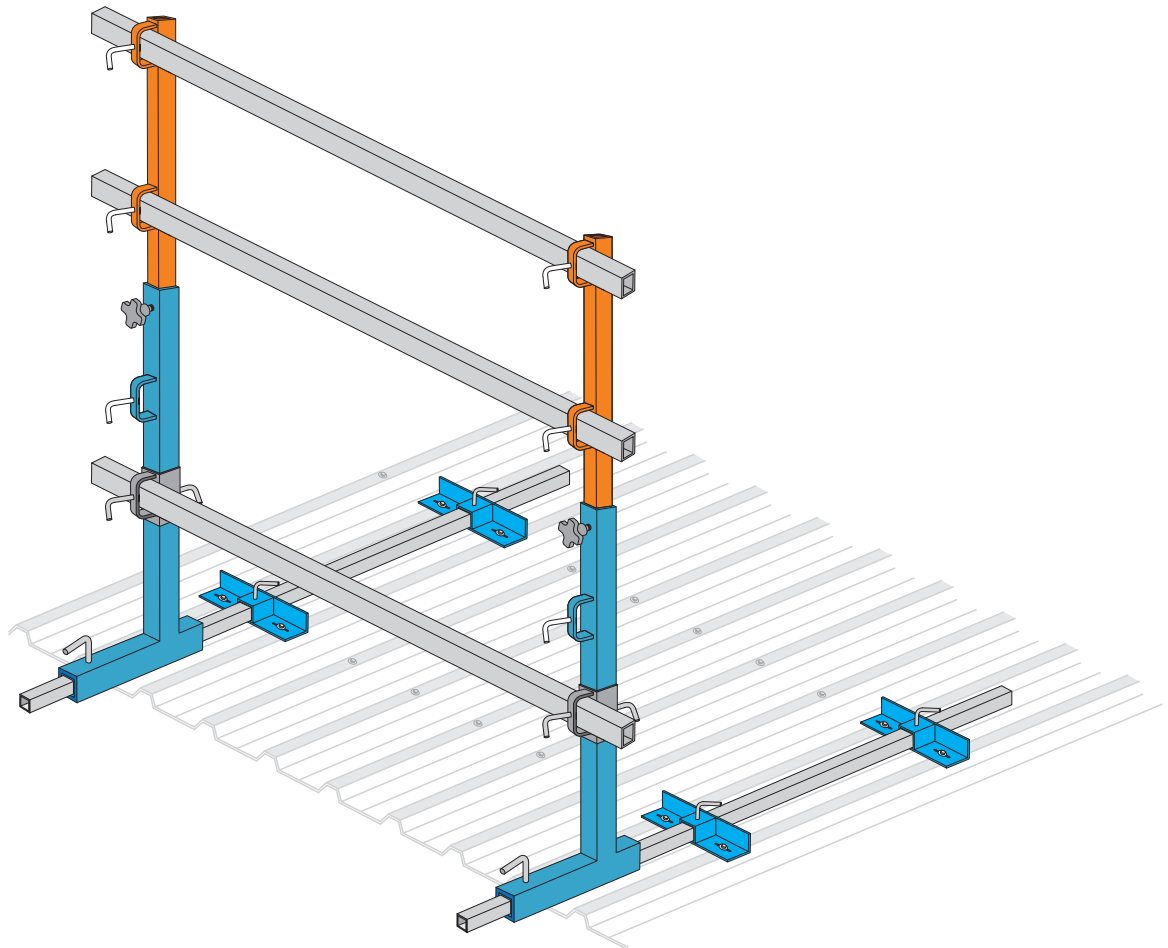


Revised July 2022

Roof Mounted Handrail Systems Screw Down Installation Guide



Compliance Testing to
AS 1657-1992 and AS/NZS 4994.1:2009

Introduction

The Victorian occupational health and safety act 2004 requires for all people and organizations to ensure a safe and healthy work environment. The Occupational Health and safety prevention of falls compliance code that was updated in Dec 2019, provides practical guidance to all duty holders relating to fall hazards associated with construction work and requires all duty holders to identify all risks that involve the possibility of someone falling more than 2 metres and eliminate all such hazards ,so far as is reasonably practical.

It is also noted in the code that a fall from almost any height including falls from below 2m can result in serious injury or death. It is possible that a number of factors can combine to create a dangerous situation making the hazard identification and risk assessment process essential for work at any height.

An employer's primary duty of care is to eliminate the risk of injury to an employee. The best way of achieving this is before work commences, identifying potential risks and applying risk control measures as set out in the hierarchy of control matrix of the prevention of falls compliance code.

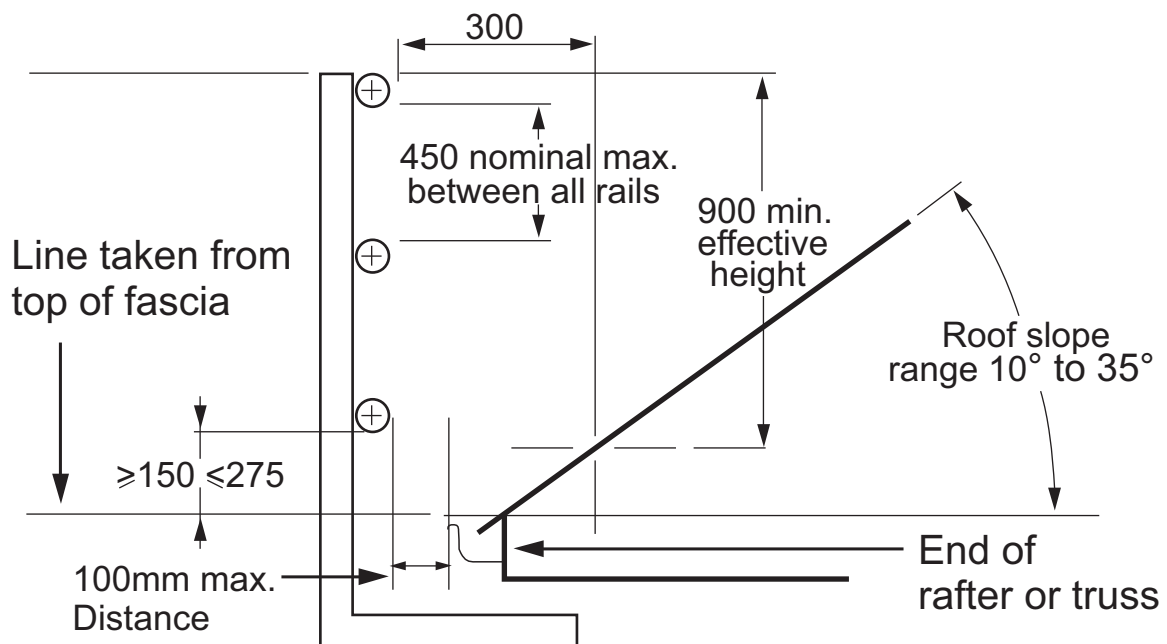
The use of perimeter guardrail is in the second highest control measure available, along with safety mesh and elevated work platforms. Only the possibility of carrying out work on the ground rates higher in the hierarchy than using a perimeter guardrail system. The Aldeck handrail system can be used pre, during or post construction to minimize the risk of people falling from height. The Aldeck handrail system is fully tested and complies with AS 1657-1992 and AS/NZS 4994.1:2009

- The Aldeck handrail system should be erected and dismantled in accordance with legislation under the OH&S act. A thorough risk assessment should be conducted and a safe work procedure applied prior to any work taking place.
- The handrail system should only be installed, modified or dismantled by a component person, who has read and comprehended the installation guide relevant to the Aldeck hand rail system that they intend to install or dismantle.
- Posts to be installed at a maximum of 3 metres apart
Handrail heights are dictated by the Australian standard and are dependent on the roof pitch
Roof pitches from the horizontal
 - 0 to 10 degrees handrail need to be not less than 900mm high
 - 10 to 35 degrees, the top rail shall be located at an effective height of not less than 900mm Above the point where a person could stand inside and adjacent to the edge protection on the sloping roof. This shall be not less than 300mm from the back of the fascia or outer edge of the truss or rafter where there is no fascia.
 - Where mid rails are used, the nominal clear distance between rails shall not exceed 450mm. The nominal clear distance between a mid-rail and a toe board or bottom rail shall not exceed 275mm.
 - Rails intersecting at corners of edge protection shall be securely connected to each other or to a post. The connection shall be one rail immediately above the other.
 - In any section of edge protection, the rails shall be nominally parallel.

Introduction cont.

- Where the slope of the roof exceeds 35 degrees, the roof according to the code of practice (prevention of falls 2019) is an inappropriate surface to stand on. Perimeter guard rails and catchment platforms are inappropriate measures to protect workers on a steeply sloping roof. In these circumstances, roof workers need a system to prevent sliding and to prevent falls from the perimeter, comprising one or more of the following
 - Elevated work platform
 - A work positioning system, such as a travel restraint or industrial rope system
 - A scaffold platform, located at the roof edge
 - A roof ladder

FIGURE 1 EFFECTIVE HEIGHT OF A GUARDRAIL



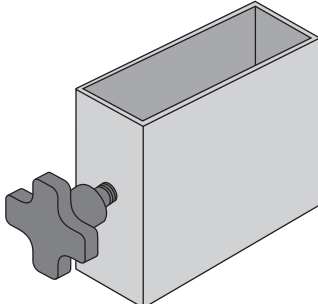
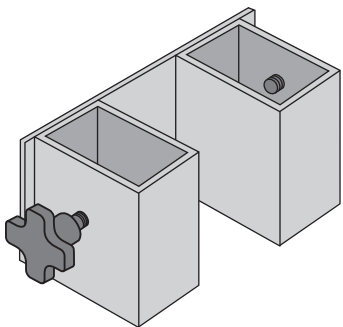
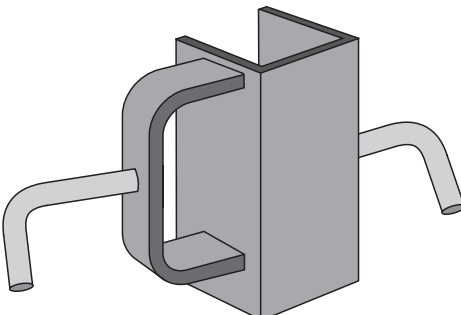
NOTE: Infill and toeboards are not shown for clarity.




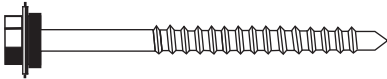

DIMENSIONS IN MILLIMETRES

IMPORTANT

It is important that the structure to which the temporary edge protection is to be attached can support the forces that may be applied when the edge protection restrains a person from falling from the edge.

Aldeck Safety Rail Components		
Part No.	Description	Picture / Diagram
1	<p>Roof Mounted Handrail System</p> <p>Application Usually used to connect directly to the roof system.</p>	
2	<p>Deck Fixing Clamp</p> <p>Application Used to secure handrail to Roof Deck. Replaces Pierced Sheet Fixing Bracket</p>	
3	<p>Pierced Sheet Fixing Bracket</p> <p>Application Used to secure handrail to Corrugated / Pierced Sheet Roof Deck.</p> <p>Fixings used: 2 of part number F1/F2 (12 X Gauge Roof Screw)</p>	
4	<p>Gable End T Bar</p> <p>Application Used to secure Roof Mounted Handrail to gable end application Refer Page 10</p>	

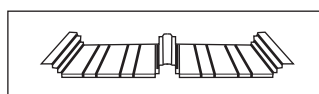
Aldeck Safety Rail Components		
Part No.	Description	Picture / Diagram
24	<p>Handrail Joiners</p> <p>Application Used to join handrail. Required every 4.6 metres</p>	
25	<p>Adjustable Handrail Corner</p> <p>Application Corners or change of direction etc</p>	
25	<p>Detachable Rail Holding Bracket</p> <p>Application For holding additional rails on the base support post</p>	

Aldeck Safety Rail Components		
Part No.	Description	Picture / Diagram
26	Handrail 2400 MM Length	 <p>Used for corners and change in direction</p>
27	Handrail 4600 MM Length	 <p>Most common rail used</p>
F 1	Screw 12 Gauge Steel Steel 35 mm or 45 mm	
F 2	Screw 12 Gauge Timber Timber 50mm or 65 mm	
F 3	Screw 12 Gauge Concrete Concrete 6.5mm x 55mm Confixx Concrete Screws	 <p>Use of 5mm Masonry Drill Needed to Install these screws</p>

Aldeck | Clip Deck Type Roof

If using a clip deck style roof sheet (as per Figure 4 below) deck fixing clamps (part Number 2) will be required to secure the post leg to the rib of the roof sheet. (Refer to Clamp on Installation Guide for this application).

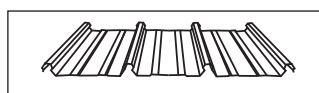
FIGURE 4



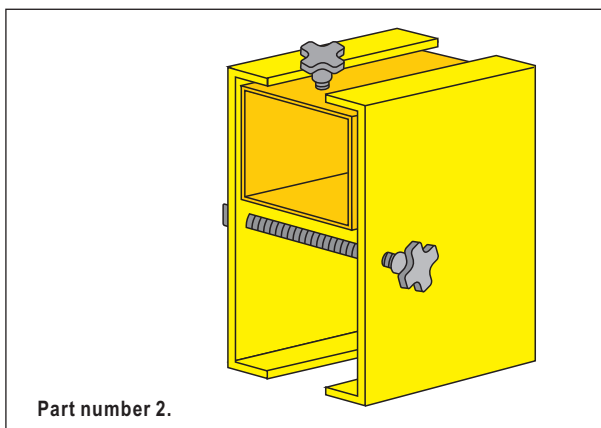
Klip-Lok HI-TEN



King Clip



Speed Deck Ultra



Part number 2.

Aldeck | Pierce Fixed Roof Sheets

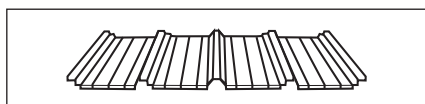
If using a pierce fixed roof sheet such as corrugated iron or Trimdeck, a Pierce Sheet Fixing Bracket (Part number 3) is used to secure the handrail system to the roof sheet.

Suitable 12 gauge tek screws are used to fix the bracket which holds the handrail system in place. The screws must be fixed through the crest of the roof sheet and into the purlin below.

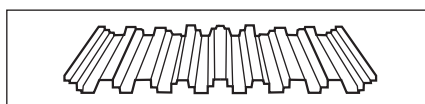
FIGURE 5



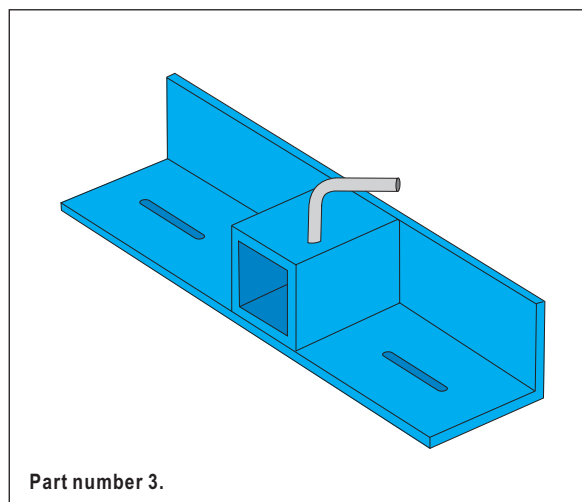
Custom ORB



Trimdeck HI-TEN



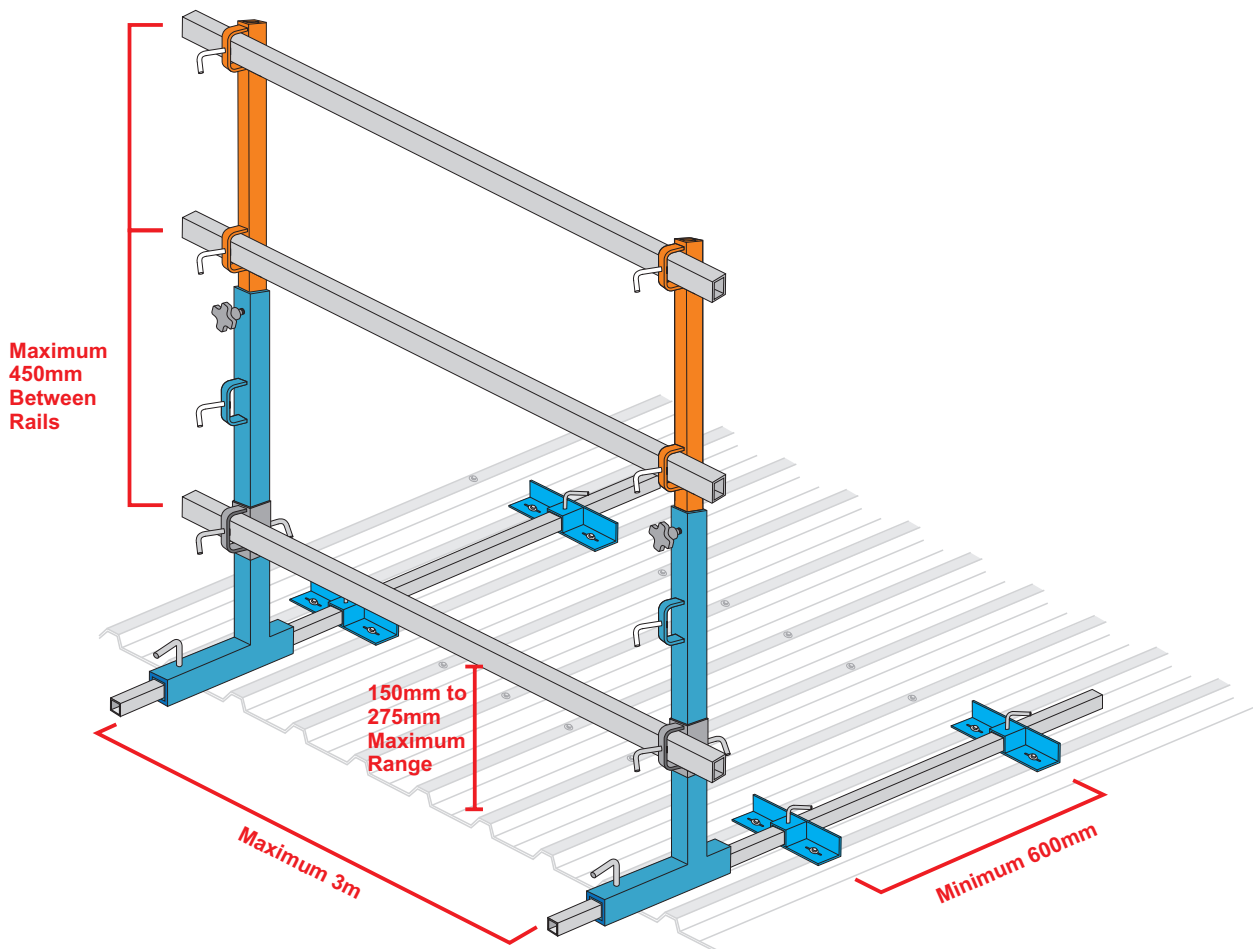
Spandek HI-TEN



Part number 3.

INSTALLATION GUIDE - Screw Down Roof Mounted System

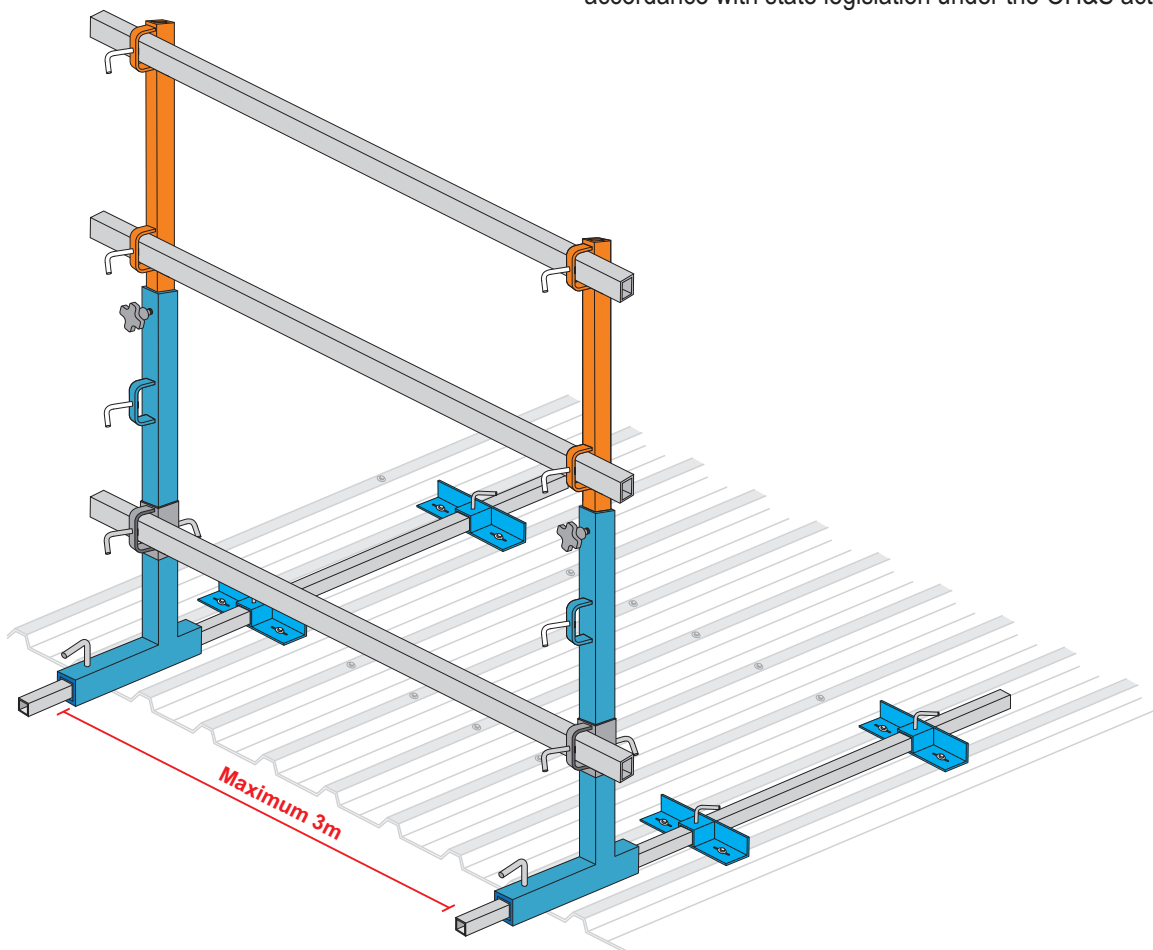
BEFORE ATTEMPTING INSTALLATION OF HANDRAIL, PLEASE
ENSURE YOU HAVE READ THE COMPLETE INSTALLATION GUIDE.



- Handrail has been tested using 1.8mm thick steel purlins.
If installing to anything less than this thickness, contact Aldeck for further advice.

Aldeck | Handrail Systems

Maximum post spacing is **3 metres**.
When installing or dismantling, this work must be in accordance with state legislation under the OH&S act.



STEP 1 Secure Pierced Sheet Fixing Brackets to Roof sheets with screws

STEP 2 Slide the support bar through the Pierced Sheet Fixing Brackets and lock into position via locking handles

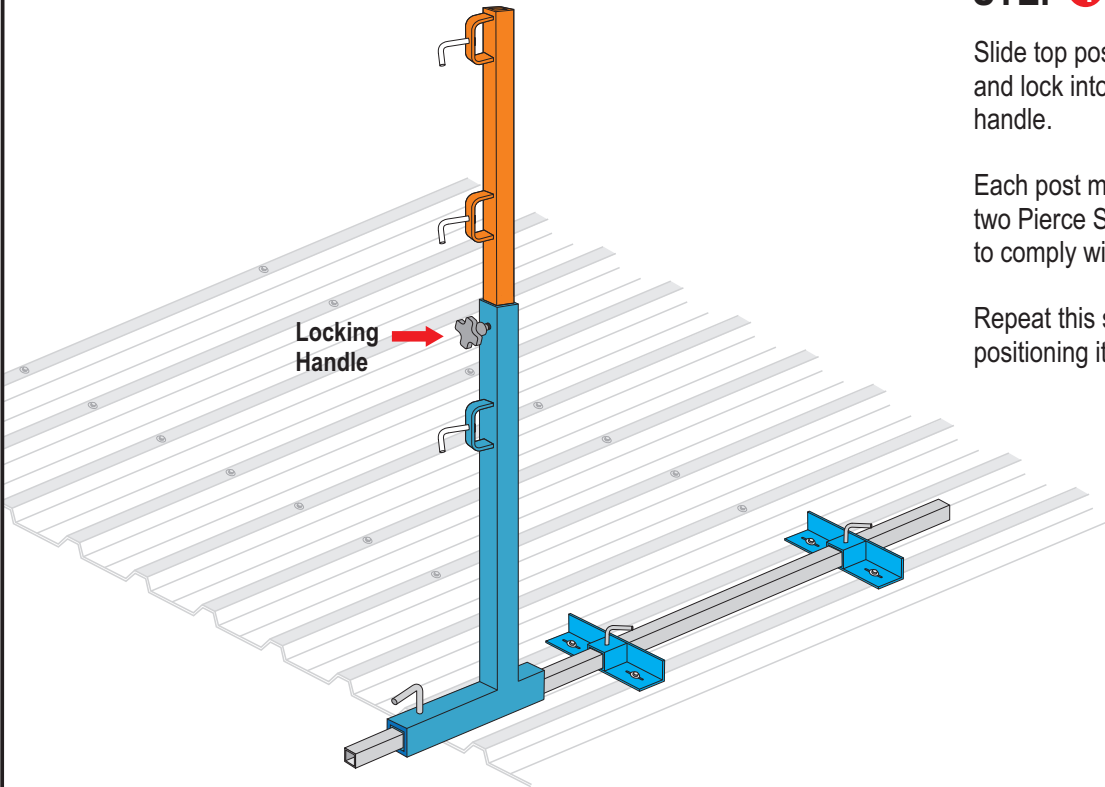
STEP 3 Slide the 90° base post on to the support bar and lock post into position via locking handle.

STEP 4

Slide top post into 90° base post and lock into position via locking handle.

Each post must be connected to two Pierce Sheet Fixing Brackets to comply with safety requirements.

Repeat this step for the next post, positioning it no more than 3m apart.

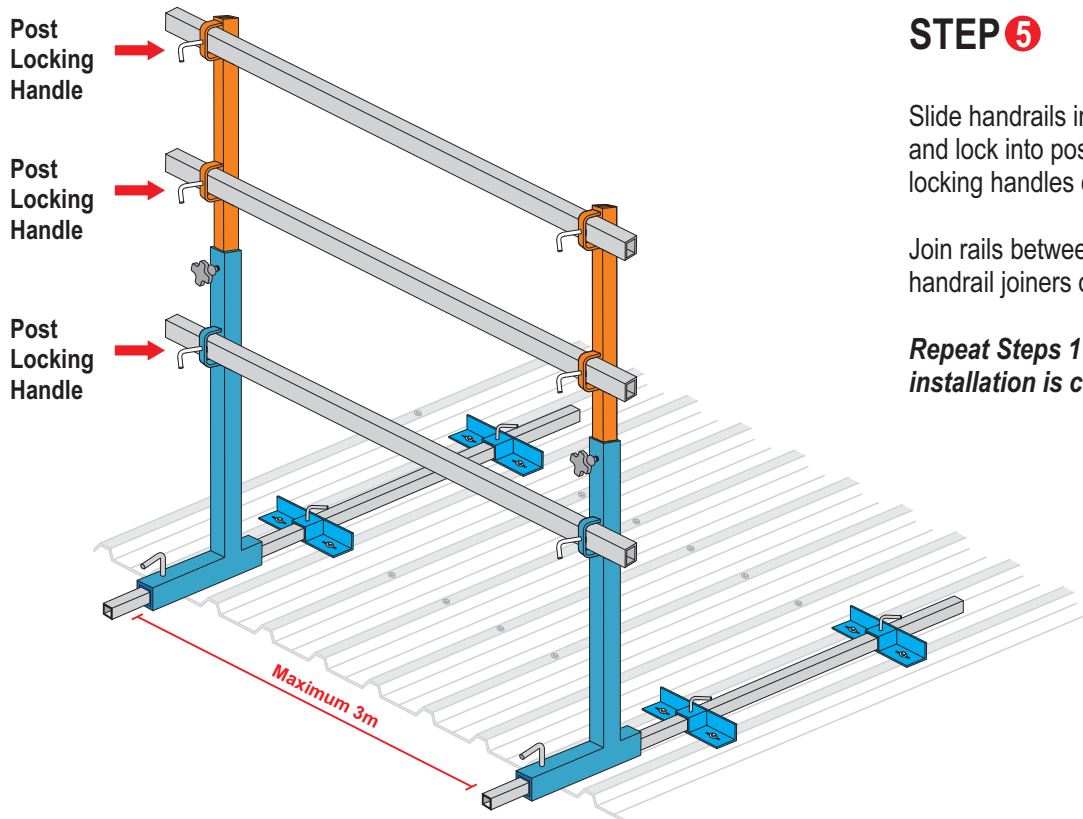


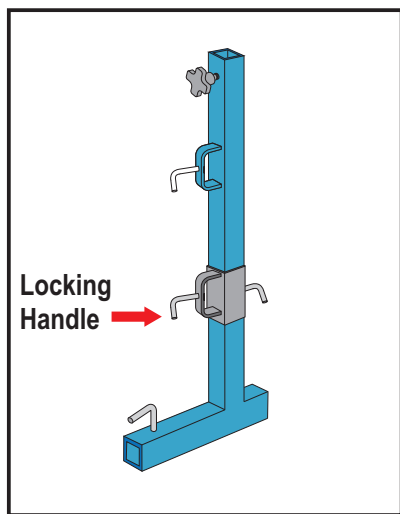
STEP 5

Slide handrails into post supports and lock into position via locking handles on posts.

Join rails between posts via use of handrail joiners or corner brackets.

Repeat Steps 1 to 5 until installation is completed.





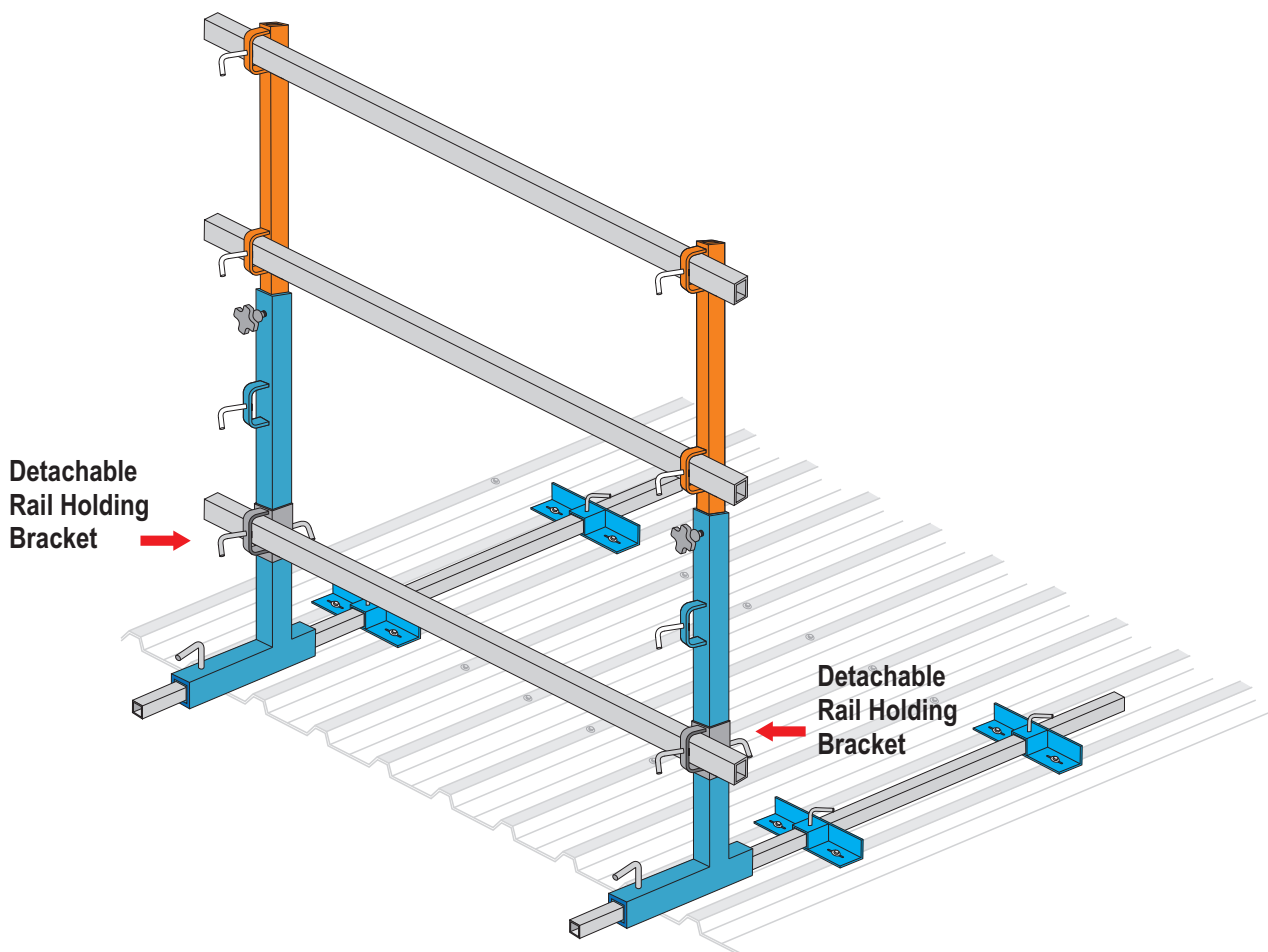
STEP 6

Add detachable rail holding bracket to base posts and lock into position via locking handles. (inset)

Slide handrails into detachable rail holding bracket and lock into position via locking handles on bracket.

Join rails between posts via use of handrail joiners or corner brackets.

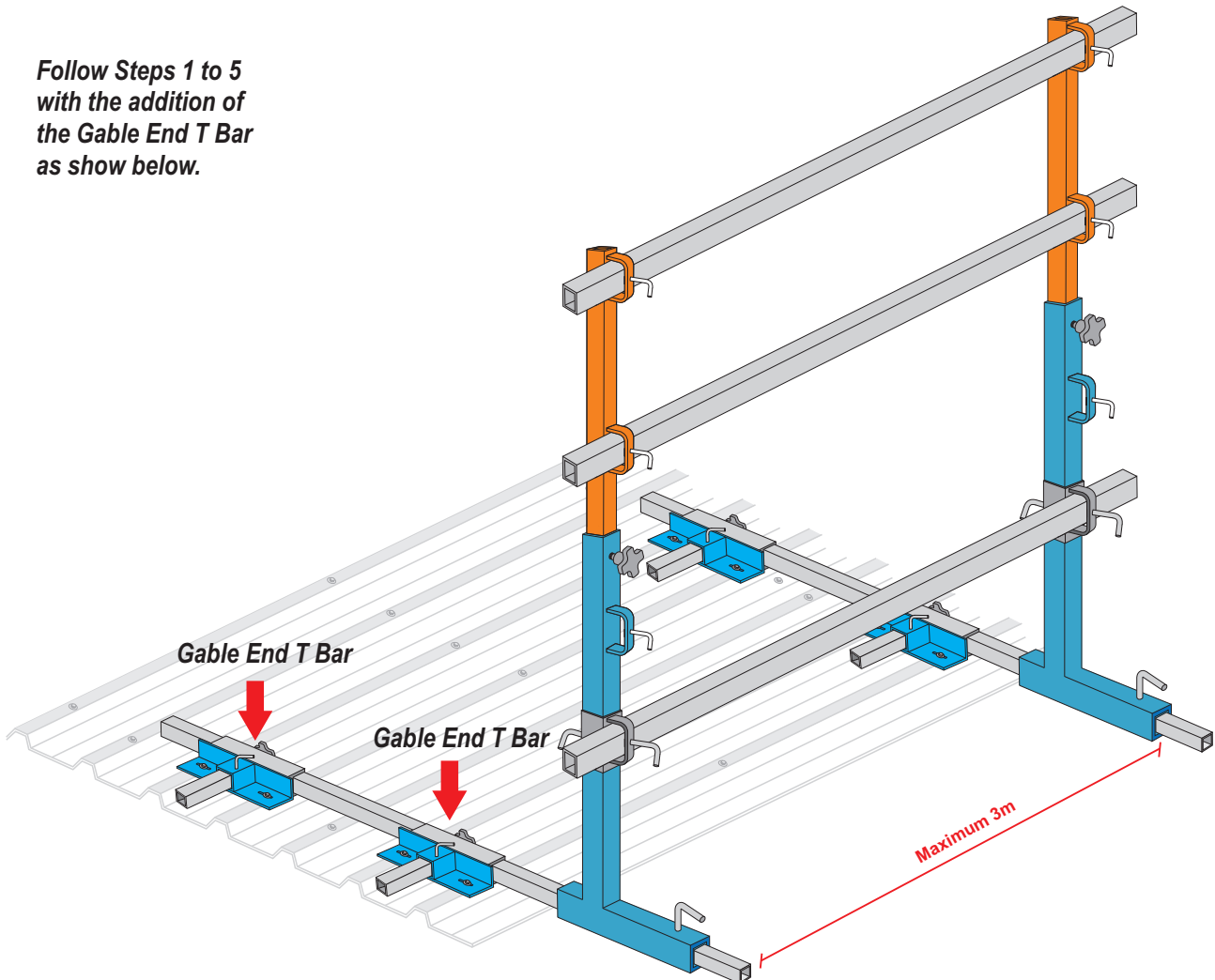
Repeat Steps 1 to 6 until installation is completed.



Gable End Application Roof Mounted System

**BEFORE ATTEMPTING INSTALLATION OF HANDRAIL, PLEASE
ENSURE YOU HAVE READ THE COMPLETE INSTALLATION GUIDE.**

Follow Steps 1 to 5
with the addition of
the Gable End T Bar
as show below.



- Handrail has been tested using 1.8mm thick steel purlins.
If installing to anything less than this thickness, contact Aldeck for further advice.