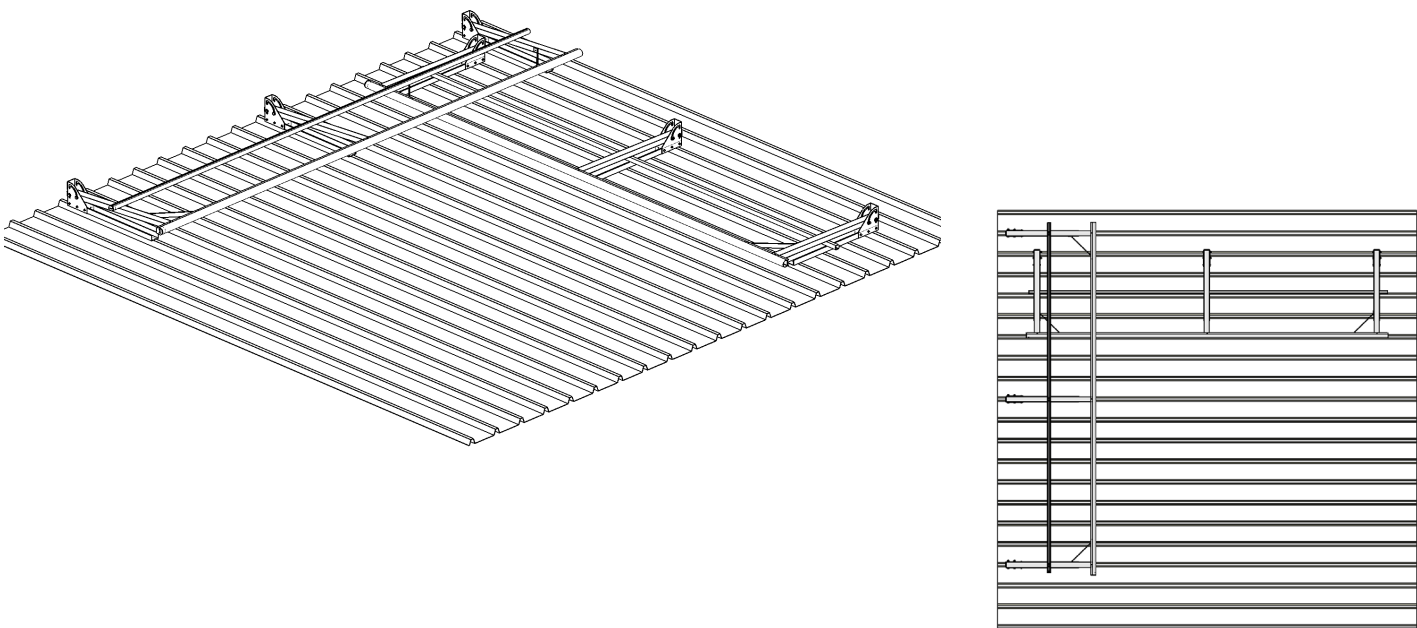
- The system can now be folded up and the kneerail can be attached using 2 x 48mm tek screws per post.
- The kneerail must not be more than 450mm from handrail.
- Fix end caps to handrail and kneerail.



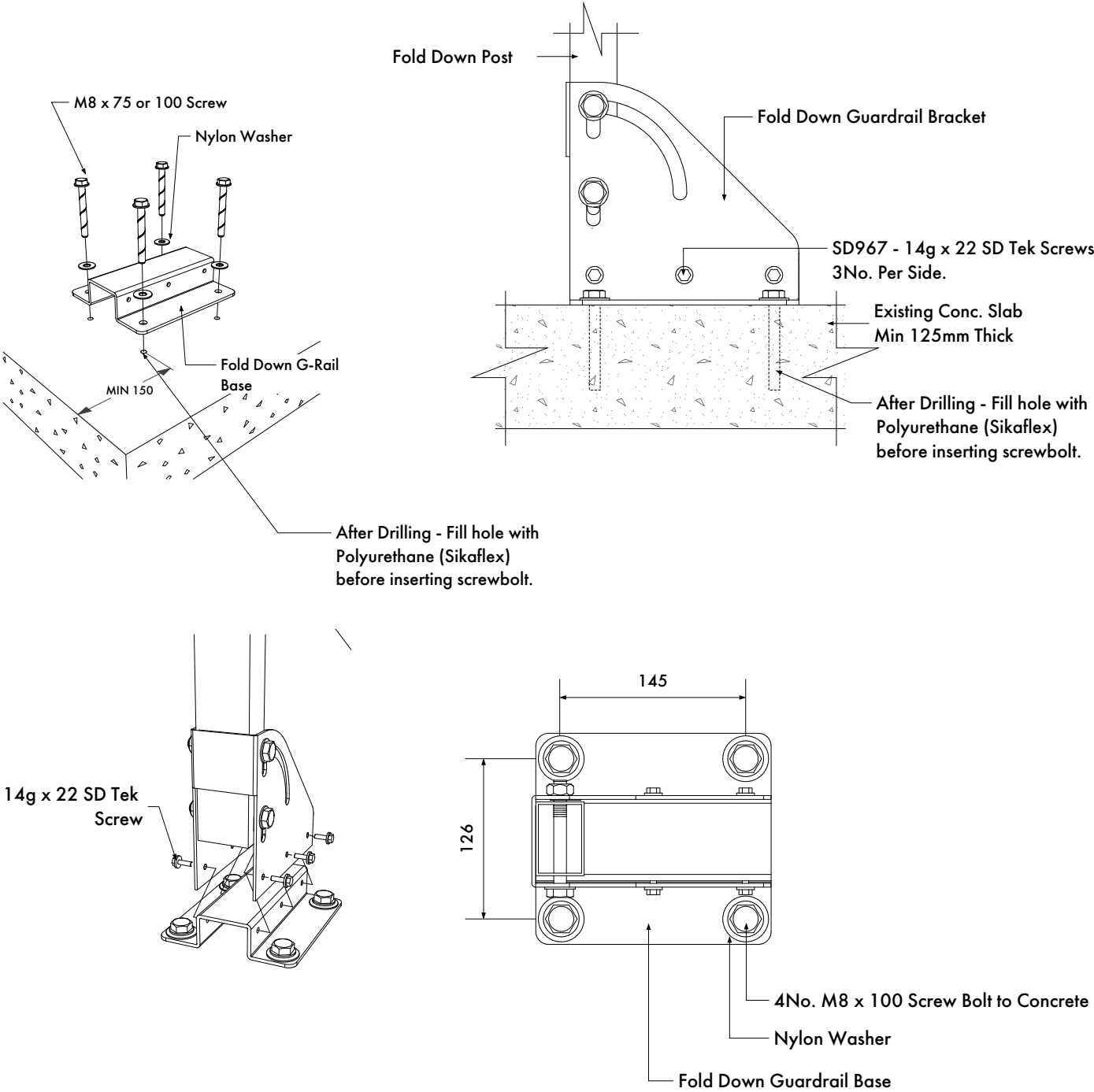
Corner installation details - upright



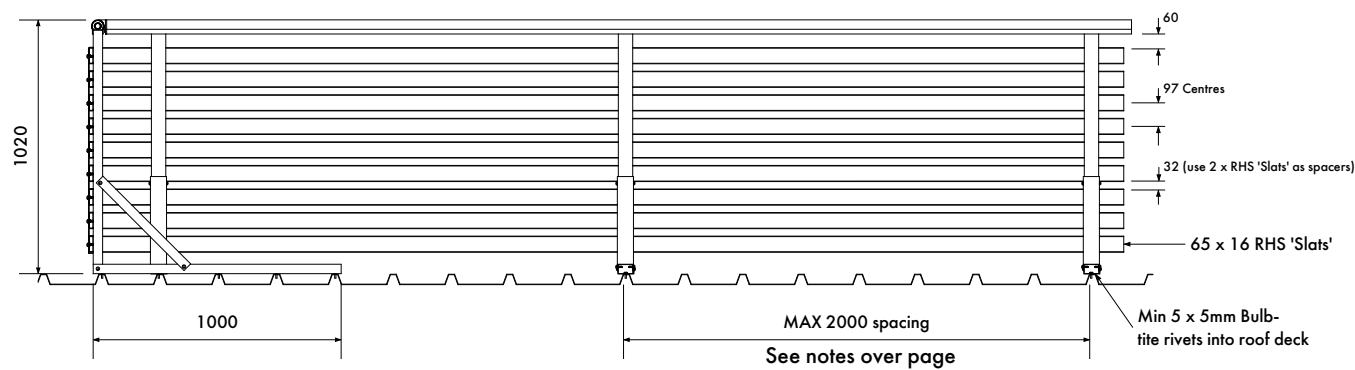
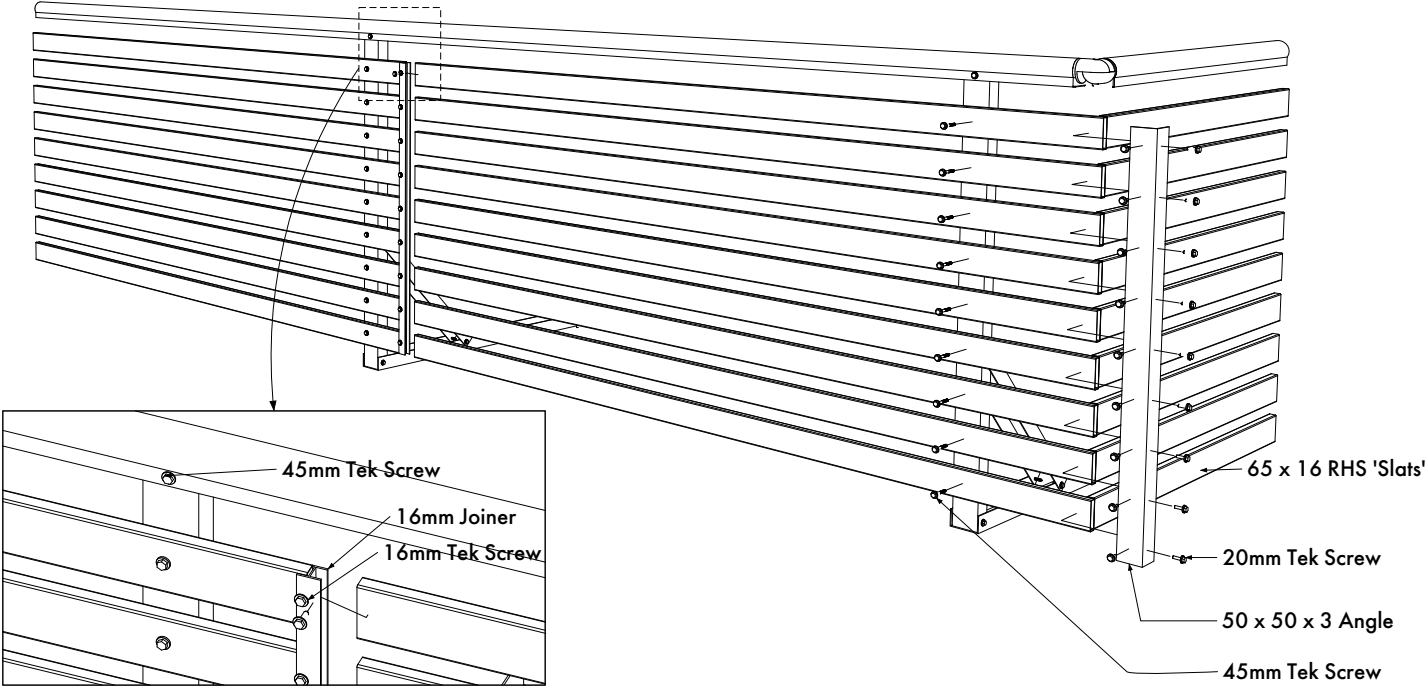
Corner installation details - folded down



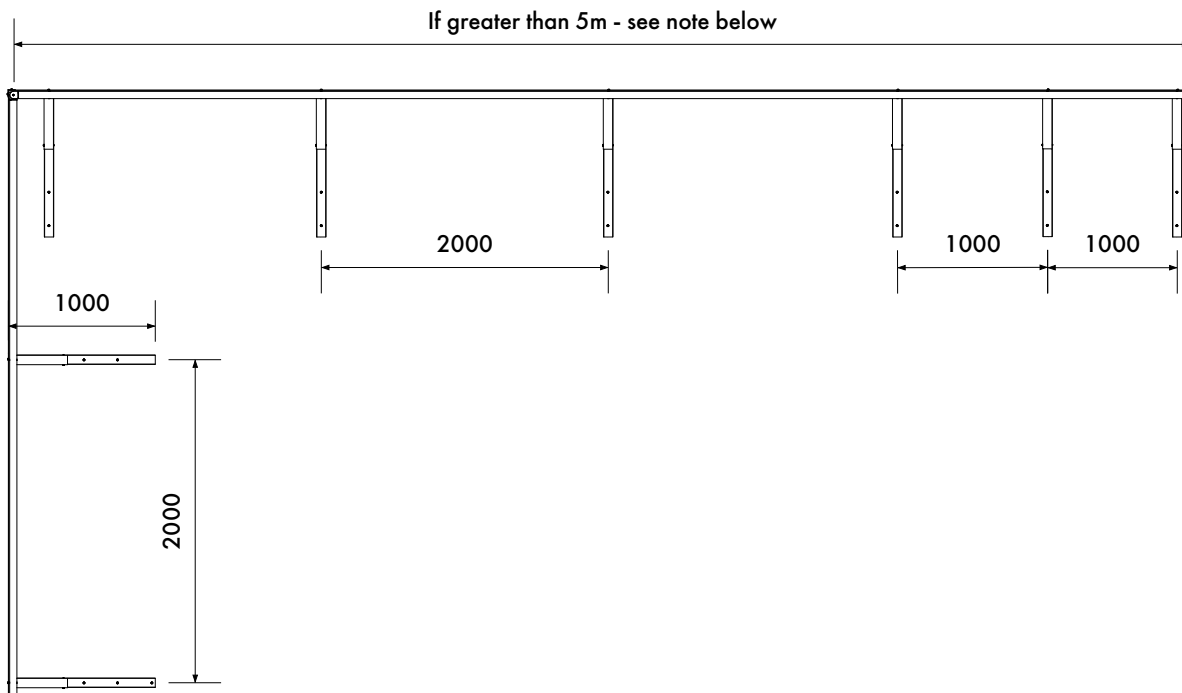
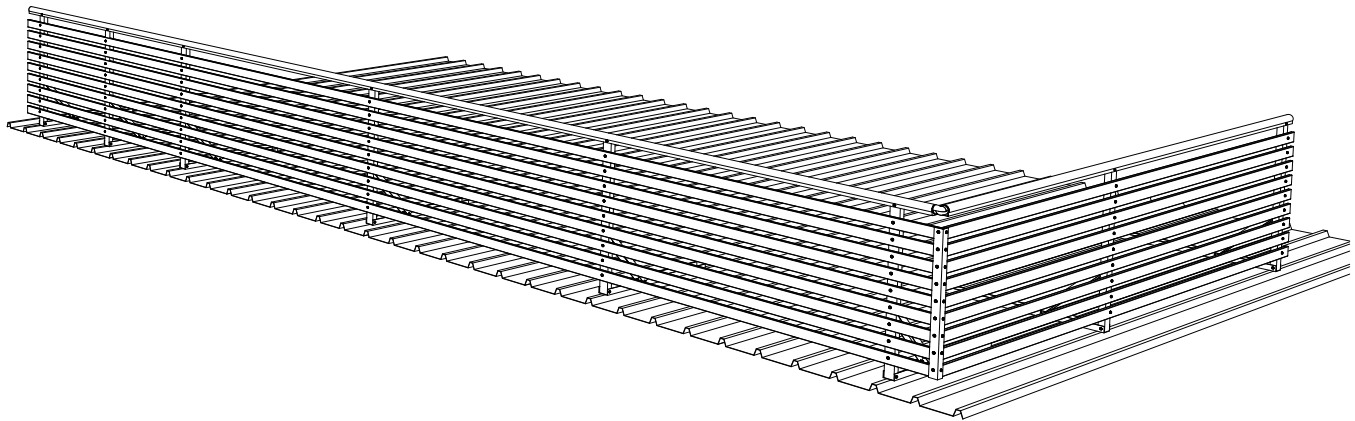
Concrete installation details



SLATTED GUARDRAIL INSTALLATION PROCEDURE



Bracing and spacing



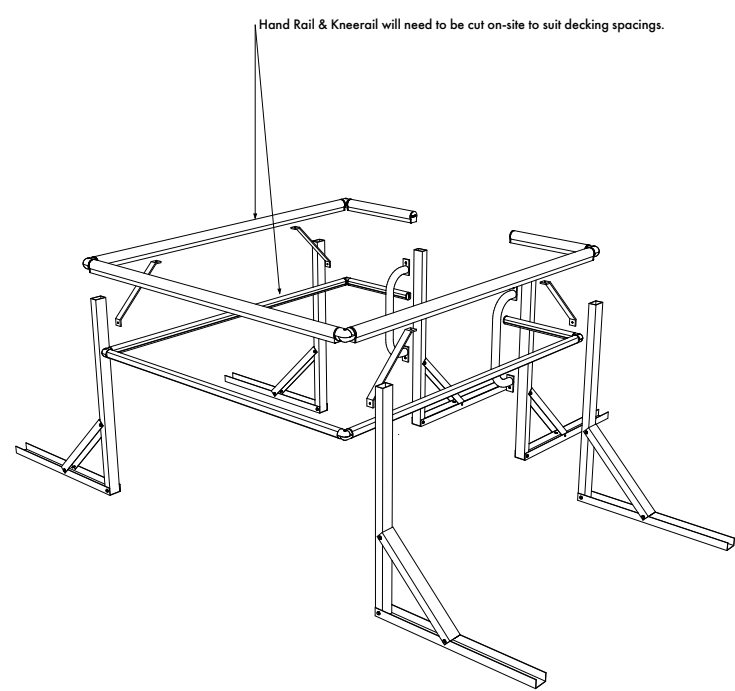
Wind loads

Kattsafe guardrail and walkway has been engineered for wind speeds of up to 44m/s. For guardrail longer than 5m, the first 2m from each end requires stanchions to be at 1000mm centres.

ROOF ACCESS HATCH GUARDRAIL KIT

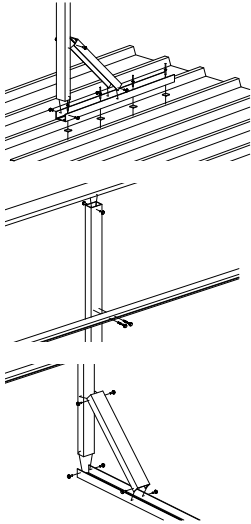
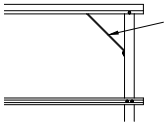
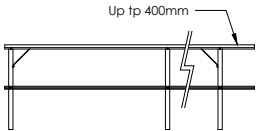
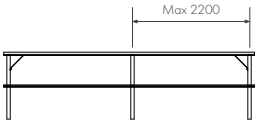
INSTALLATION PROCEDURE

Components



Code	Component	Qty
GW353	Single Guardrail Post Kit	6
LD415	Vertical Handrail (Custom)	2
GW384	Handrail Support Brace	4
GW374.1800	Handrail - 1800mm	3
GW375.1800	Kneerail - 1800mm	3
GW374.600	Handrail - 600mm	2
GW375.600	Kneerail - 600mm	2
GW382	Handrail elbow	4
GW383	Kneerail elbow	4
GW378	Handrail end cap	2
GW379	Kneerail end cap	2
SD913	5mm bulb-tite rivet	26
SD902	Nitrile foam seal	26
SD907.20	20mm tek screw	70
SD907.48	48mm tek screw	12
SD921	Cup bolt - M8 x 55SS	4
SD911	Wafer tek screw	12

INSTALLATION CRITERIA

Component	Installation criteria	
Fixings 	Ensure there is 4 x 5mm bulb-tite rivets or 3 x 8mm bulb-tite rivets for any guardrail channel fixed to the roof deck.	
	Minimum two fixings to handrail.	
	Minimum two fixings to kneerail.	
	Minimum two fixings for each connection point.	
Bracing		Minimum 2 braces required for every straight length of guardrail. (Roof deck mounted systems only)
Overhang		Only 300 - 400mm post overhang.
Post spacing		Posts spaced at 2000mm or 2200mm if there are multiple spans.

SYSTEM MAINTENANCE

Must be read prior to checklist


1. Kattsafe guardrail needs to be checked and recertified by a competent height safety inspector every 3 years for non corrosive environments or 12 monthly for corrosive or harsh environments. (To be determined by specialist depending on severity of surrounding conditions.)
2. Never clean using acids or other chemicals that could damage the system components.
3. Fixing and support structure attachment must be checked by competent person. Any signs of distortion or excessive load to the guardrail system must be inspected and recertified by competent person.
4. The identification label must be completed confirming certification, maintenance and recertification of the system.
5. Any deterioration or damage to the system or equipment must be reported to person in control of the workplace.

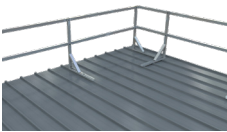
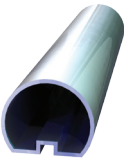
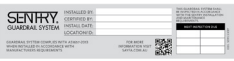
MAINTENANCE CHECKLIST

The checklist below outlines key checking criteria required to ensure the safe use of this system. Any item of concern not shown on the checklist must be noted on the maintenance report and brought to the attention of the workplace manager.

Items ticked PASS - YES means they conform with the required checking criteria and are suitable for normal use until the next recertification date. System data plates must be updated showing current check date and next check date.

Item ticked PASS - NO means they do not conform to the required checking criteria. These items must be clearly tagged 'Do Not Use' and the required corrective actions put in place. The maintenance report must clearly document all non-conforming criteria.

 **This system must be maintained by a competent height safety inspector trained in the safe use and maintenance of this system.**

Component	Inspection criteria	Pass Y/N	Corrective action	Completion date
<div>Guardrail and handrail</div>  	No signs of guardrail deformation or damage in posts or rails.			
	Handrail posts to structure secure.			
	Handrail and kneerail to post secure.			
	Splice join connection between rails secure.			
<div>Data label</div> 	System data label attached and clearly visible - All data filled out including last and next maintenance date.			

TECHNICAL SPECIFICATION

Guardrail

Kattsafe guardrail for fall protection and safe access at heights. System design, supply, layout, installation and certification by a Kattsafe approved installer, as per the manufacturer's installation instructions and current standards.

Materials

- Post assemblies, hand and kneerails: extruded high grade structural (6106/T6) aluminium with options for powder coating.
- Universal elbows and end caps: die cast aluminium

Dimensions

- Handrail component: 50mm diameter section mounted 900mm to 1100mm above floor surface
- Kneerail component: 40mm diameter section mounted 450mm below handrail
- Post component: 60mm x 40mm RHS section, post length 950mm to 1100mm above floor surface

Weight

2kg/m aprox.

Fixings (refer to installation manual)

- Metal fixing: M12 bolt set
- Concrete fixing (min 25 MPA): M12 / 85mm mechanical concrete anchor
- Metal roof deck fixing (min 0.42 BMT): 5mm construction grade bulb type rivets
- Handrail to post fixing: 12-14 / 20mm tek screw
- Kneerail to post fixing: 12-14 / 50mm tek screw

Rating

1200N applied horizontally mid span between posts of 2.0m spacing.

Compliance

Kattsafe guardrail is designed and manufactured to conform with Australian Standards AS 1657:2018 / AS/NZS 1892:1996 and relevant statutory OHS Codes of Practice/Guidelines.

Testing

- Testing and performance based on requirements of Australian Standard AS 1657:2018.
- Static load tested – 1.2kN applied horizontally on handrail component mid span between posts at 2.0m spacing.

Product warranty

10 Years from date of purchase subject to correct installation. Use and maintenance to be in accordance with manufacturer's specifications and recommendations. (This excludes wearing parts).

Inspection and maintenance

Visual inspection for any damage or loose fixings must be done periodically and prior to use. Basic wear and tear preventative maintenance is recommended, as per manufacturer's specifications and recommendations.

Important note

- Failure to supply and/or install proprietary product in accordance with above standards and codes, specifications and instructions voids complete system certification and/or warranty.
- Post spacing: maximum 2.2m intervals

WARRANTY INFORMATION

Warranty period on this system:
10 years from date of purchase

Should you have a warranty claim as a result of a defect the following procedure must be followed:

Identify the following information:

- The product/system name and code number.
- The date of purchase/installation.
- Installation company details.
- The installation identification number.
- The name of the company using this system.
- A description of the defect/warranty claim.
- The periodic system maintenance report.

Forward the above information to sales@kattsafe.com.au or contact technical helpline, 1300 301 755.

Terms and conditions

All warranty claims must be made in writing within 14 days of the appearance of the defect.

Incorrect installation or work done by a non accredited Kattsafe system installer will void all warranty rights.

Systems that have been installed using non proprietary equipment will void all warranties.

System roof/cladding and concrete penetration seals are not covered in this warranty.

Systems/components that have not been maintained in accordance with manufacturer's/legislative requirements will void warranty.

Systems used by incompetent persons or use with non compatible accessories ie. harness gear, lanyards, travellers, fall arrestors etc. will void warranty.

Systems/components used for purposes other than their intended use will void warranty.

General wear and tear is expected and will depend on the frequency of use and is not covered by warranty.



Product brochure
Guardrail and walkway



Installation manual
Guardrail



Installation manual
Walkway



QMS Certification
ISO 9001:2015

Find all related products and resources on our website.
kattsafe.com.au

Kattsafe

Height access
and fall protection

1029 Mountain Highway
Boronia Victoria 3155
Australia

1300 301 755
sales@kattsafe.com.au
kattsafe.com.au