

ASCENT™ Aluminium Guardrail

For Standing Seam Roofs

Safety Fabrications has a long history of working within the construction industry developing products which create safe access on pitched and flat roofs. The guardrail for standing seam roofs is a natural extension to Safety Fabrications established Ascent product range.

Industrial Knowledge and Heritage

Safety Fabrications is based in the heartland of Sheffield's manufacturing Industry and over the past decade has developed the market leading Ascent product range. Always conscious of "miles to market" and with a philosophy of supporting local suppliers, Safety Fabrications have worked closely with them, using their experience and skills to meet the exacting time and quality standards the safety industry demands.

Design Principles

The Ascent aluminium guardrail system has been developed from the Ascent aluminium walkway range. The Guardrail system is designed specifically for use on Aluminium standing seam roofs and allows specifiers to design collective fall protection solutions safe in the knowledge that the product they are specifying is both aesthetically pleasing, compliant and does not penetrate the roof covering.



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Compliance

To ensure compliance with Construction Product Regulations 2022 the Ascent Aluminium Guardrail is manufactured in accordance with CE certification & associated Factory Production Control procedures to BS EN 1090. They are tested on Aluminium Standing Seam roofs and affixed in accordance with manufacturers recommendations. The testing is independently verified to National Annex to BS EN 1991-1-1:2002 & BS EN ISO 14122-3:2016.

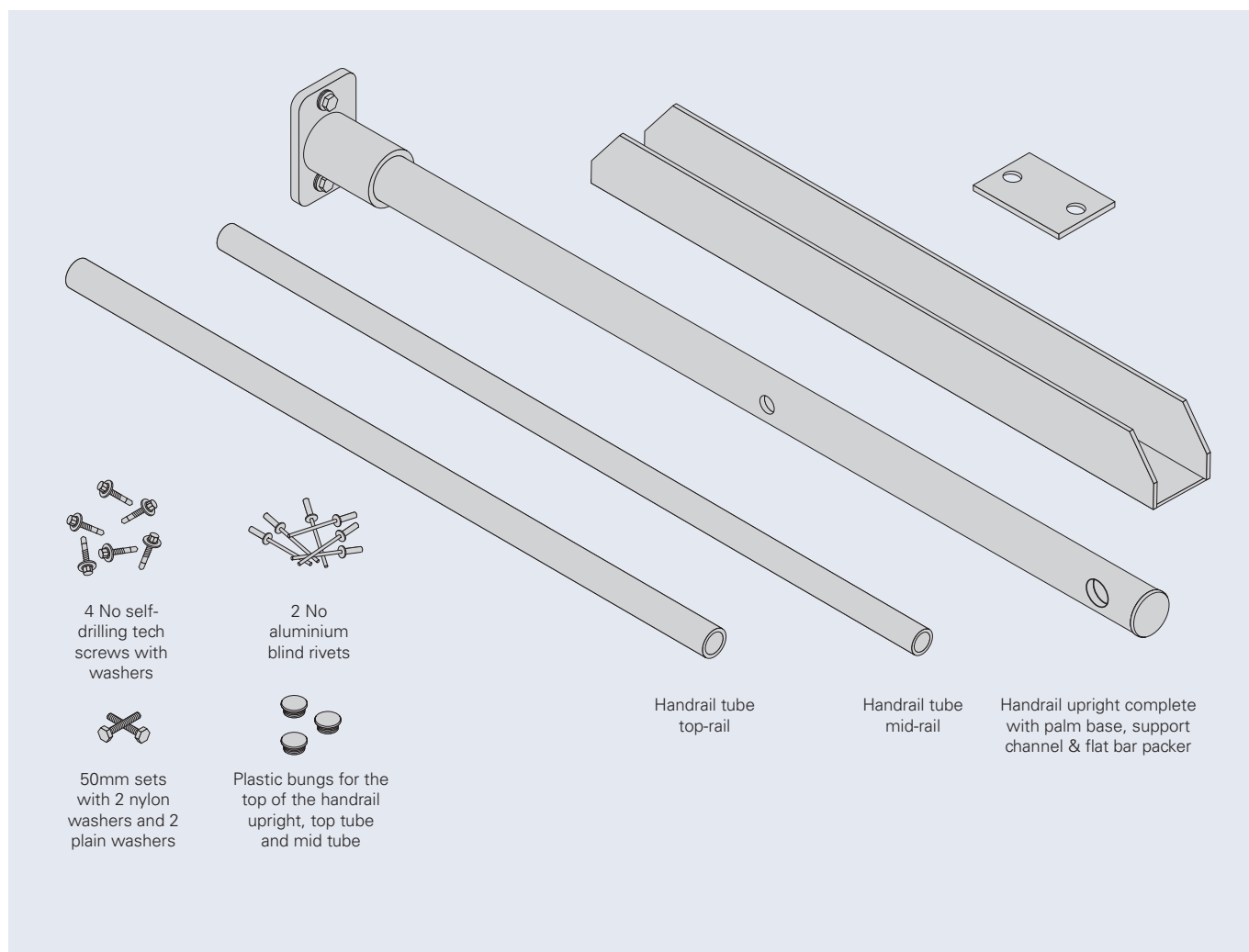
Purpose of the Document

This document is designed to show the range of products available and act as a guide to installation and specification. It will not exactly replicate your project, a general arrangement drawing is supplied for that purpose, but it will demonstrate the key issues for installing the guardrail system.

General Installation advice

This document provides information on the installation of the guardrail. A separate site-specific risk assessment will need to be undertaken. A method statement for the installation is then to be developed prior to commencing the works.

What you will receive



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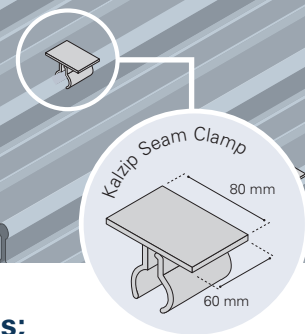


400 mm Min

Max 1200 mm

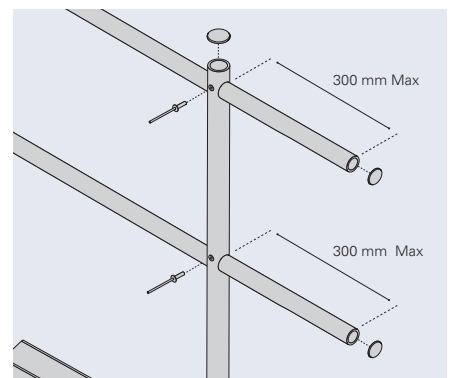
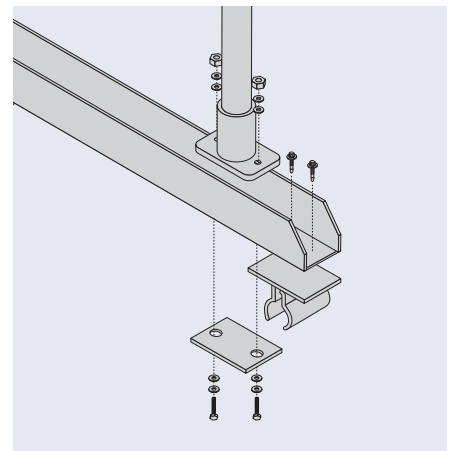
400 mm

400 mm



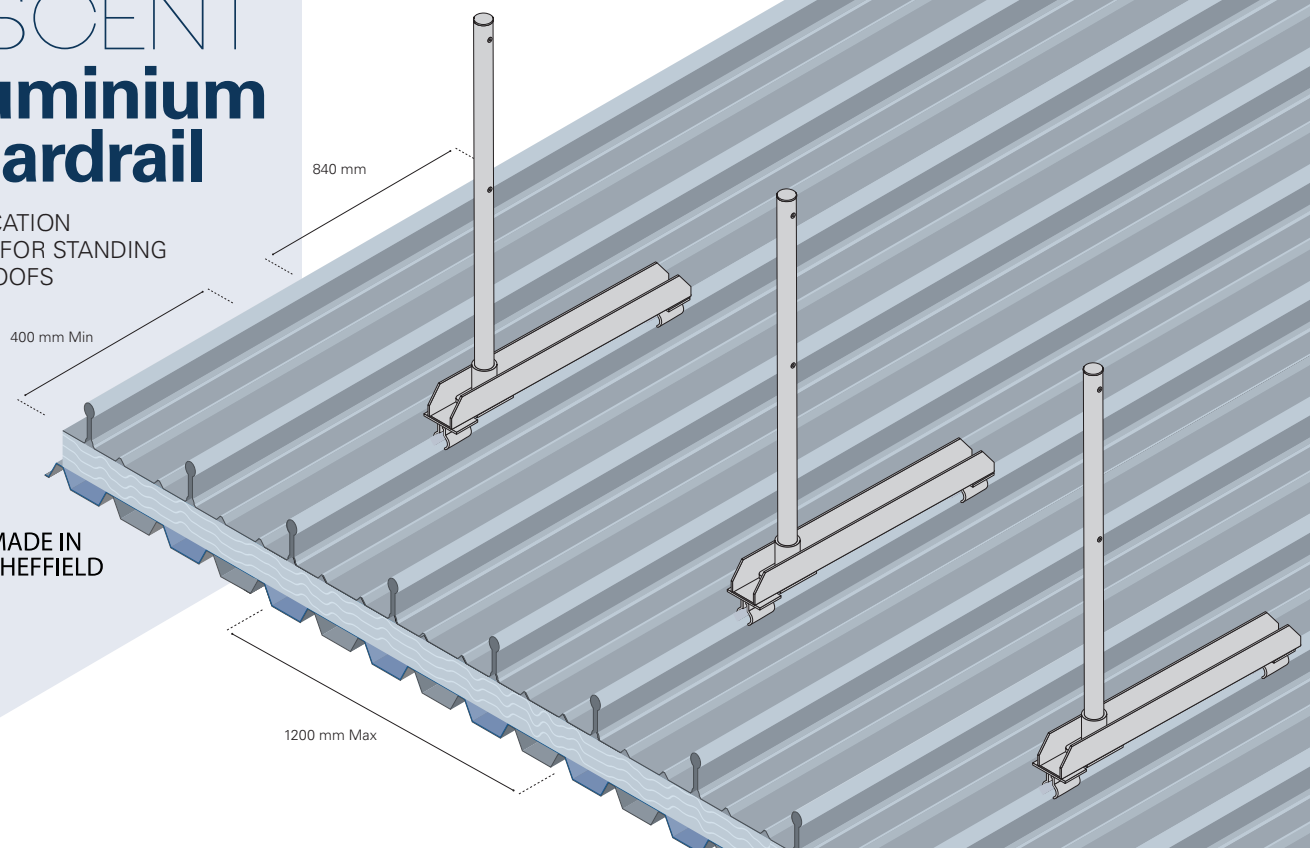
For the installation of Ascent™ Guardrail Parallel to the seams;

- Establish the intended layout of the guardrail system from site plans
- Establish where the first guardrail stanchion is to be located. Fit the first pair of seam clamps loosely onto the seams. Ensuring each clamp is at least 400mm from roof edge & a minimum of 100mm from the nearest standing seam halter clip.
- Measure the distance to the next stanchion location (max 1200mm) and repeat the process until all seam clamps are loosely installed on the seams.
- Affix the supplied handrail upright & palm base to the support channel using the set screws & flat bar packer supplied. Ensure the set screws are installed with the threaded length upwards. Do not fully tighten the set screws until the handrail tube is fitted
- Place the Handrail upright & its support channel on top of the seam clamps.
- Using a G-clamp secure the channel to the seam clamp. Ensure the channel is centred over the clamp and that the packer on the underside of the channel abuts the upslope edge of the seam clamp.
- Affix the support channel to the 2 No seam clamps using the 4 No self drilling tech screws.
- Install both the top & mid-rail handrail tubes inserting each through the pre formed holes in the stanchion. Note the top tube is a larger diameter than the mid-rail. Tighten the nut on the set screws holding the palm base to the channel to 50 Nm
- Affix the handrail tube to the handrail upright using a rivet. First ensure the handrail upright is vertical. Then pre-drill both the upright & the handrail tube. Then join using the rivet
- Using a soft mallet insert the plastic bungs into both the top of each handrail stanchion and the open ends of the handrail top and mid rails
- Upon completion of the installation check all fixings are secured to their required torque settings. Remove all swarf, clean & clear site.



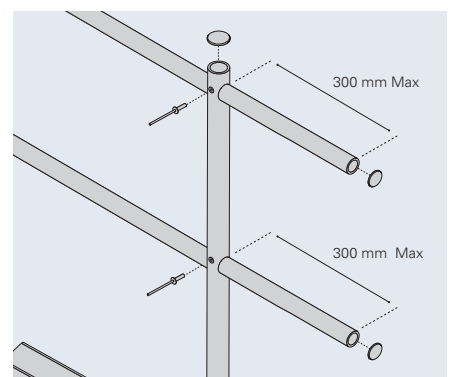
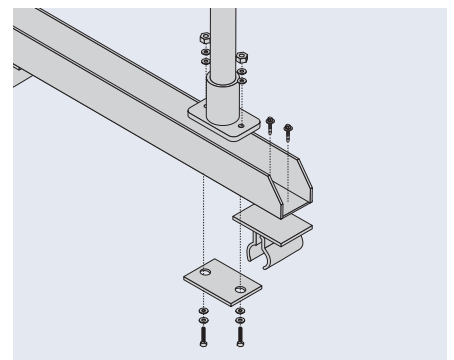
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For the installation of Ascent™ Guardrail Transverse to the seams;

- Establish the intended layout of the guardrail system from site plans
- Using a non-permanent marker, mark on the seams the intended location of the first stanchion ensuring minimum distance 400mm from edge of the roof.
- Establish where the first stanchion is to be located. Fit the first pair of seam clamps loosely on the seam 800mm apart (applicable if handrail was fitted at 90-degrees on a 400mm seam centre roof). Ensure no seam clamp is closer than 100mm to the roofs halter clip.
- Measure the distance to the next stanchion location (max 1200mm) and repeat the process until all seam clamps are loosely installed on the seams.
- **1.** Check the edge distance and using a string line ensure all down slope seam clamps are aligned along the roof. **2.** Secure down-slope seam clamps to the standing seam (max torque 6 Nm)
- Repeat step 5 with the up-slope seam clamps ensuring they are spaced 800mm up-slope from their partner clamp.
- Affix the supplied handrail upright & palm base to the support channel using the set screws & flat bar packer supplied. Ensure the set screws are installed with the threaded length upwards. Do not fully tighten the set screws until the handrail tube is fitted
- Place the Handrail upright & its support channel on top of the seam clamps.
- Using a G-clamp secure the channel to the seam clamp. Ensure the channel is centred over the clamp and that the packer on the underside of the channel abuts the upslope edge of the seam clamp.
- Affix the support channel to the 2 No seam clamps using the 4 No self drilling tech screws.
- Install both the top & mid-rail handrail tube inserting each through the pre formed holes in the stanchion. Note the top tube is a larger diameter than the mid-rail.
- Affix the handrail tube to the handrail upright using a rivet. First ensure the handrail upright is vertical. Then pre-drill both the upright & the handrail tube. Then join using the rivet
- Using a soft mallet insert the plastic bungs into both the top of each handrail stanchion and the open ends of the handrail top and mid rails
- Upon completion of the installation check all fixings are secured to their required torque settings. Remove all swarf, clean & clear site.



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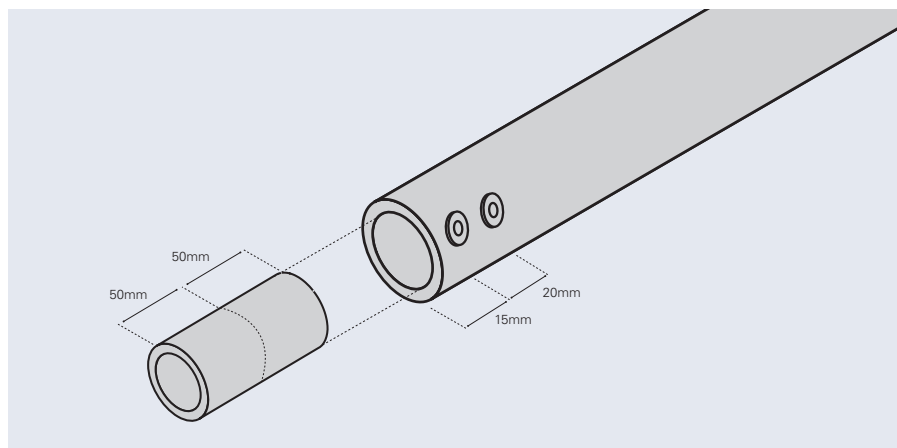
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Joining handrail tube (top & mid-rail)

Handrail Joining material

- Joining ferrules for the handrail top & mid tubes plus aluminium rivets
- Handrails are joined using the handrail joining insert. Use a soft mallet to gently tap the insert into the open end of one of the handrail tubes. This is now the "male" tube. Using a 5mm Ø drill bit form two holes at 15mm and 20mm from the end of the handrail tube through both tube & insert. Affix using rivets. Ensure the joining insert is affixed in the male tube ONLY.
- Joining the handrail tubes is done by inserting the "fixed male" handrail length into the female. Important – DO NOT fix the joining ferrule inside the female handrail tube the aim is to create a movement joint.

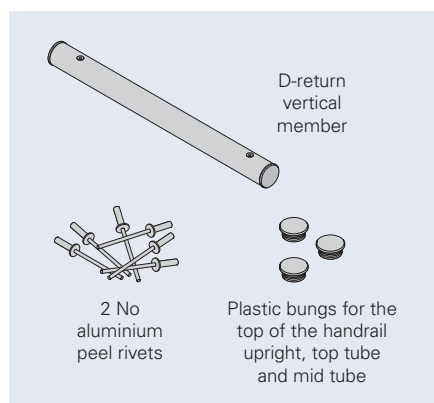


Terminating a handrail

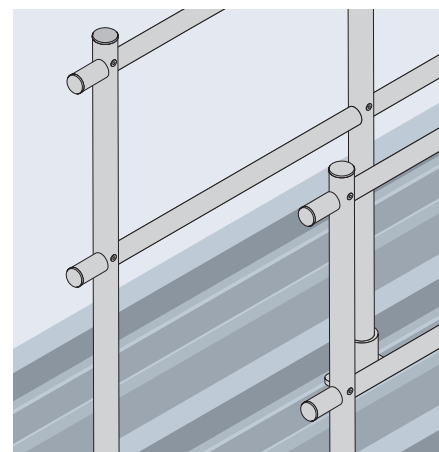
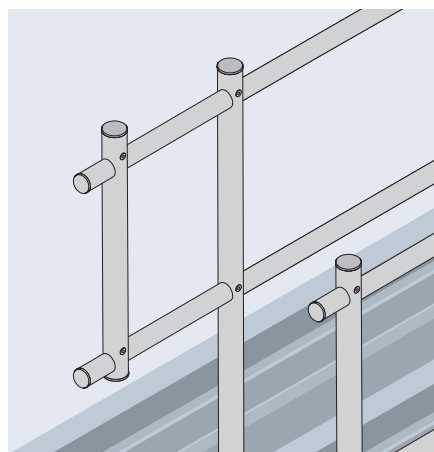
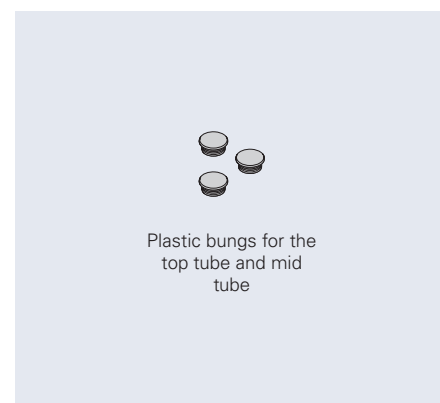
Handrail termination material

- Material supplied depends upon termination type;
- For a D-return – D-return vertical member + 2 No rivets + bung in the top and bottom of the upright
- For an open end 1 No mid rail plastic bung + 1 No top rail plastic bung
- Where handrail terminates in an open end or D-return. The handrail tube should extend no more than 300mm from the final stanchion

Forming a D-return material

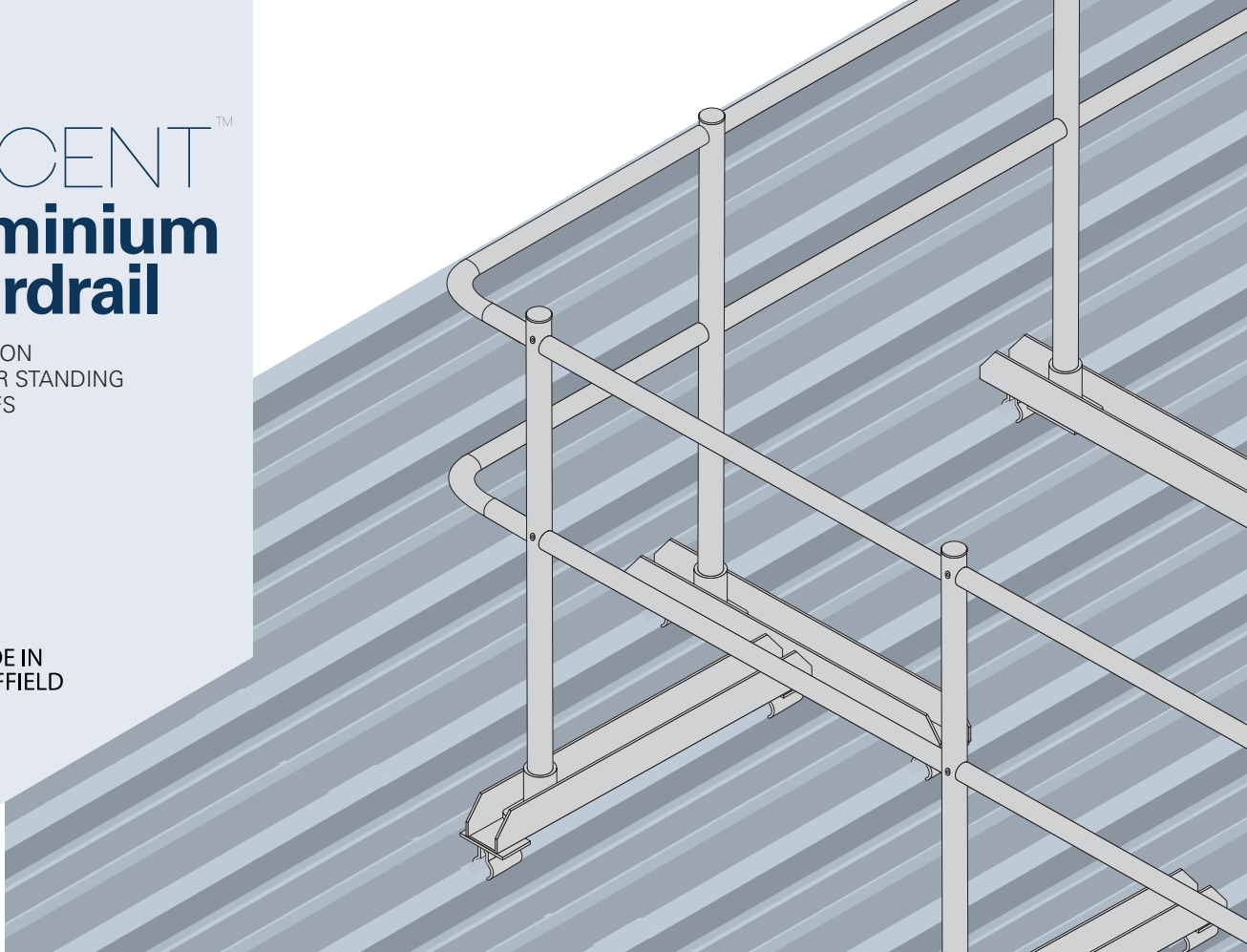


Forming a open return material

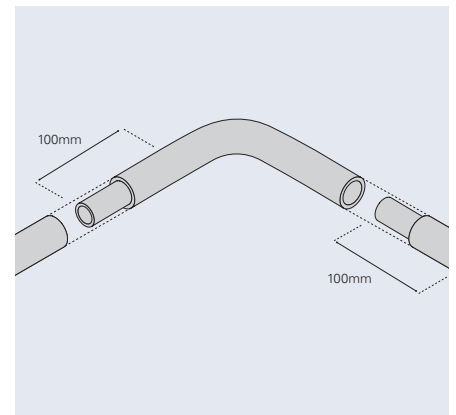
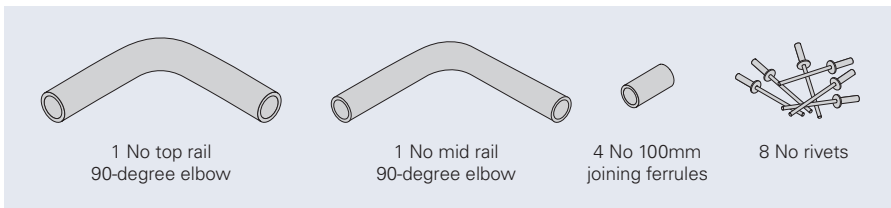


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Forming a corner material

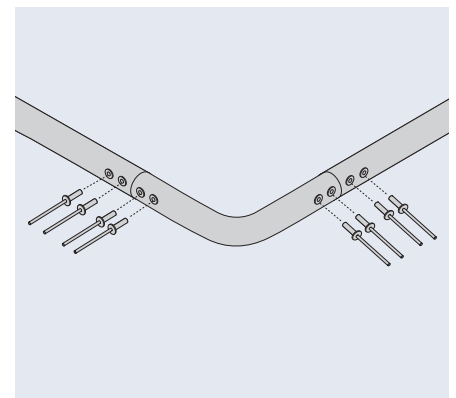


Forming a corner with the handrail

Handrail to start from a corner so that no cutting is required, where possible.

- Establish where the corner is to be formed. The handrail top & mid-rails should cross at this point.
- Where the two top rails intersect mark the intersection point on each rail. This is the mid-point of the corner.
- The corner bend needs to be placed on top of the intersecting handrail tubes and marked from the ends of the bends, then cut.
- Cut the handrail tube to length. Then again.

- Install a handrail joiner to the end of the bend as shown, and one joiner to the handrail tube end, both with 50mm protruding, rivet in place 15mm from the end then 20mm away. Assemble the corner and rivet the final 2 joints.
- Ensure both the top & mid-rail corner detail is rivet fixed to both handrail tubes as shown – the corner DOES NOT form an expansion joint



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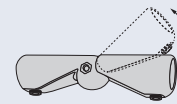
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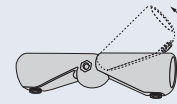
Going over the apex of a ridge /changing direction with the handrail.

- Where the two rails intersect mark the intersection point on each rail. This is the mid-point of the change in direction.
- Measure 60mm top and 50mm bottom from the mid-point on both handrail tubes & cut the tube to length.
- Install the supplied external tube joining fitting & secure using grub screws to 39 Nm.

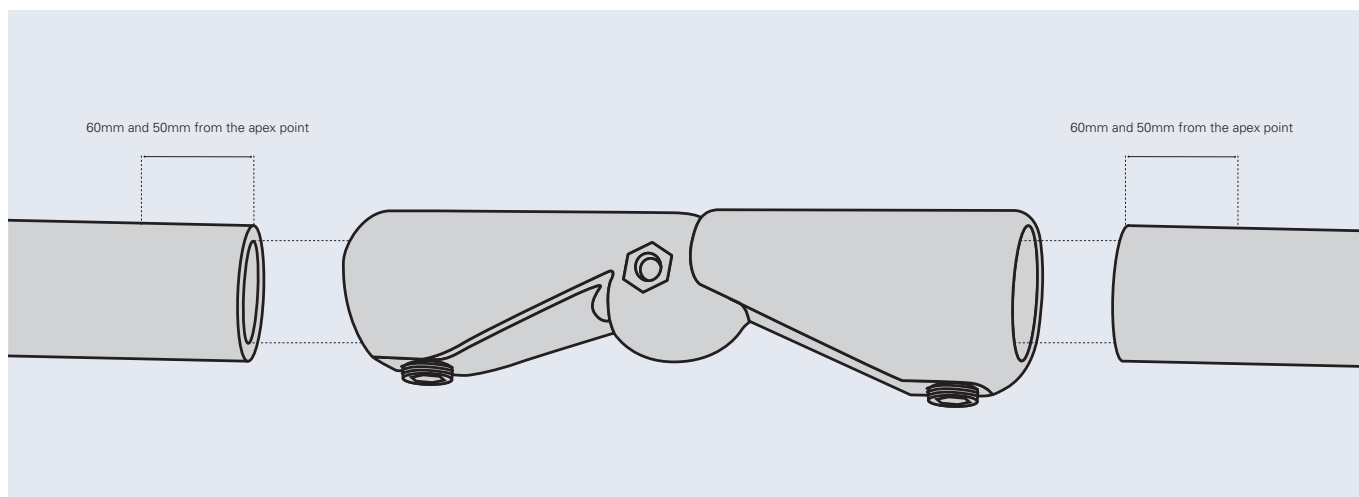
Ridge detail material



1 No top rail external variable connector

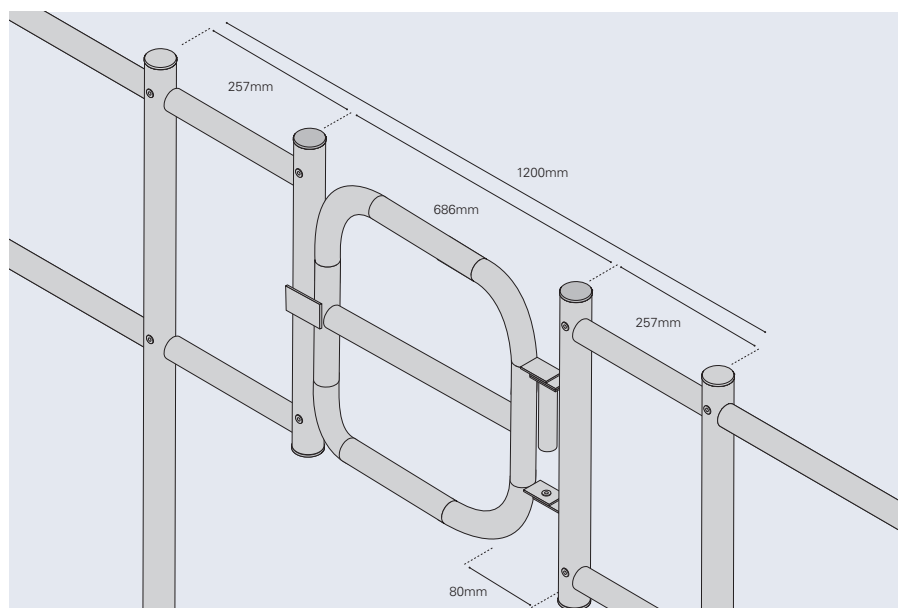


1 No mid rail external variable connector



Installing a gate within the handrail

- Establish where the gate is to be positioned within the guardrail.
- Ensure that the uprights for the gate are 686mm apart, to allow fitting of the gate in a central position, max 300mm from a stanchion on the hinge end.
- Affix gate support rail to hinge side stanchion.





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