

INSTALLATION MANUAL

STATIC LINES



Kattsafe static line is a proprietary fall arrest system suitable for multiple users, providing a high level of safety for workmen and maintenance personnel requiring safe access to plant and equipment.



Product brochure
Static line



Installation manual
Static line



Operation manual
Static line

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



STATIC LINES

Kattsafe static lines for personnel working at height using a fall arrest harness and lanyard system.



End stanchion

This provides a secure termination anchorage for the cable.



Cable tensioner with indicator

Ensures line tension can be adjusted after installation and during maintenance.



Intermediate

To support the cable and reduce forces on the end stanchions.



Corner

Supports a change in the direction of the cable.



Traveller

Providing smooth operation along the cable for the operator, and the fail safe cable locking feature on this unit ensures total user confidence when attached to the system.

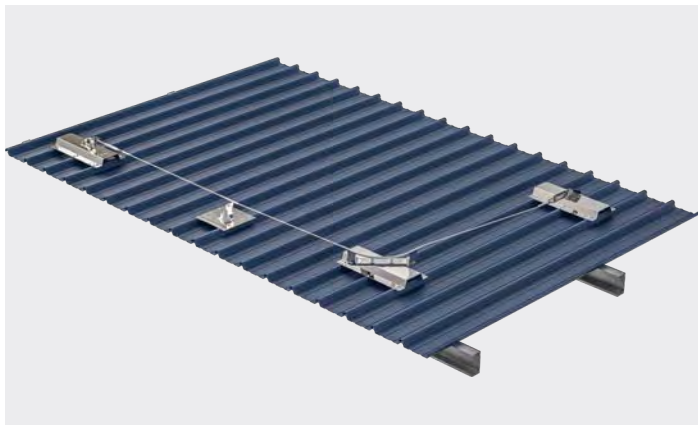


Energy absorber

Designed to deploy under excessive load, limiting forces on the system and operator.

STATIC LINE CONFIGURATIONS

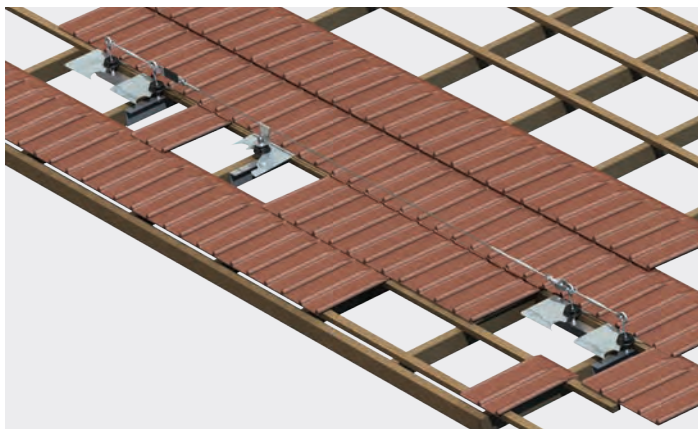
SL1 Metal deck static line system



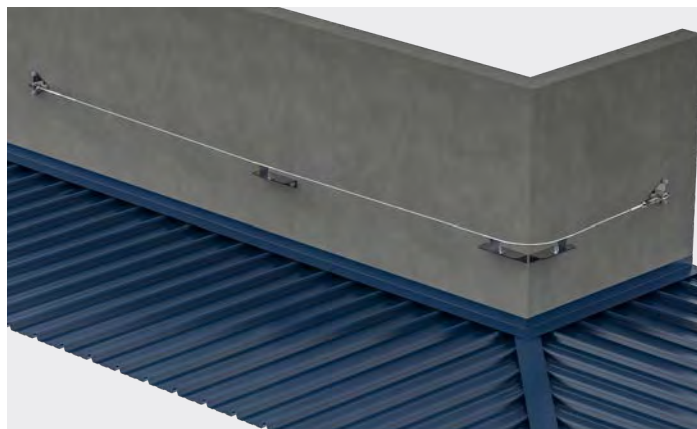
SL2 Concrete mount static line system



SL4 Timber mount static line system



SL5 Wall mount static line system



SL6 Concrete mount static line system - raised

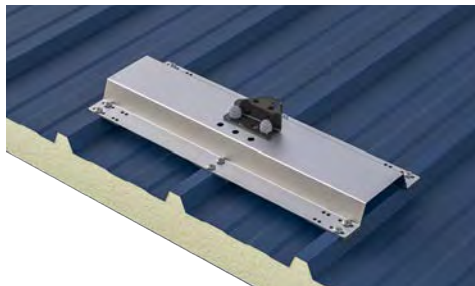


STATIC LINE COMPONENTS

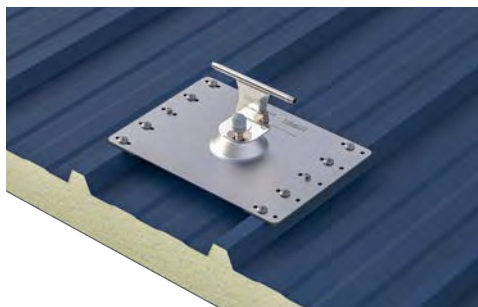
Anchorage cable



End stanchion



Intermediate



Corner



SL215 Energy absorber



SL213 Cable tensioner with indicator



Traveller



TOOLS AND EQUIPMENT

Cordless drill



8mm metal drill bit



3/8 nut setter



Rag or brush



Hand operated Gesipa riveter



or Battery operated Gesipa riveter



Tape measure



Marking pen



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 WHS 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 WHS 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. Only to be used by competent persons with proof of training by a Registered Training Organisation (RTO) in the use of height safety and fall protection systems.
2. Harness gear is susceptible to deterioration when exposed to chemicals or hazardous environments and must be approved by the manufacturer for use in these applications.
3. Operators of this system must be connected via a lanyard with a personal energy absorber in accordance to Australian and New Zealand Standard AS/NZS 1891.1.
4. Kattsafe static line not to be used on slopes/roof pitches exceeding 30° or used for twin rope access (abseil) applications.
5. Do not exceed maximum number of users/persons per span. See specific system data plate for user configuration.
6. Only one person to be connected to the traveller at any one time (max 120kg user weight)
7. The traveller is only to be used with the proprietary carabiner provided.
8. The traveller is not to be used in the inverted position as a severe load could cause failure of the traveller causing injury or death.
9. The traveller is not certified to be used on any other static line system other than the Kattsafe cable system.
10. The Kattsafe static line is not to be used for rope access (abseil) anchorage.
11. Do not tamper with system components.
12. This system is not to be used for tethering or lifting machinery or equipment.
13. 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

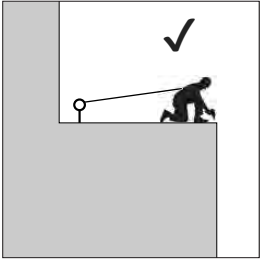


Figure 1
CORRECT Anchor loading in shear.

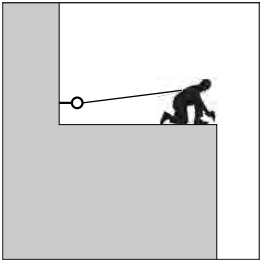


Figure 2
INCORRECT Anchor loading in tension. (Through bolt or cast-in anchors acceptable)

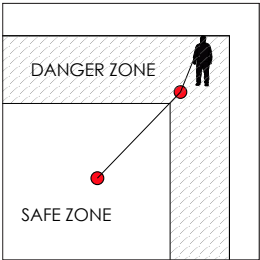


Figure 3
Primary anchor required in the 'safe zone'. The diversion anchor may be in the 'danger zone'.

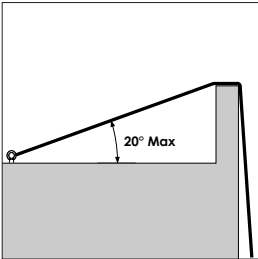


Figure 4
Lanyard not to exceed 20°. This will cause excessive tensile load on the anchor.

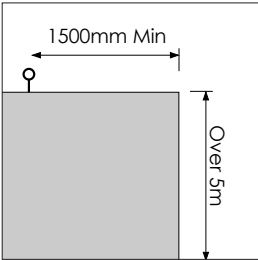


Figure 5
Anchor positioning for fall arrest minimum 1500mm from edge if vertical height is over 5m.

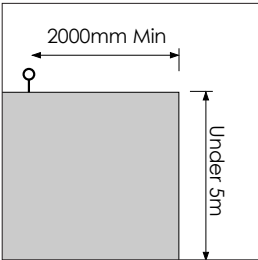


Figure 6
Anchor positioning fall arrest minimum 2000mm from edge if vertical height is under 5m.

DESIGN & LAYOUT

Must be read prior to installation

1. The hierarchy of risk control must be followed at all times



It is important to note that the lower the hierarchy of control, the greater the skill of the operator required and therefore is least preferred compared with a higher hierarchy requiring minimal operator skill and less risk of operator injury as a result of incompetence.

2. Professional guidance on the design and set out of this system should be obtained prior to installation.
3. Certain environments produce acidic atmospheric conditions which are detrimental to steel structures and concrete surfaces. Any acidic environment must be assessed and structural components certified by a competent person prior to installation of this system.
4. Australian and New Zealand Standard AS/NZS 5532 does require each sub-structure type to which a fall arrest anchor system is attached to be individually tested and certified for safe use by the manufacturer.
5. When designing or positioning fall arrest and rope access systems it is important to check the following:
 - Roof pitch over 15° will require constant user attachment
 - Sub-structure type will determine best suited fixing method
 - Number of persons required to work in the same area will determine preferred type of fall protection system provided
 - Type of work to be done will determine best suited fixing type of fall protection system provided
 - How frequent the area will need to be accessed will determine preferred type of fall protection system provided
 - Safe access to the work zone will determine preferred type of access system to be used such as ladder or stairway system.
6. Where possible, anchorage systems should always be positioned above the operator to minimise unnecessary fall distance.
7. Drilled in or glued in anchors must not be positioned to allow tensile loads to be applied (Direct pull-out).

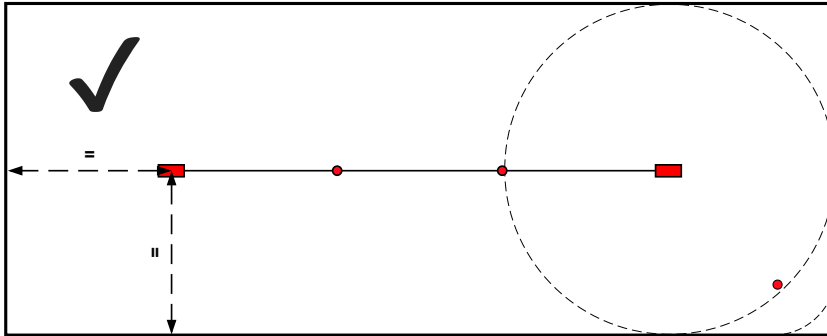


Where a tensile load is required the anchor must be a non friction type anchor. ie. either cast in or through bolted.

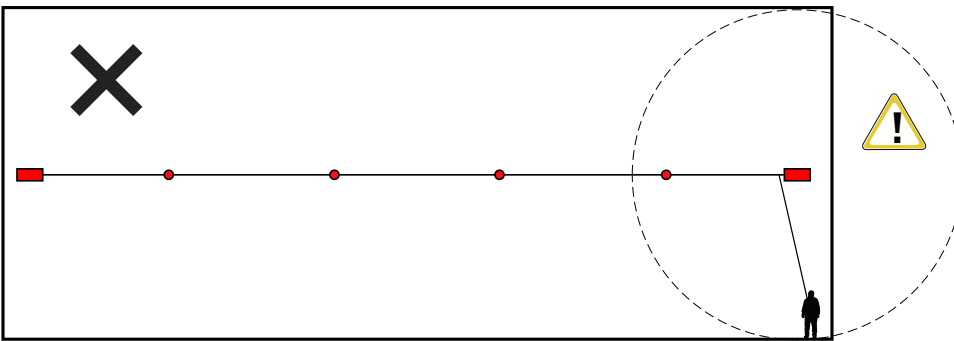
8. When connected to an anchorage system using a rope line lanyard, the anchorage must be placed a sufficient distance behind the operator to limit angle on lanyard to 20°. This is to avoid excessive tensile load on the anchor.
9. When positioning the anchor system it is important to ensure that there is no possibility of pendulum action should the operator accidentally fall as a result of incorrect anchor spacing between fall edge and spacing between anchorages.
10. Primary anchors must be positioned in the 'safe zone' a minimum of 2.5m from fall edge of the roof area ensuring operator safety whilst connecting to the system prior to moving into the danger zone area.
11. Anti pendulum or diversion anchors must be provided to allow rope line extension into extreme corners preventing pendulum action in the case of a fall.
12. Any angle of roof pitch above 40° will require rope access anchorages for use as a work positioning system (abseil) in place of a fall arrest system.
13. Sufficient fall clearance is essential in order to ensure correct operation of the system in a fall situation (see drawing page 28). Should fall distance be less than 5.0m, anchorage system must be positioned at least 2.0m or more from the fall edge to allow operator to work effectively in full restraint.



This document does not in any way replace the full Australian and New Zealand Standard document AS/NZS 1891 & AS/NZS 4488 which must be read and properly and understood prior to installation of this system.

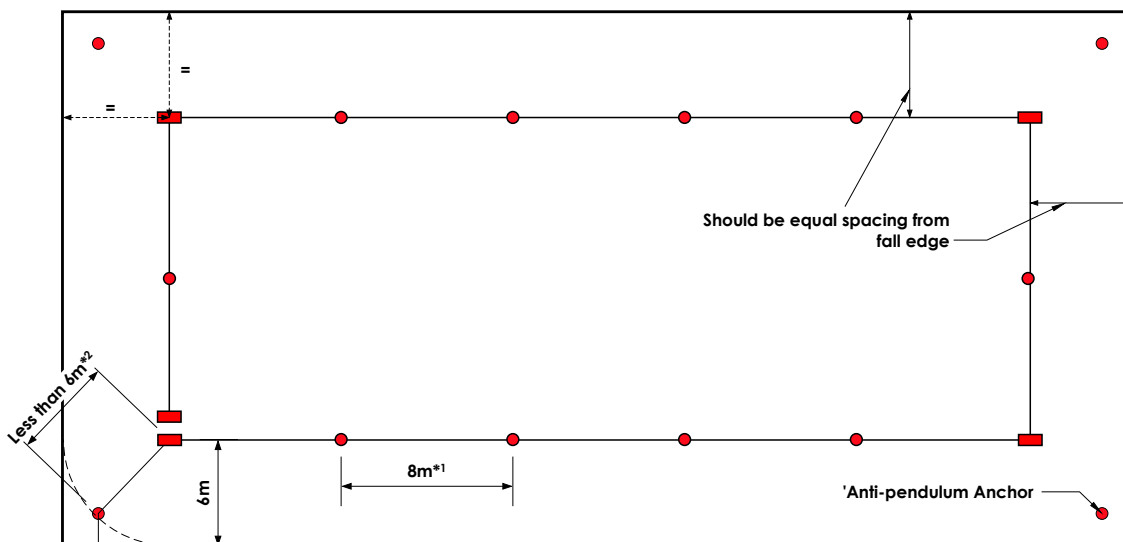


It is important that the start/finish of the static line is equal from the fall edges to avoid pendulum issues.



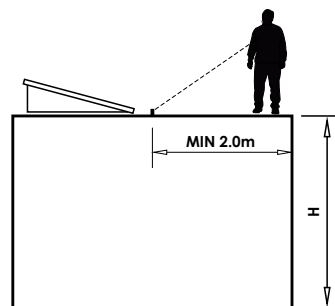
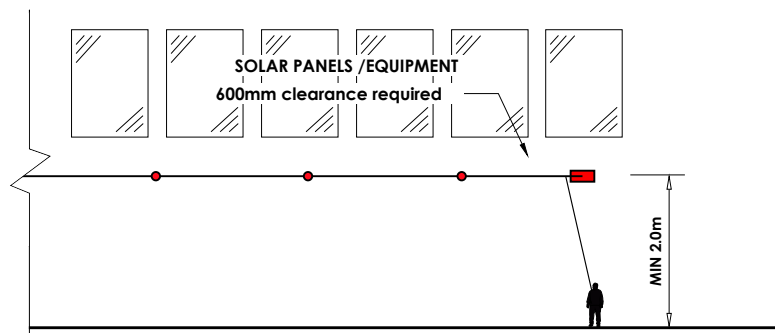
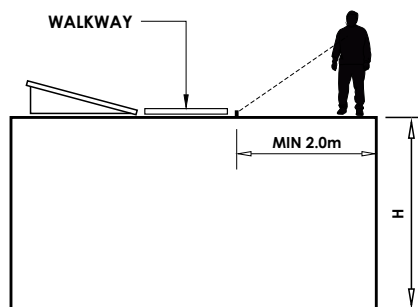
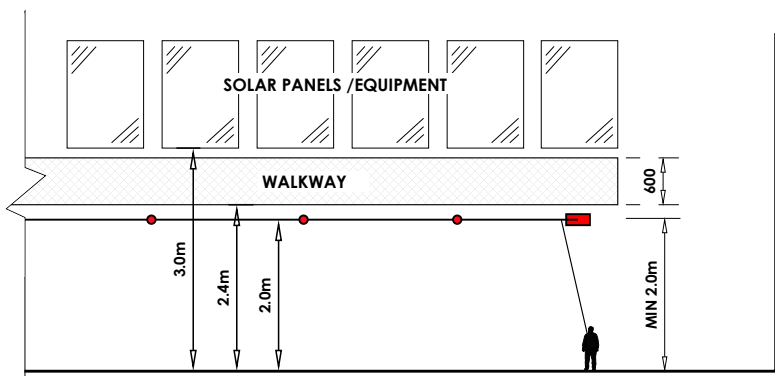
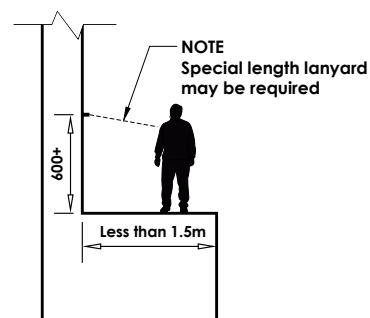
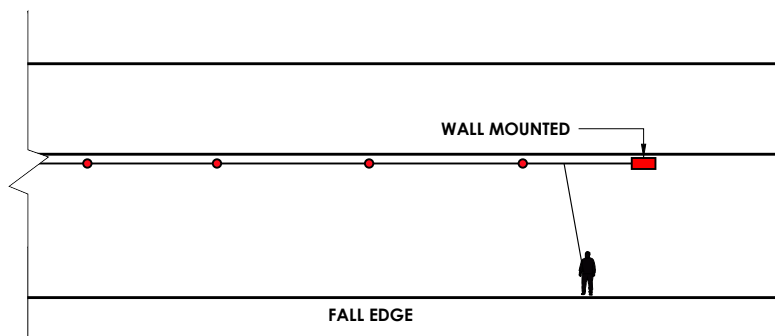
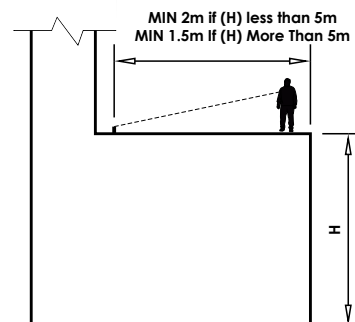
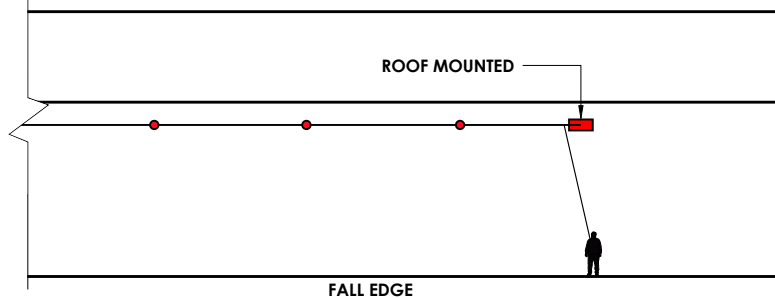
Potential pendulum zone may cause serious injury or death.

Optimum position for static lines in 2.5m to 6.0m from fall edge



- Optimum position from fall edge should be from 2.5m to 6.0m.
- Static lines further than 6.0m from edge can still be used however operation of the traveller may be hindered.
- *1 Refer to intermediate spacing table.
- *2 Refer to anchor 'pendulum' layout diagram.
- Static line should be same distance away from fall edge where possible (depending on purlin position) to avoid potential pendulum if set rope line length is used.

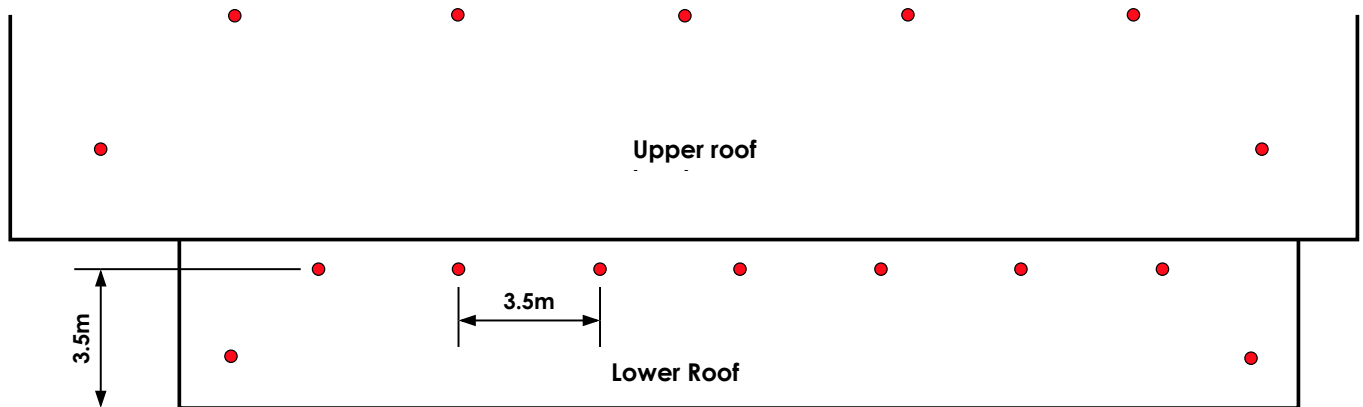
Narrow roof areas



This is to be used as a guide only. Calculations must be based on site conditions and Australian Standards/Code of Practice Regulations.

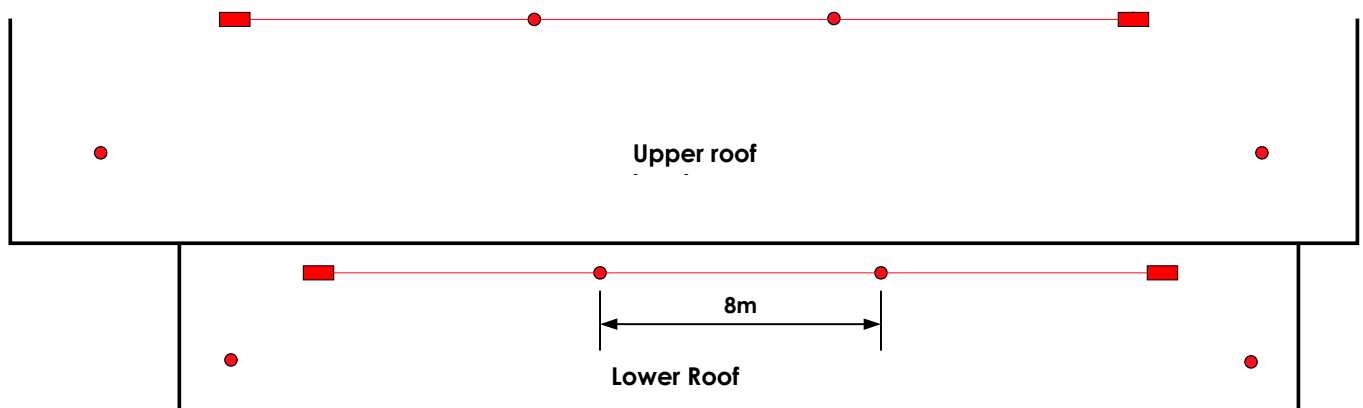
Anchors layout

Spacing of anchors/intermediate may also depend on working height to reduce deflection.



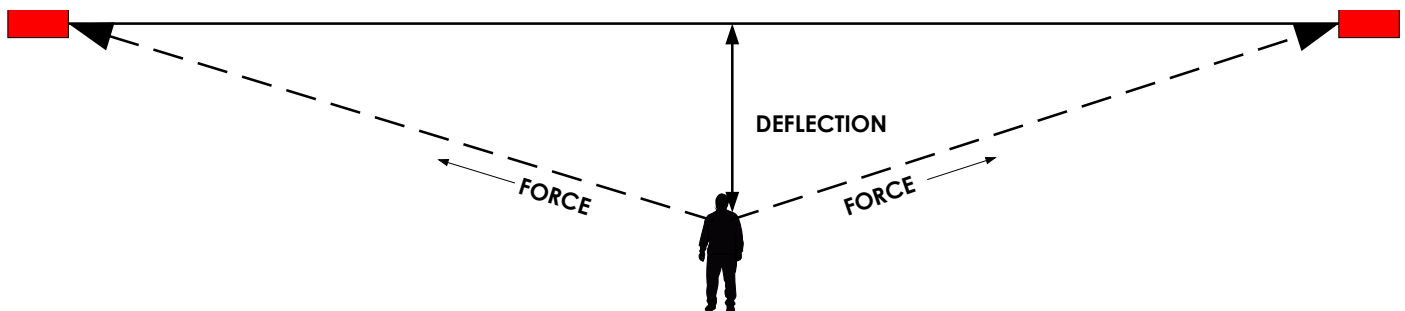
Static line layout

Spacing of anchors/intermediate may also depend on working height to reduce deflection.



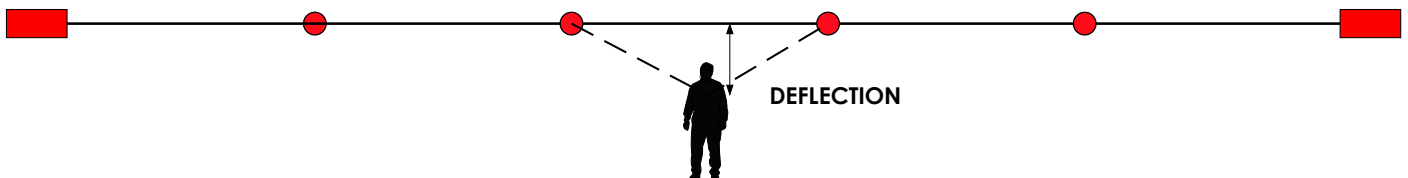
Static line cable with no intermediates

- Forces are transferred directly to the ends.
- The bigger the deflection, the higher the forces.
- If the deflection can be reduced the forces will also decrease.



Static line cable with intermediates

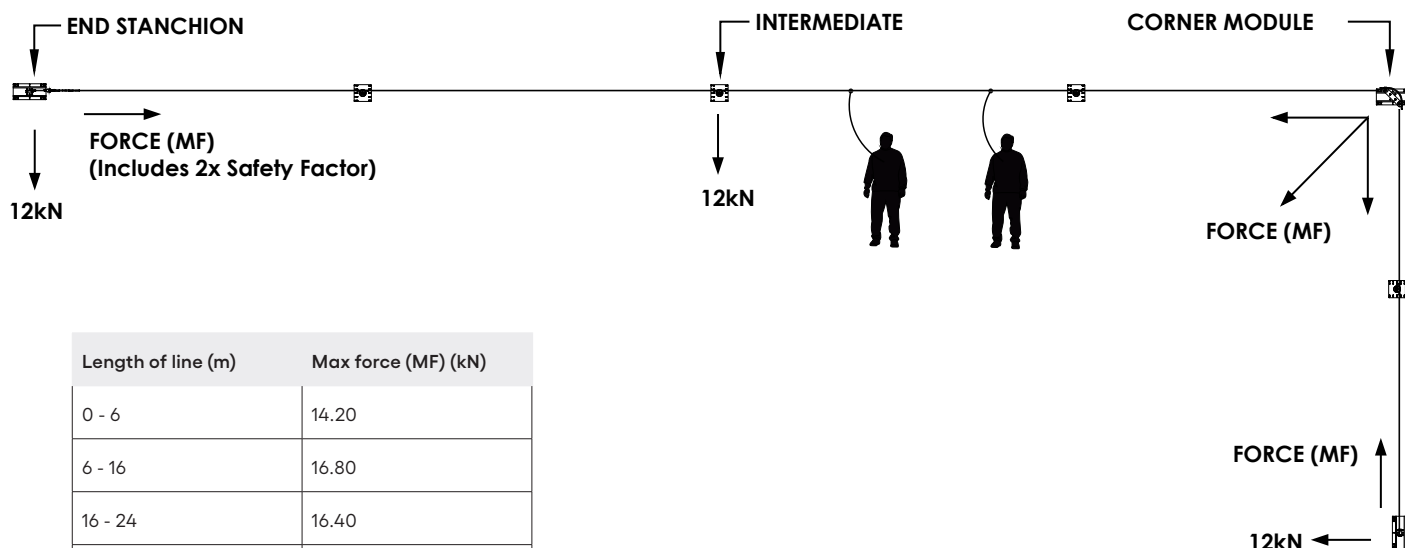
- Intermediates reduce the deflection which greatly reduces the forces.
- The closer the intermediates, the lesser the end forces.



Factors that contribute to the end loads

- Length of static line: the longer the line, the more stretch in the cable therefore lower end forces.
- Intermediate spacing: the closer the intermediates, the lesser the end forces.

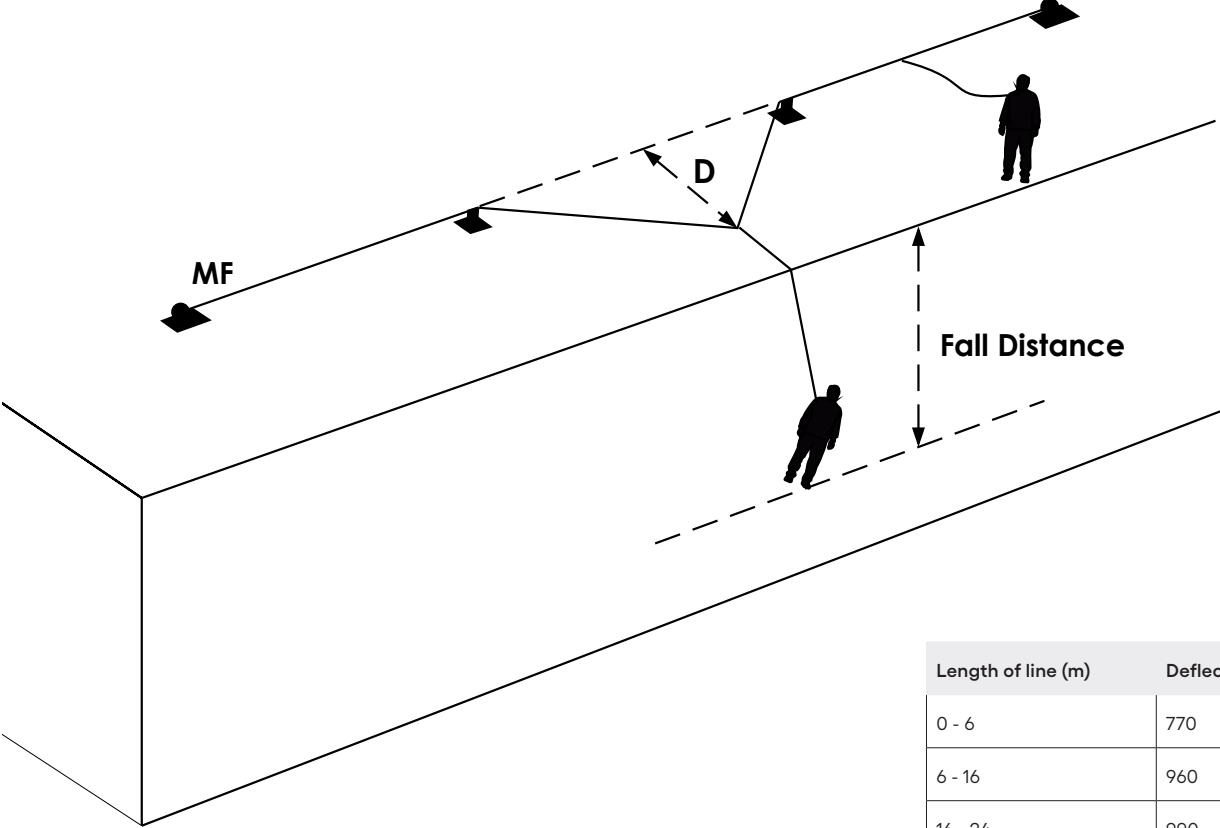
Static line forces and loads



Length of line (m)	Max force (MF) (kN)
0 - 6	14.20
6 - 16	16.80
16 - 24	16.40
24 - 32	15.80
32 - 40	15.60
40 - 50	15.10
50 - 60	14.70
60 - 70	14.40
70 - 80	14.20
80 - 90	13.90
90 - 100	13.30
100 - 150	12.60
150 - 200	12.40
200 - 300	<12.00

- All forces referred to are ultimate loads required (Factored Loads - includes Safety Factor).
- Actual forces are 50% of MF however a 2 x Safety Factor is required on all ends stanchions and corners.
- A 12kN load perpendicular to the line must be allowed for - as per AS/NZS 1891.2 - 2.5.2 (this is not simultaneously with the MF load).
- Forces above are based on intermediate spacings as per the intermediate spacing criteria. Any variation from this may result in higher loads.

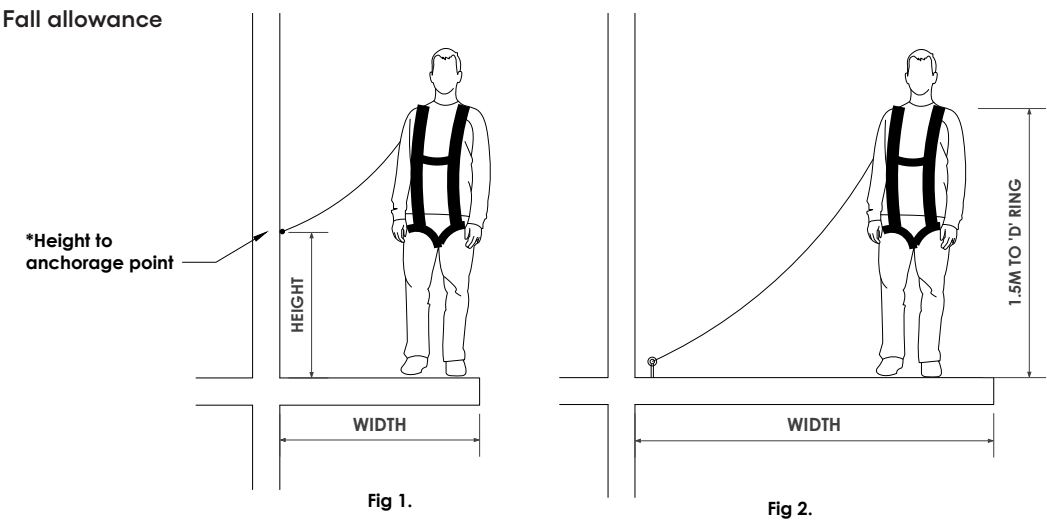
Static line deflection



Length of line (m)	Deflection (D) (mm)
0 - 6	770
6 - 16	960
16 - 24	990
24 - 32	1100
32 - 40	1215
40 - 50	1330
50 - 60	1440
60 - 70	1550
70 - 80	1650
80 - 90	1740
90 - 100	1830
100 - 150	1980
150 - 200	2230
200 - 300	2540

Deflection includes the extension of the SL215. See AS/NZ 1891.4 Section 7 & 8 regarding clearances.

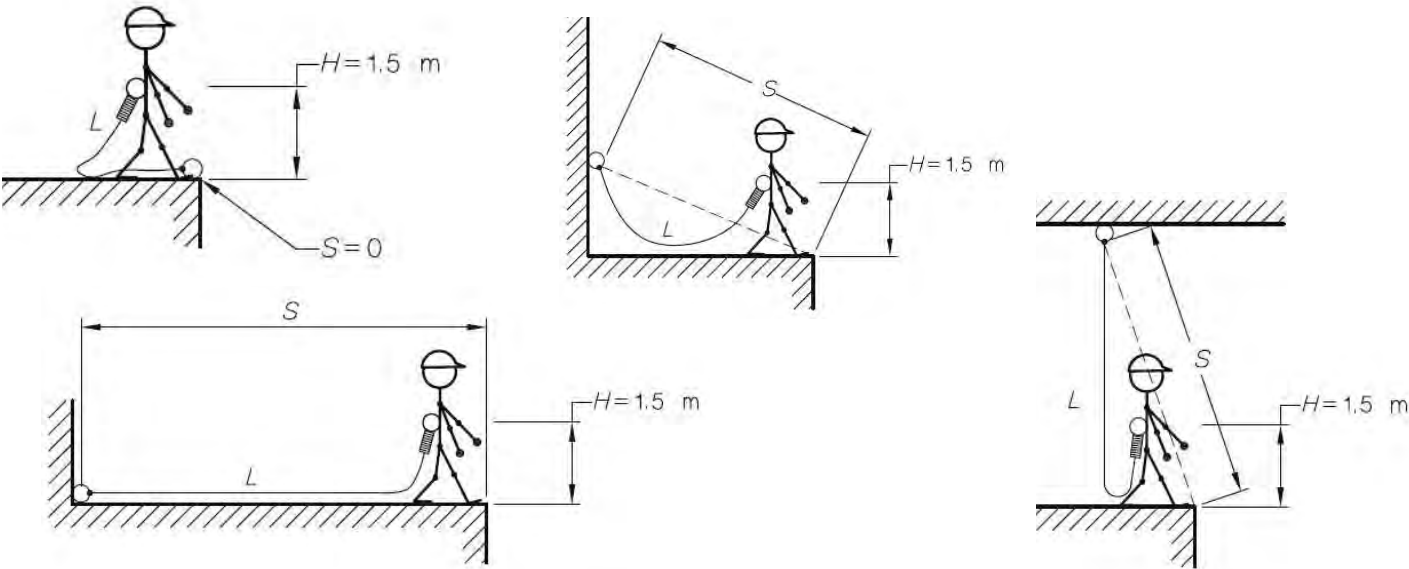
Fall allowance



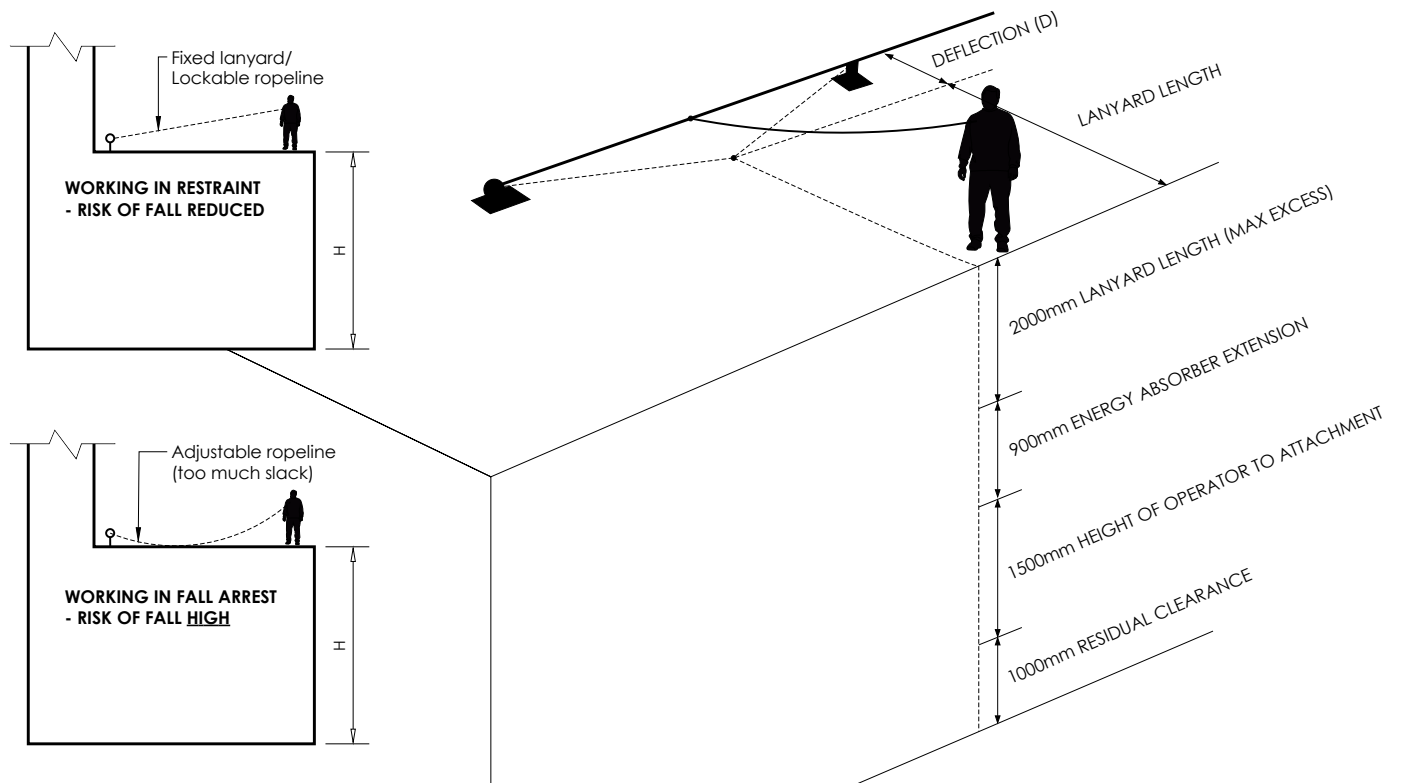
	Width (mm)	Height*		
		1000mm+ (Fig 1)	600mm (Fig 1)	On floor (Fig 2)
Fig 1.	600	Suitable	Exceeds fall allowance	Exceeds fall allowance
	1000	Suitable	Suitable	Exceeds fall allowance
	1500	Suitable	Suitable	Exceeds fall allowance
Fig 2.	1500	Suitable	Suitable	If 1.5m lanyard is used
	2000	Suitable	Suitable	Suitable

Measurement of free fall distance

Free fall distance = length of lanyard (L) - straight distance (S) + height (H) to 'D' ring (1.5m).

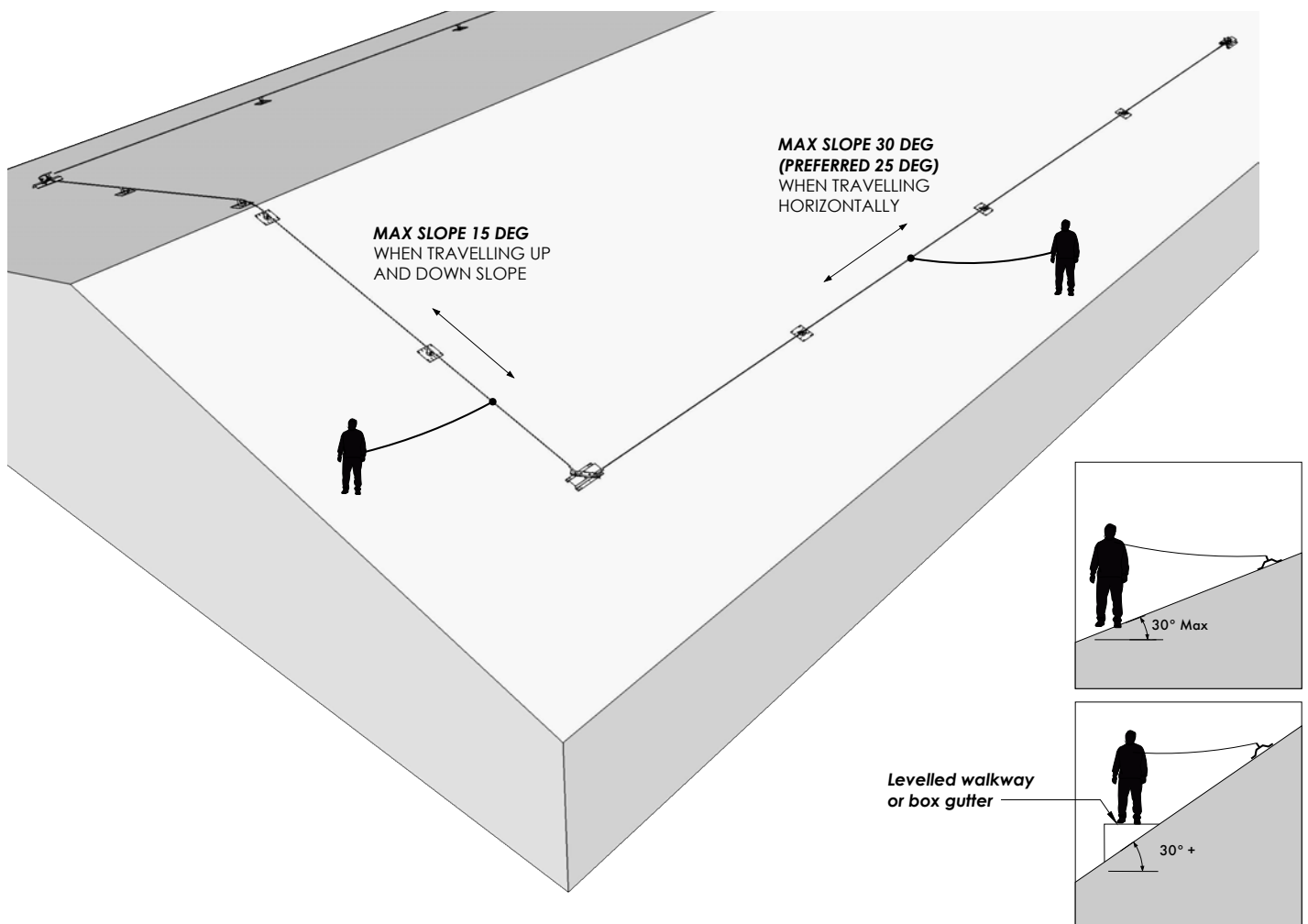


Measurement of free fall distance



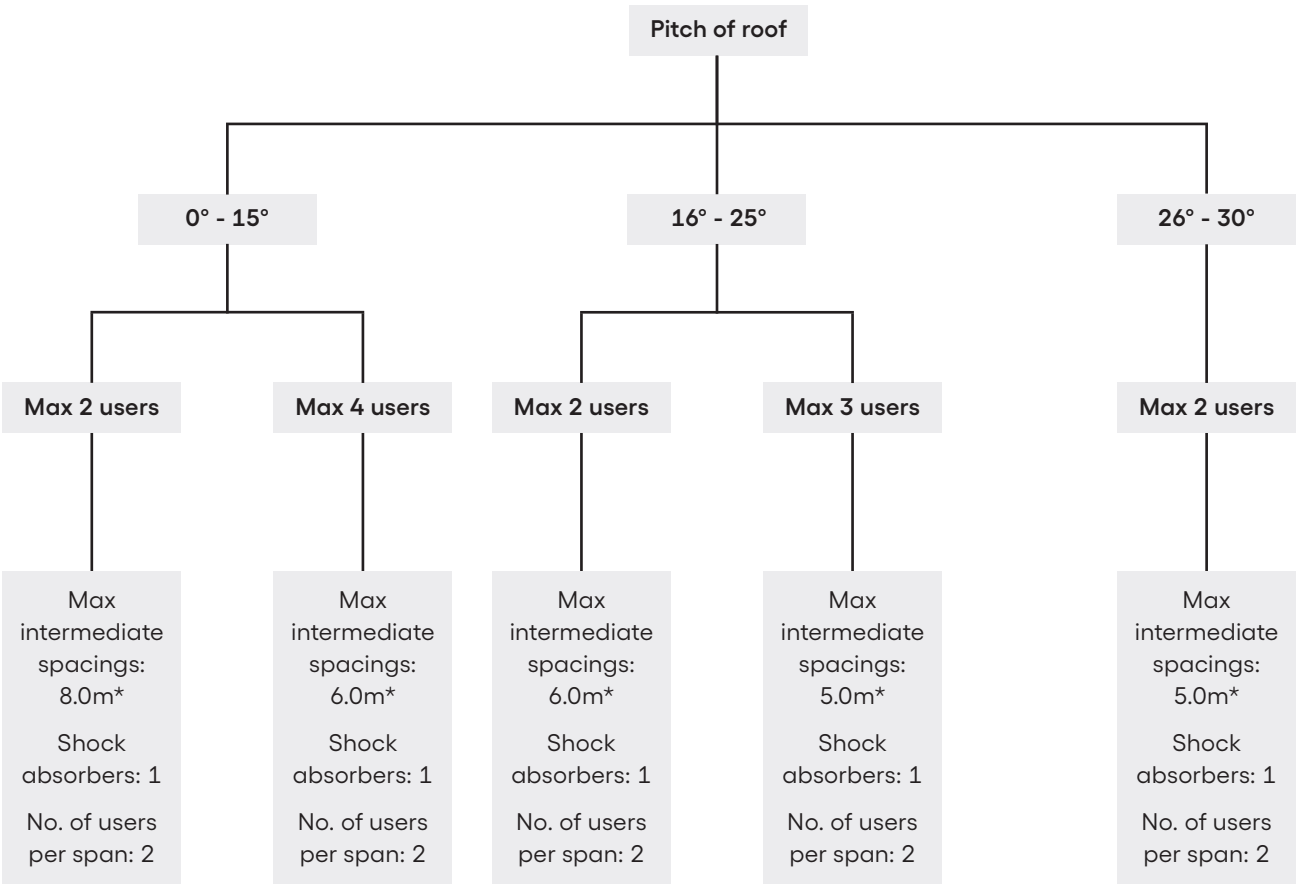
- When user has an adjustable rope line it is possible to work in 'restraint' (adjusting rope line to have minimum slack) therefore the risk of fall is reduced and the fall distance will be reduced dramatically.
- If user was to set up system as in Fig A and height above floor (H) was only 3.0m, this is still accepted as the user will be in restraint (no possibility to reach edge).
- Deflection (D) is only added if user is not working in restraint.
- Refer to AS/NZS 1891.4 Section 7 for further details.

Measurement of free fall distance



- Max roof pitch travelling horizontally: 30° *.
- Max roof pitch travelling up/down slope: 15°.
- Roof pitch greater than 15° will require different intermediate spacing (refer to spacing document).
- *Roof pitch greater than 25° requires greater user skill and therefore rail systems are preferred.

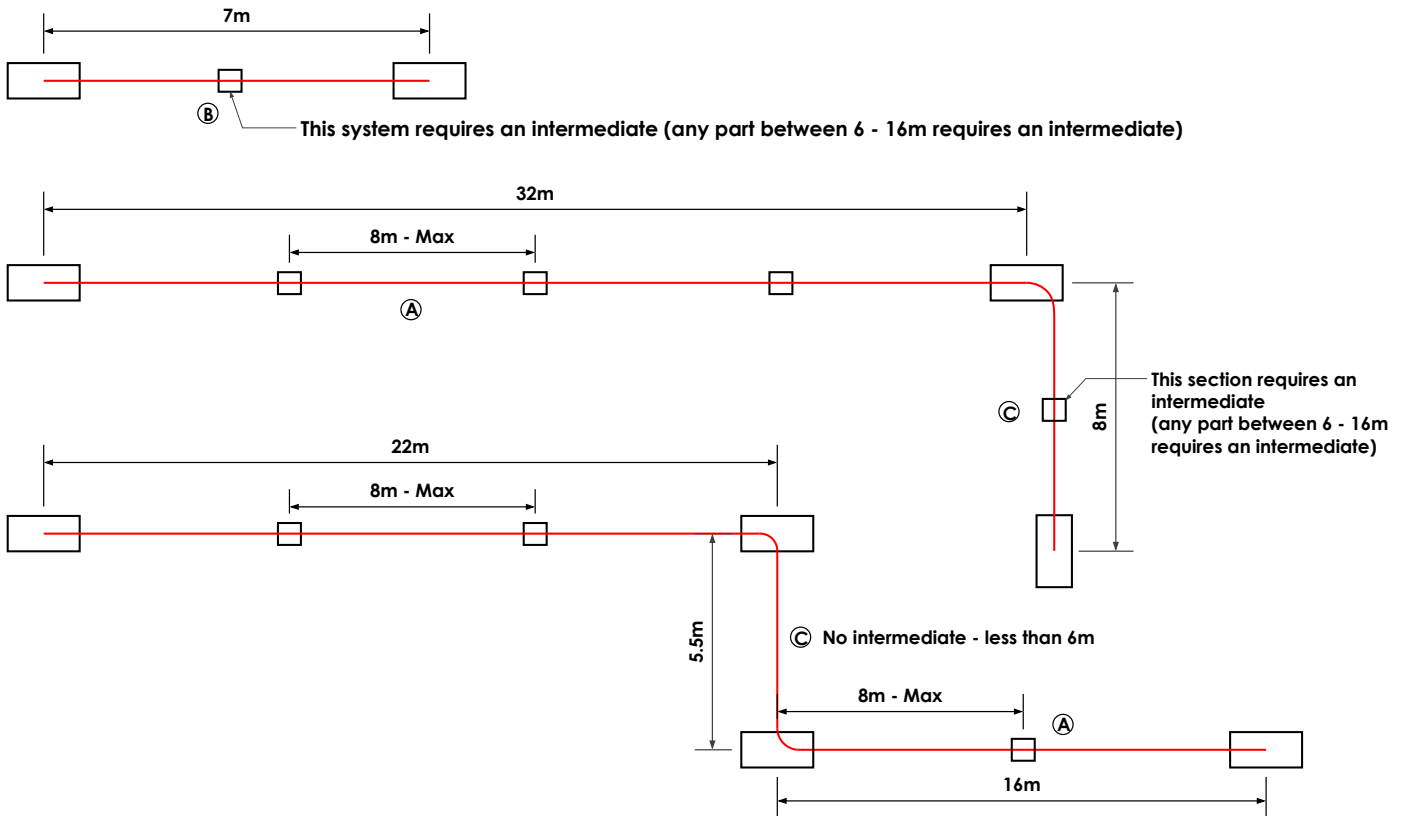
Intermediate spacing table



Timber mount static line installations normally fall within this category.

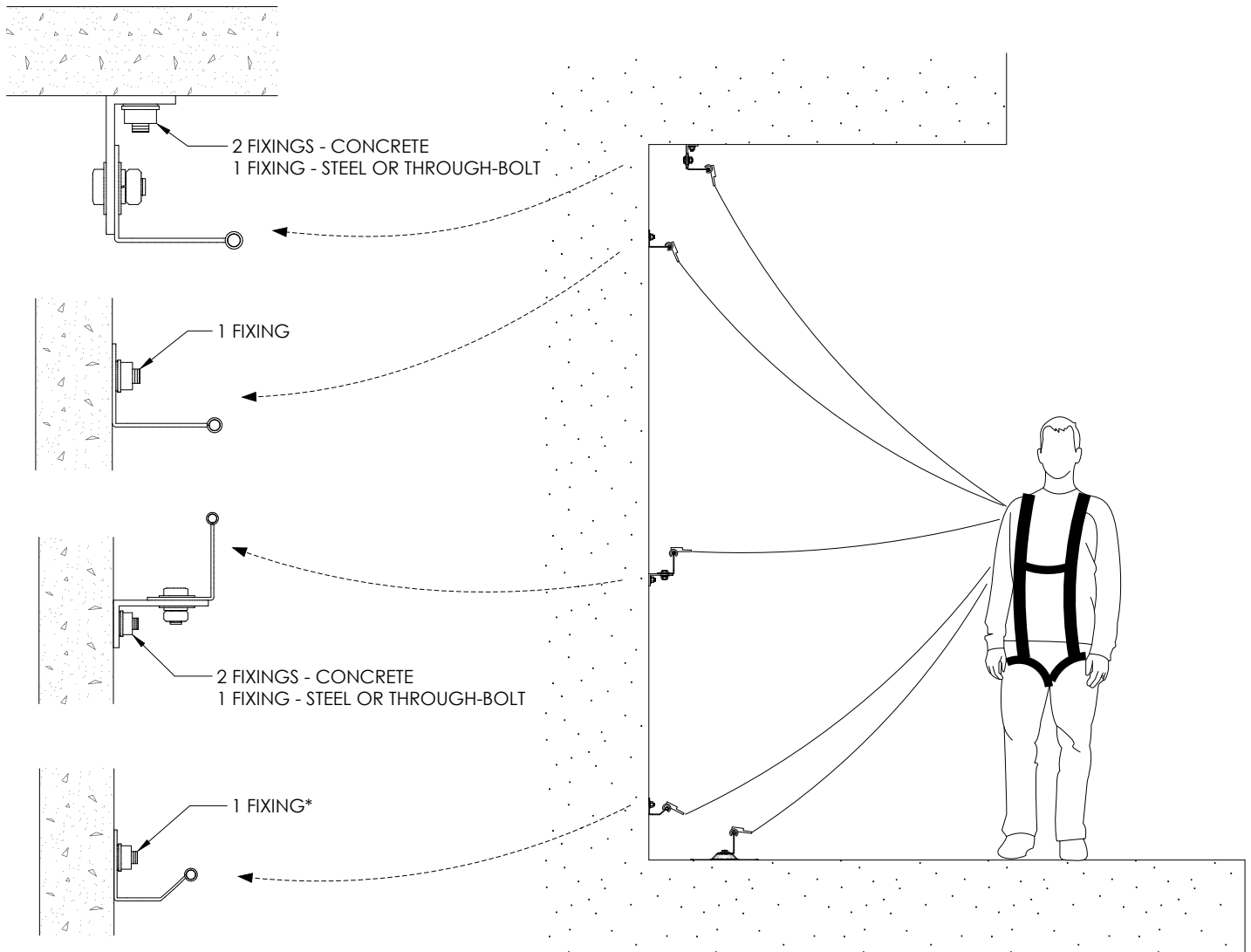
* Any part of a system that is 6 - 16m, there must be an intermediate.

Intermediate spacing rules



- Standard intermediate spacing is 8m.
- Static lines from 6.0m - 16.0m require at least 1 intermediate.
- Corners must be regarded as end stanchions. ie, if there is a line length between corner modules or end stanchions of 6 - 16m, there must still be 1 intermediate.
- It is recommended that any line longer than 100 metres should have 2 tensioners.

Intermediate positioning



*This fixing must be a through bolt or undercut type if used in concrete.

TERMINATION FITMENT GUIDE

Swageless termination



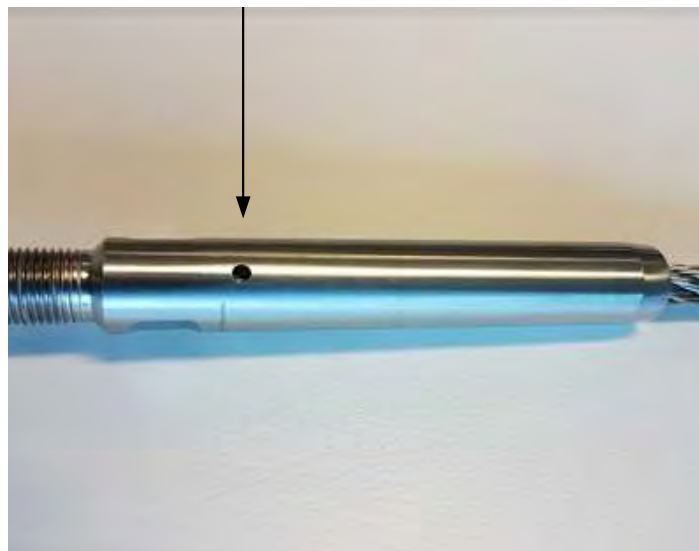
Roll swage termination



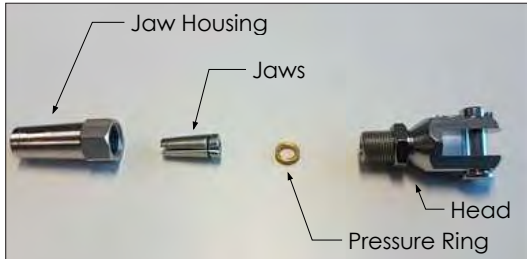
Crimp swage termination



For inspection purposes, the roll swage and crimp swage termination has an inspection hole. The cable can be inspected for slippage.



SWAGLESS TERMINATION ASSEMBLY PROCEDURE



Step 1

Ensure the cable is not damaged on the end.

Slide the jaw housing in place on the cable.



Step 5

Screw the head onto the jaw housing and tighten by hand only.



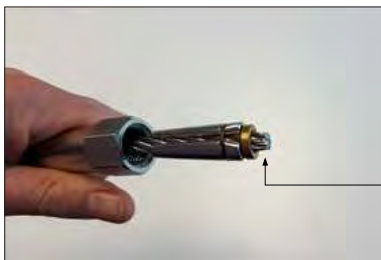
Step 2

Slide the jaws onto the cable, ensuring the jaws are evenly spaced around the cable.



Step 6*

Remove the head, leaving the housing firmly embedded on the jaws and make sure the cable still has at least 5mm protruding the brass pressure ring. This is to ensure the jaws are set properly.



Step 3

Place the brass pressure ring on the end of the cable.

Make sure that the distance from the pressure ring to the end of the cable is 5 - 8mm.



Step 7*

The terminal can now be reassembled. Screw the head firmly onto the jaw housing with a spanner, then tighten the lock nut firmly with a spanner.



Step 4

Slide the jaw housing over the jaws and pull 'gently', to allow the jaws to 'grab' on the cable.



* Steps 6 and 7 can be done for inspection of swageless terminals.

CRIMP SWAGE TERMINATION ASSEMBLY PROCEDURE



Die specification

Hexagonal die - shell type dies, 10.8mm across flats, 9mm crimp face length

Swaging unit

Izumi - Hand hydraulic compression tool - 12 ton

Izumi - REC3430 battery powered -12 ton hydraulic swager

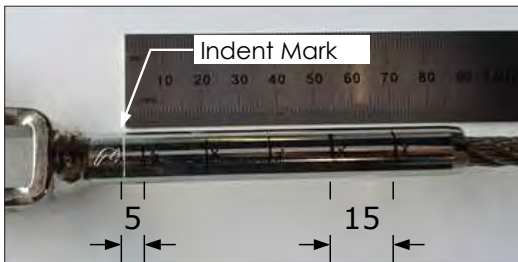
Izumi - REC5431 battery powered -12 ton hydraulic swager



Step 1

Insert the cable into the end of the terminal.

Ensure the cable is visible in the inspection hole.



Step 2

Mark the terminal for the positions to crimp. Start 5mm* from the indent mark then 5 x 15mm increments.

* Crimping must start away from the indent mark to prevent cracking of the stainless tube.



Step 3

Insert the terminal into the crimper onto the first mark.

Swage the cable until crimping is complete (the pressure will release).

(Follow instructions as per crimper details).



Step 4

Crimp another 4 crimps at 15mm intervals. There should be 5 crimps minimum.



Step 5

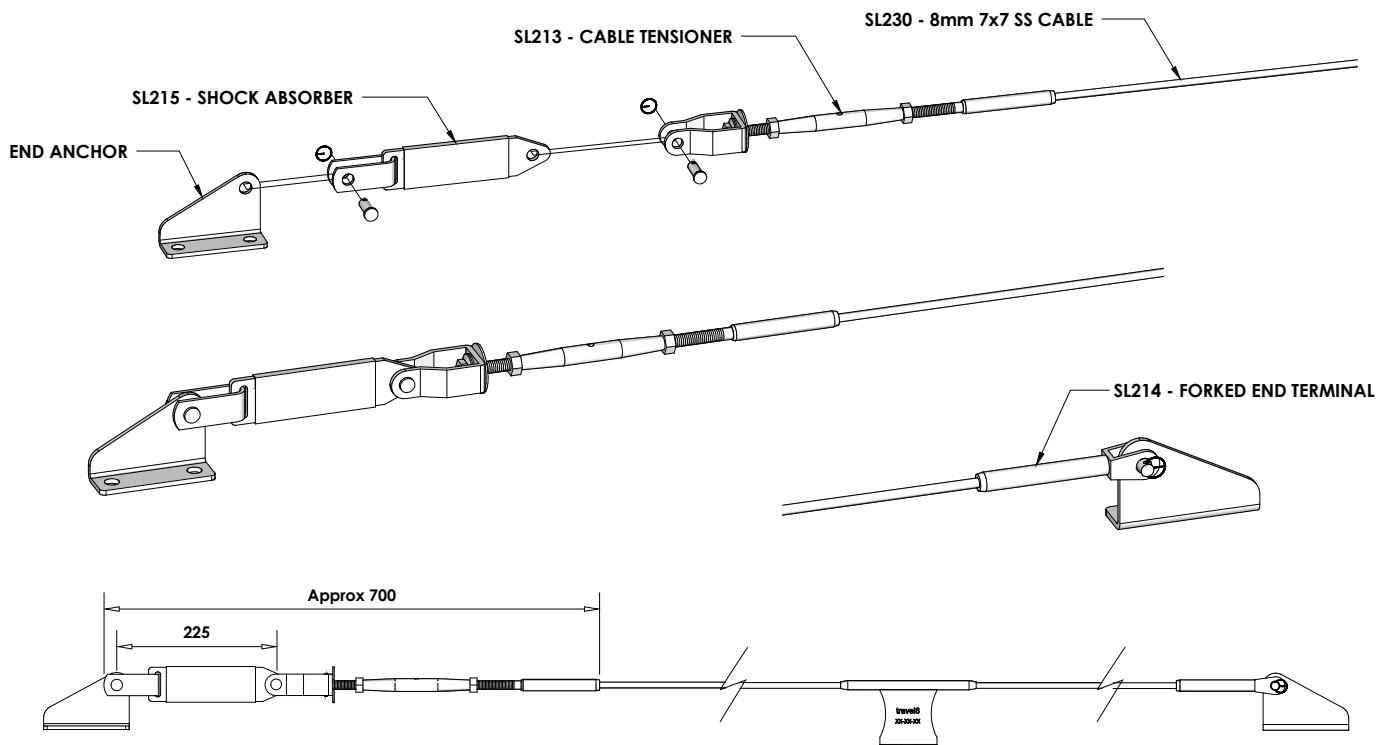
To ensure that the crimping has been successful and that the crimp will be 'certified' an accurate measurement of the crimp MUST be performed.

If the terminal has an initial 12.4mm diameter then the dimension across the flats should be 10.8mm - 11.2mm.

For a terminal with the diameter of 13mm diameter then the dimension across the flats should be 11.4mm - 11.8mm.

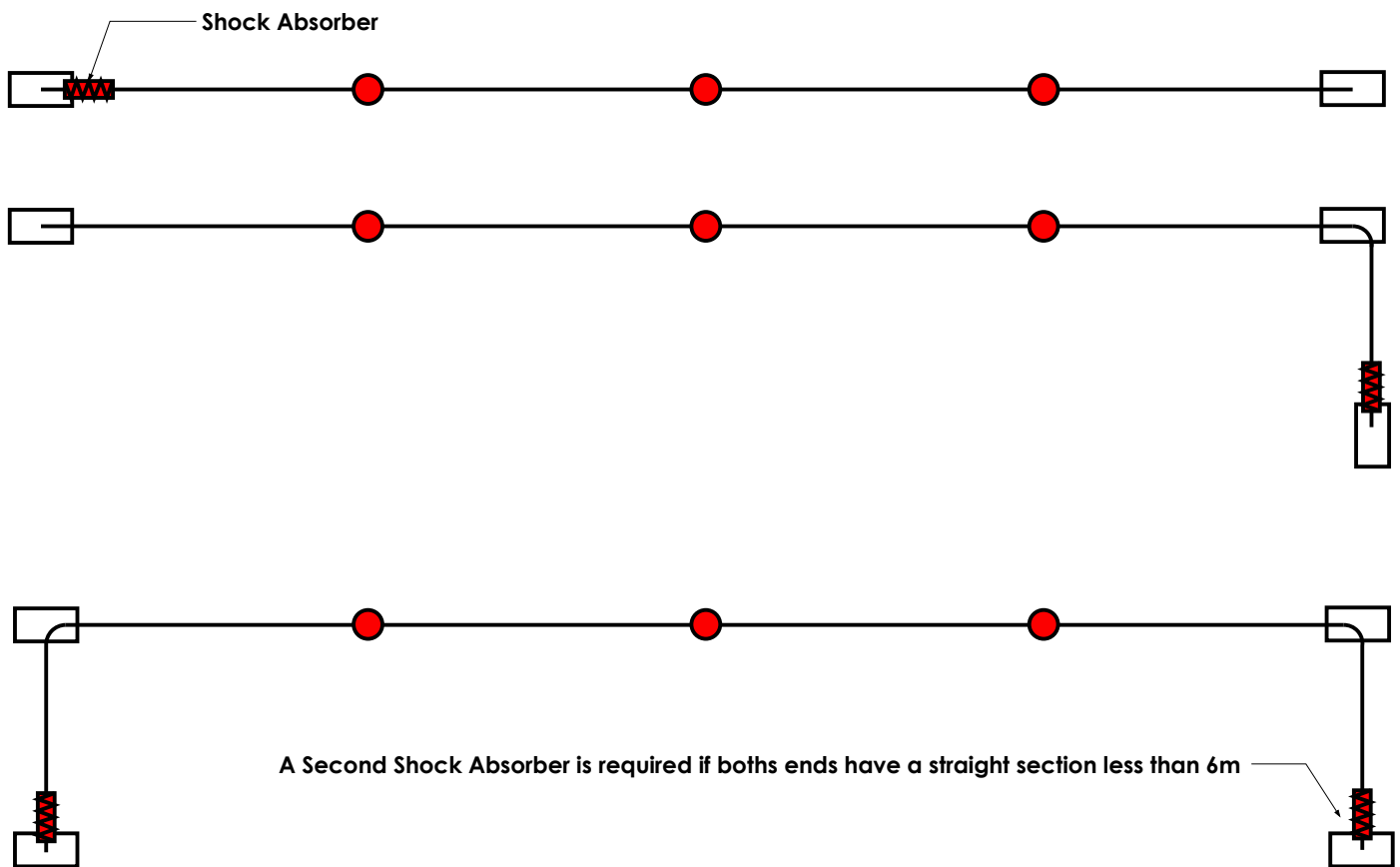
COMPONENT DETAILS

End termination configurations



- The tensioner/shock absorber can be installed on either end of the static line however if there is a corner, the shock absorber must be installed on the shorter side of the static line.
- The tension indicator allows the line to be tensioned between 70 - 95kg. The disc will be able to turn once correct tension is accomplished.
- The shock absorber must always be first in line on the system.

Shock absorber installation details

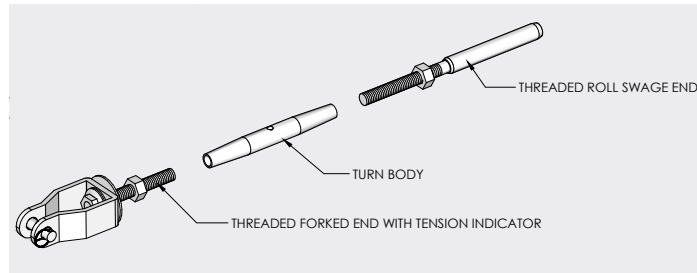


- For a straight line system: the shock absorber can be installed on either end of the static line.
- Static line with corner: the shock absorber must be installed on the shorter side of the static line.
- The tension indicator allows the line to be tensioned between 70 - 95kg. The disc will be able to turn once correct tension is accomplished.

END TENSIONER ASSEMBLY DETAILS

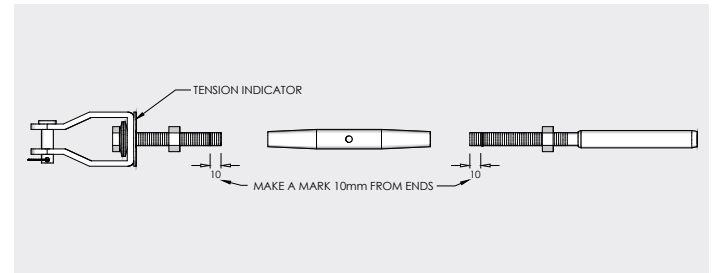
Step 1

Disassemble 2 threaded sections.



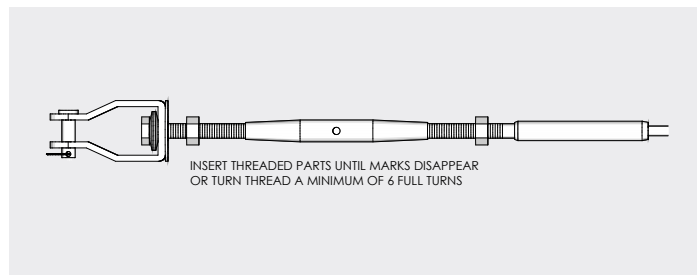
Step 2

Make a mark on the threads, 10mm from the ends.



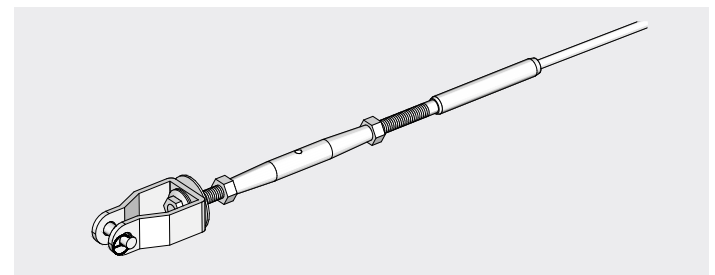
Step 3

Insert threaded parts until marks disappear or turn thread a minimum of 6 full turns in bottle screw on each side.



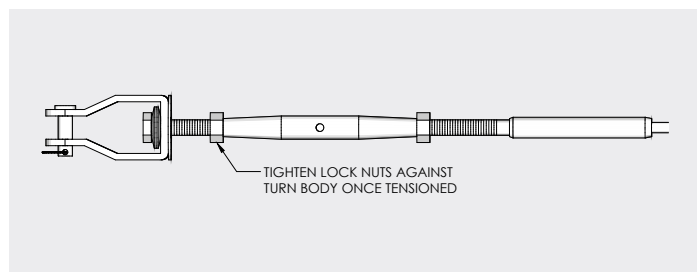
Step 4

The end tensioner and other components can now be assembled to get the correct cable length.



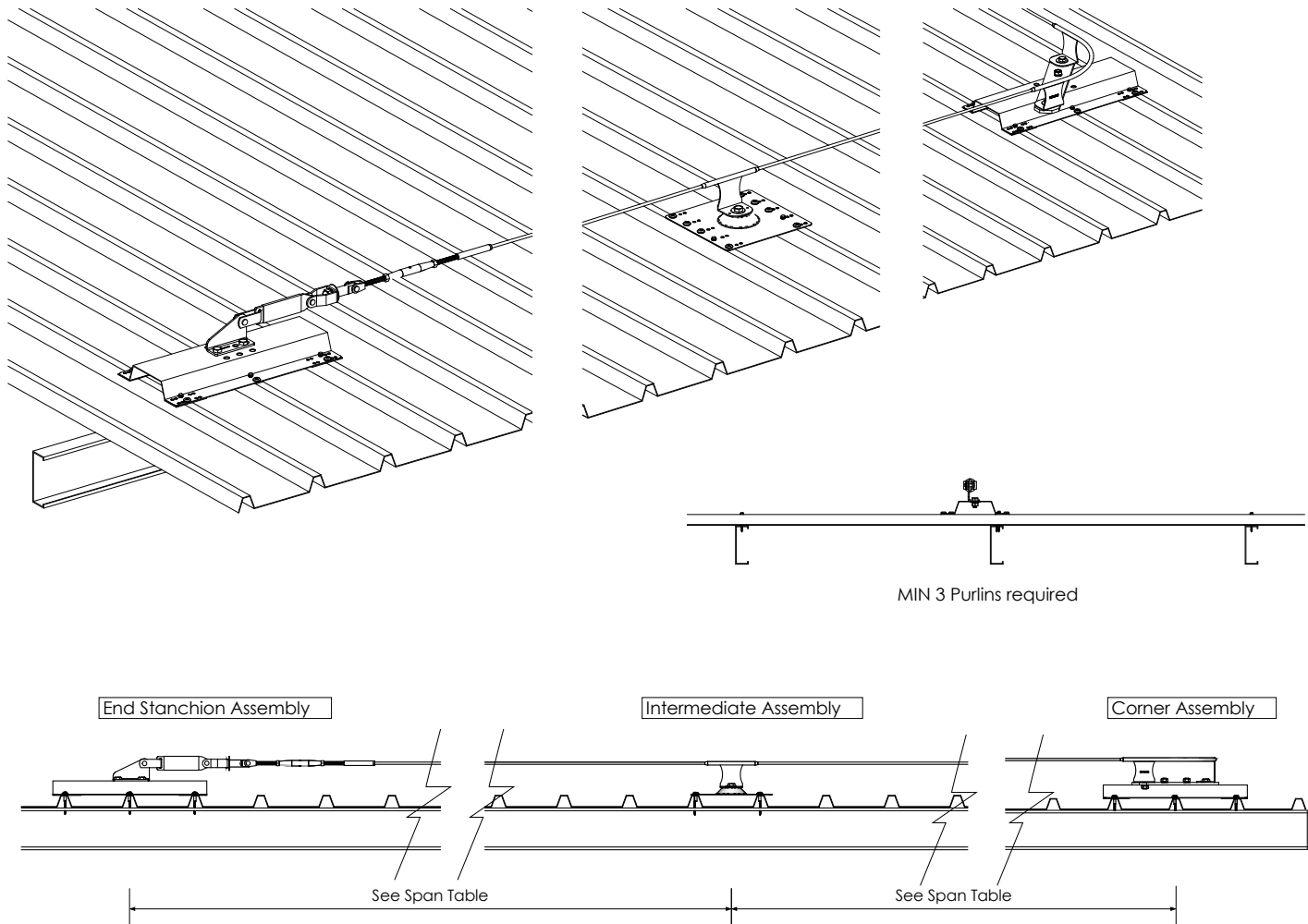
Step 5

Once the cable is connected on both ends and tensioned, tighten up the lock nuts against the turn body.

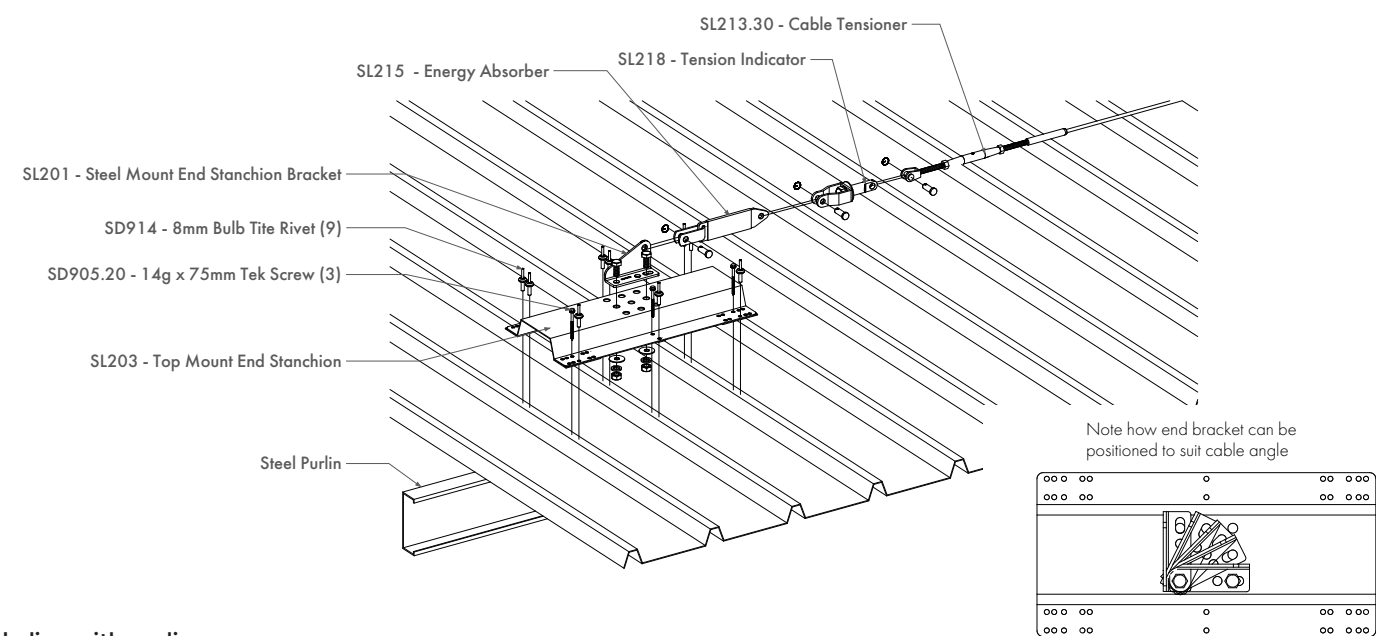


METAL DECK STATIC LINE INSTALLATION PROCEDURE

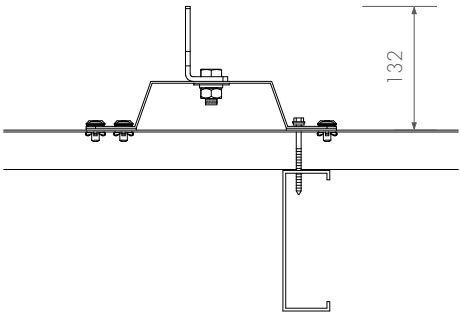
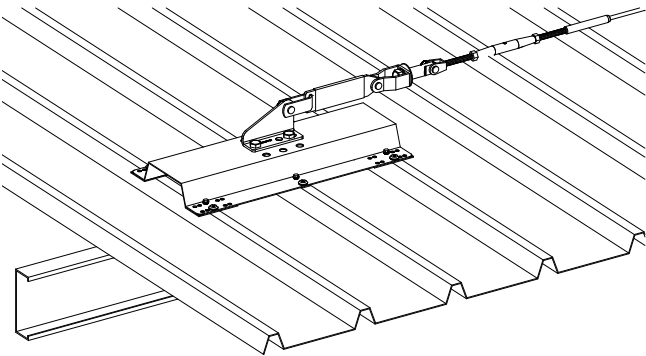
Assembly overview



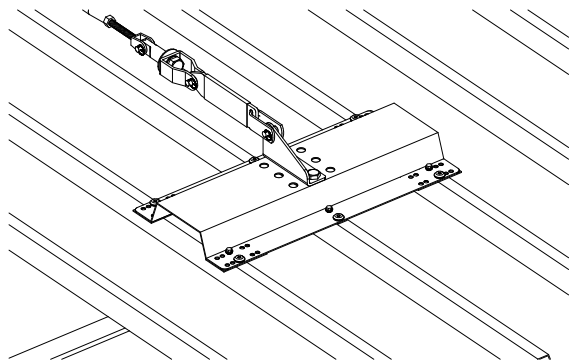
End stanchion assembly



In line with purlins

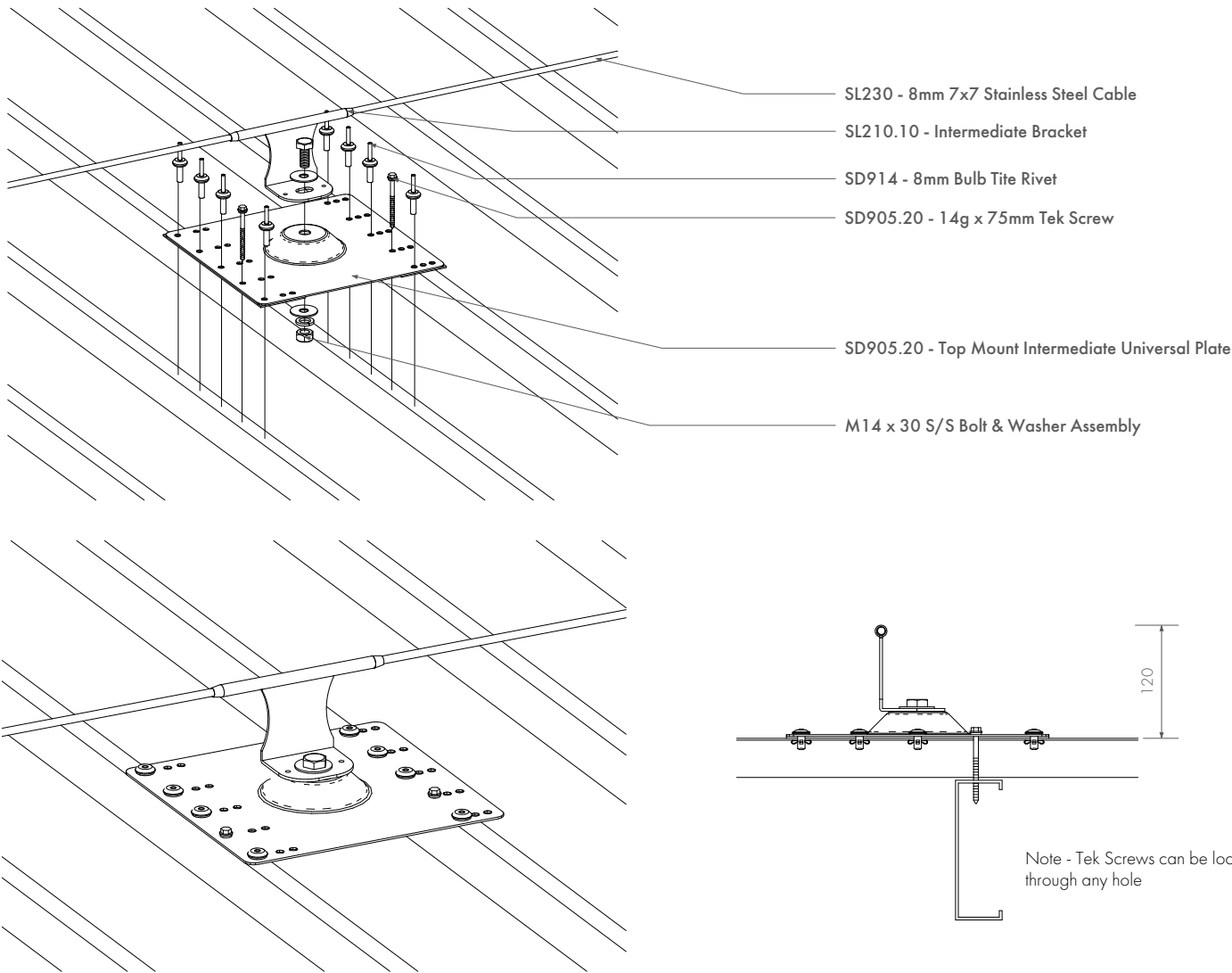


Across purlins

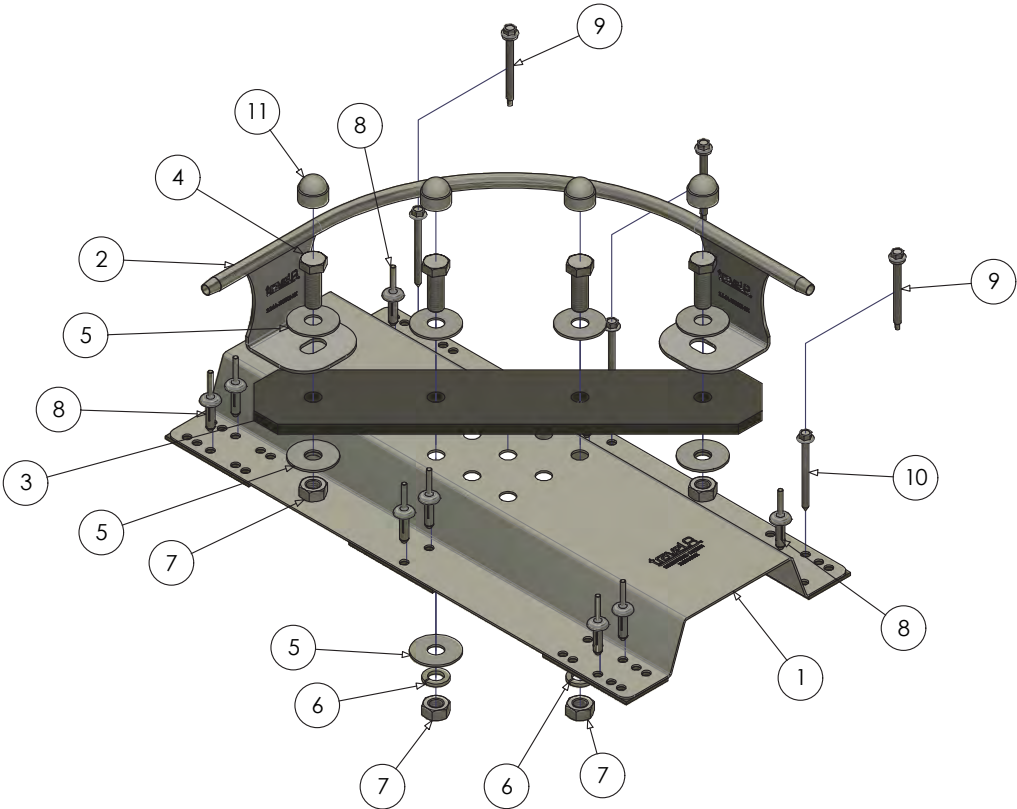


Note - Tek Screws can be located through any hole

Intermediate assembly

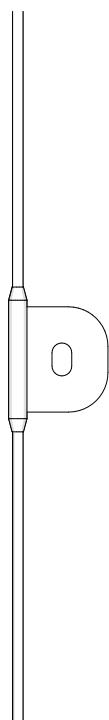
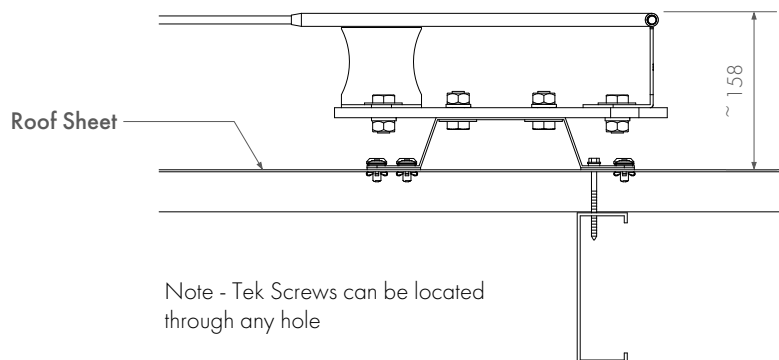


Corner assembly

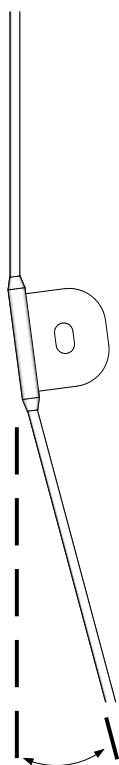


Item	Item code	Qty	Description
1	1220S	1	Top mount stanchion plate with tape
2	SL224A	1	Bolt on corner module
3	SL1332	1	Corner module flat bar 430
4	10118	4	Bolt hex M14 x 40 - SS304
5	1135	8	Washer penny M14 - SS304
6	1144	4	Washer spring M14 - SS304
7	1147	4	Nut hex M14 - A2-70
8	SD914	10	Bulb type rivet dia - 7.65 - SS304
9	SD905S	3	Screw tek 14-14x75 - SS
10	SD905T	3	Screw T17 14-10x75
11	SD935.14	4	Nut cap M14

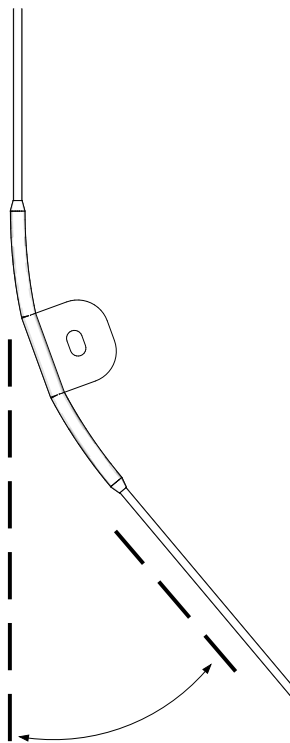
Corner assembly



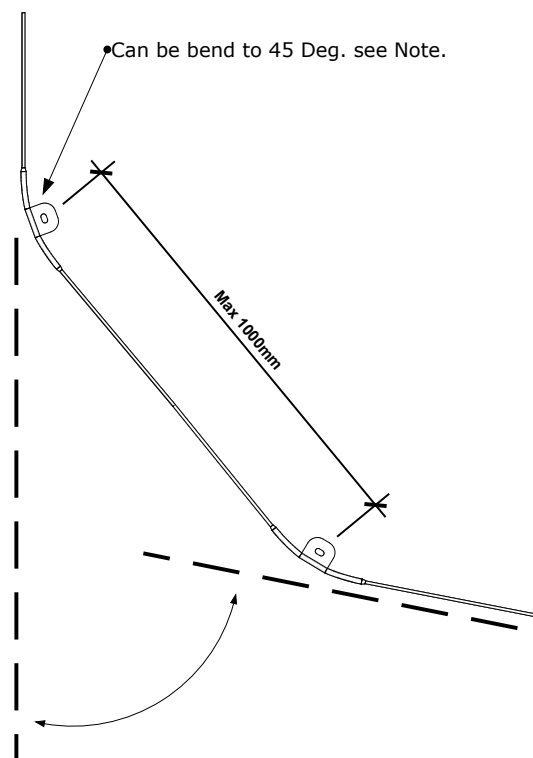
0 Degrees using Std intermediate bracket



Max 15 Degrees using Std Intermediate Bracket



Max 30 Degrees using 1 x Adjustable Intermediate Bracket



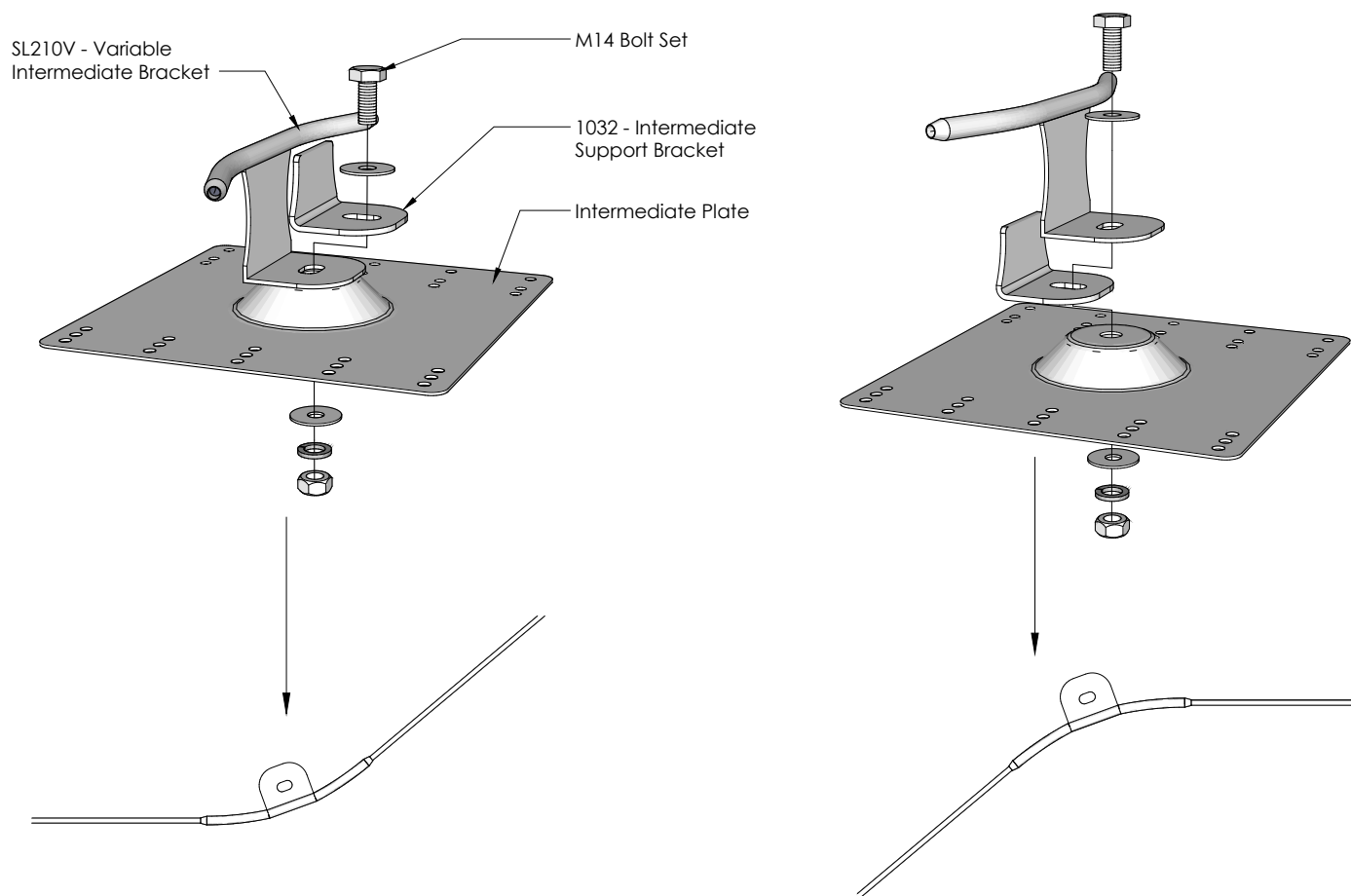
31 - 90 Degrees using 2 x Adjustable Intermediate Brackets

NOTE:- Adjustable Intermediate can go to 45 Deg if there is another intermediate within 1000mm.

Cable diversions with intermediates

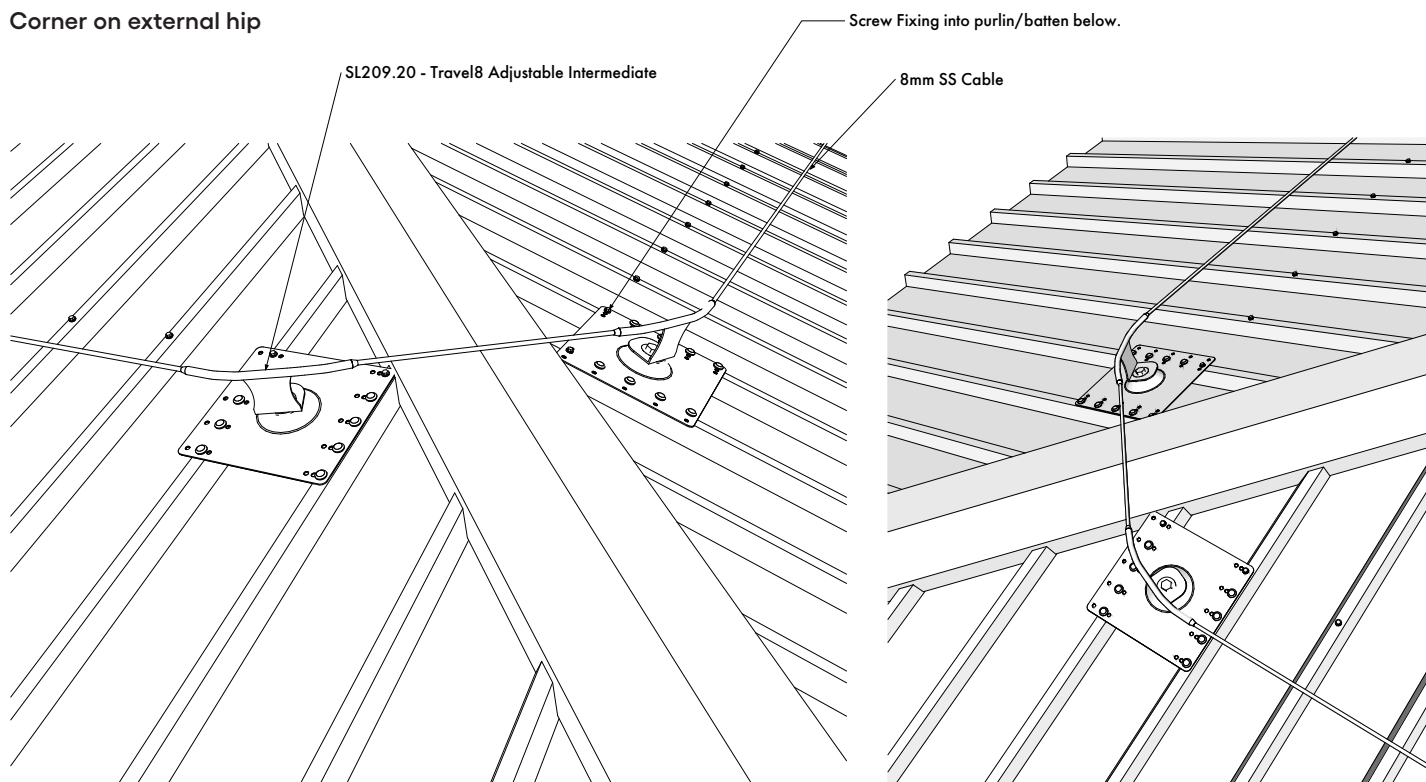
IF THE SL210V (VARIABLE BRACKET) IS USED IN ANY APPLICATION, THE INTERMEDIATE SUPPORT BRACKET MUST BE USED.

NOTE THE ORIENTATION OF THE BRACKET

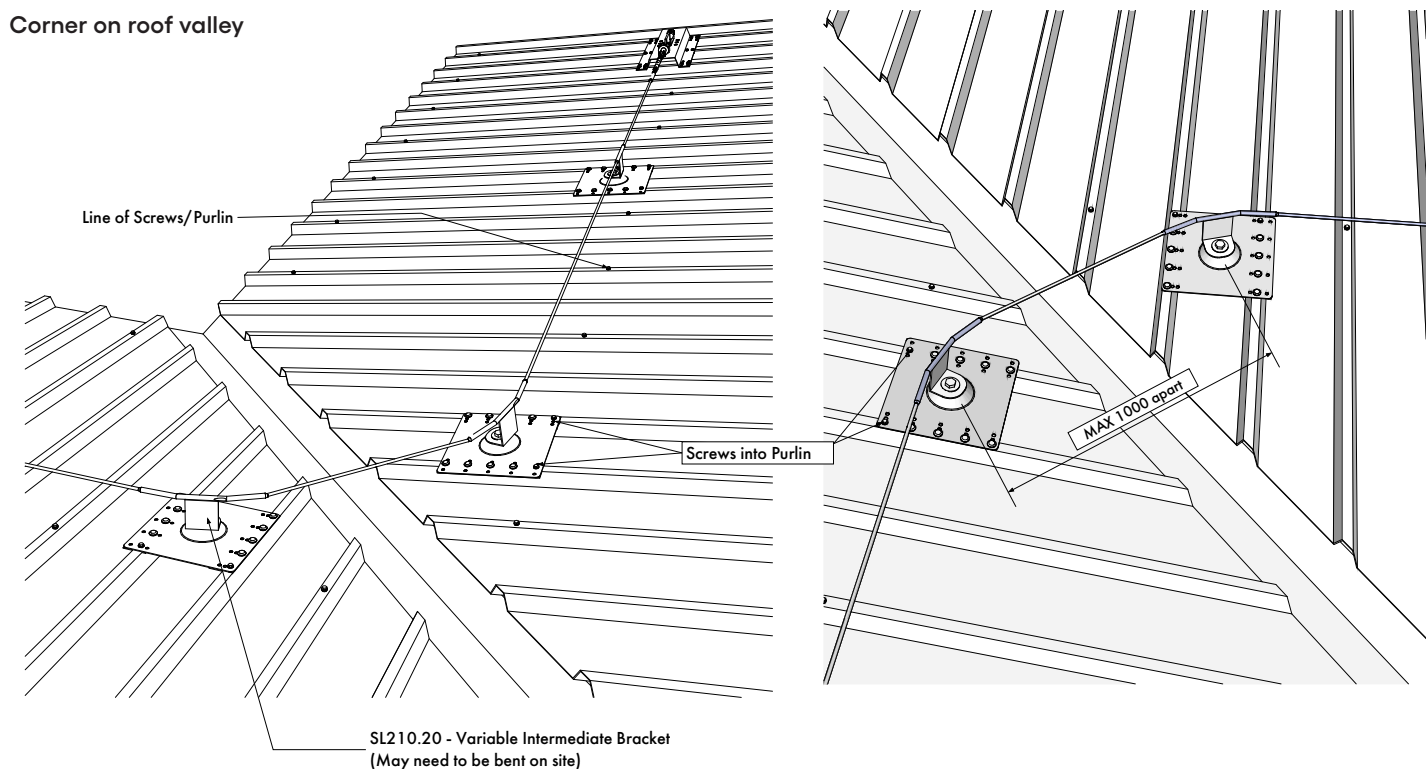


The strengthening plate is also required for concrete type installations.

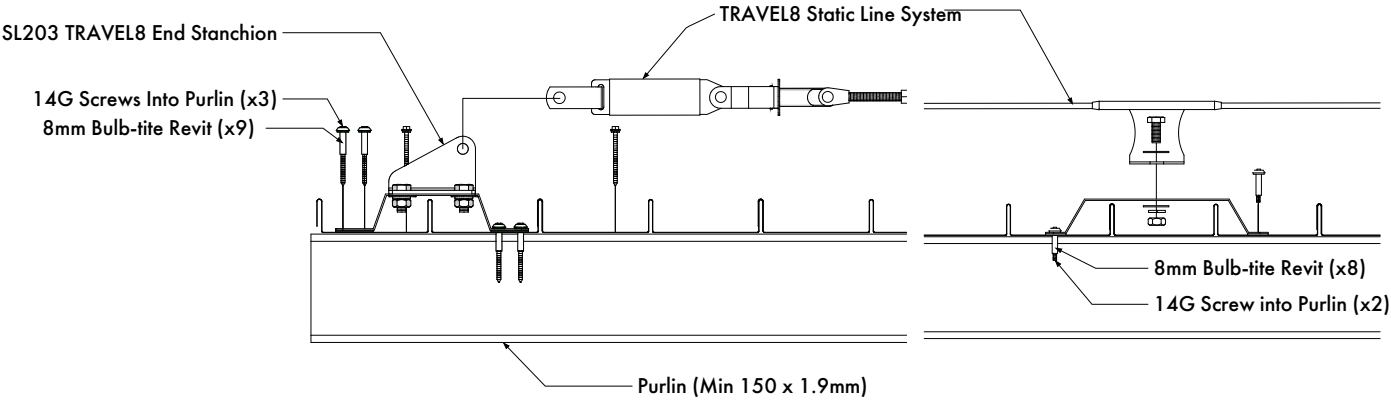
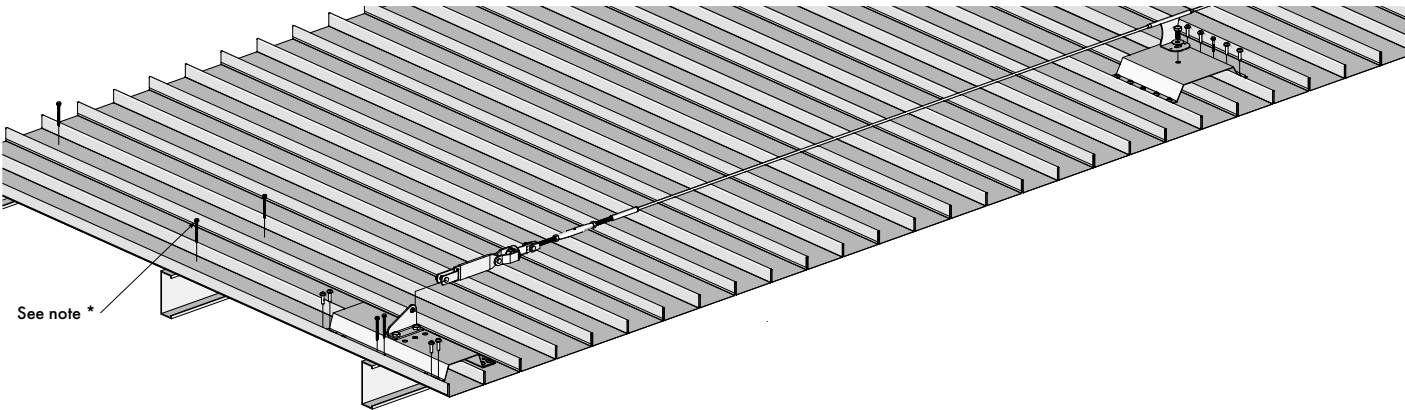
Corner on external hip



Corner on roof valley

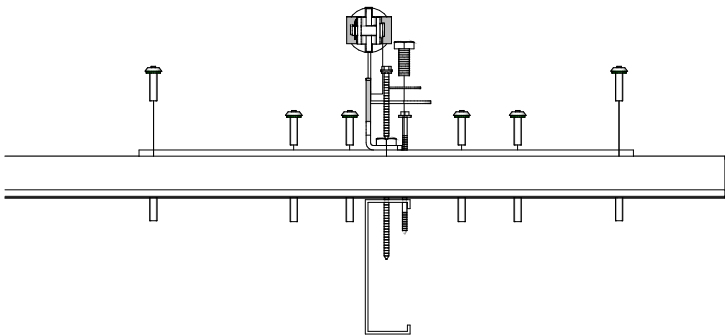


STATIC LINE ON LONGLINE® ROOF DECK INSTALLATION PROCEDURE



End Stanchion Detail

Intermediate Detail

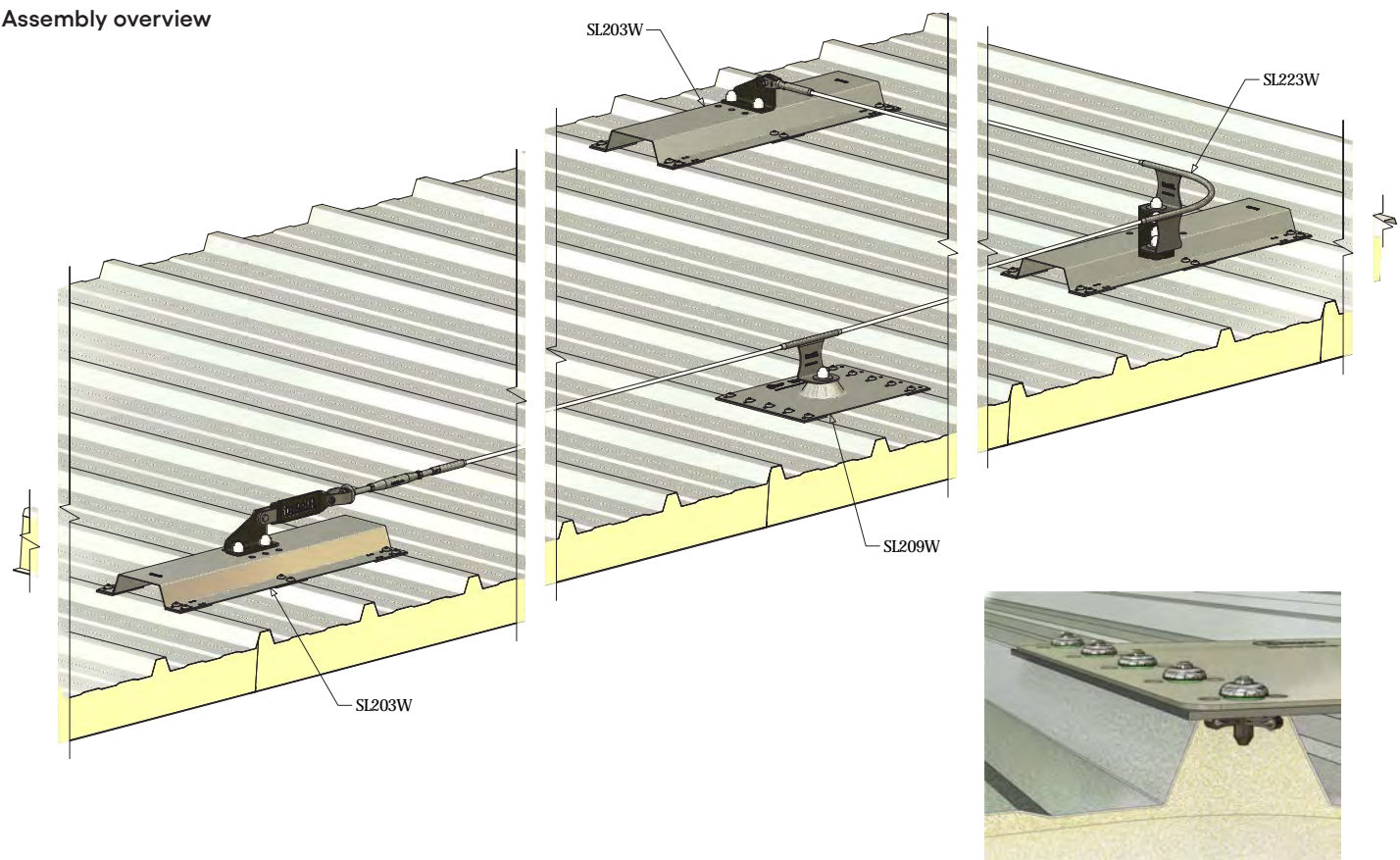


End Detail

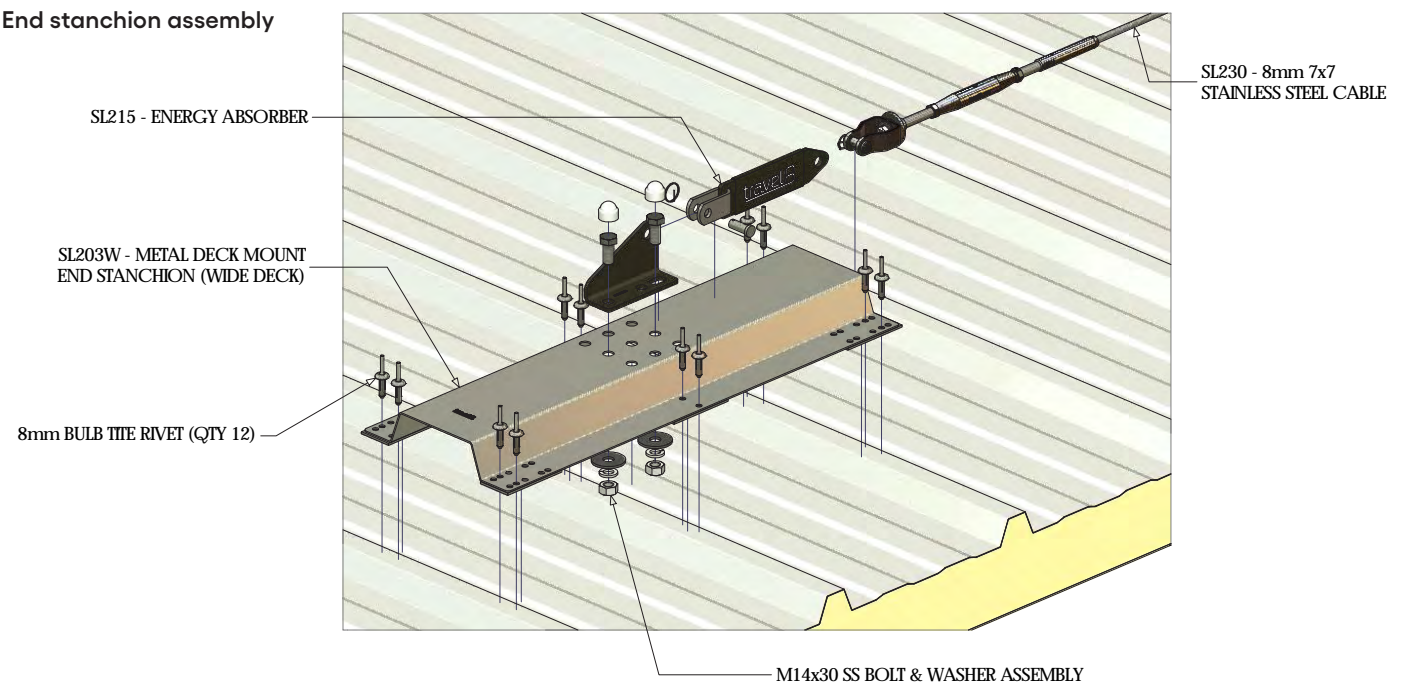
As this is a clip fix type roof, additional fixings may be required to fix the roof sheet to the structure below.

STATIC LINE ON INSULATED ROOF PANEL INSTALLATION PROCEDURE

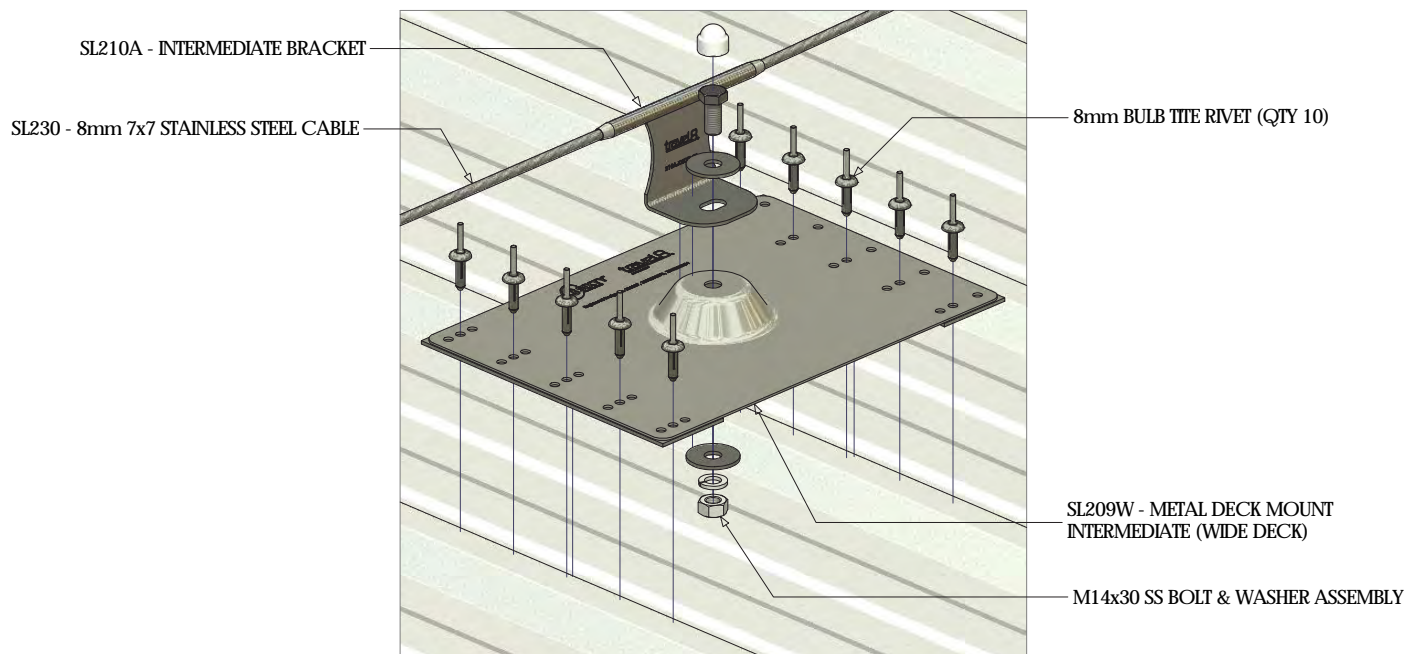
Assembly overview



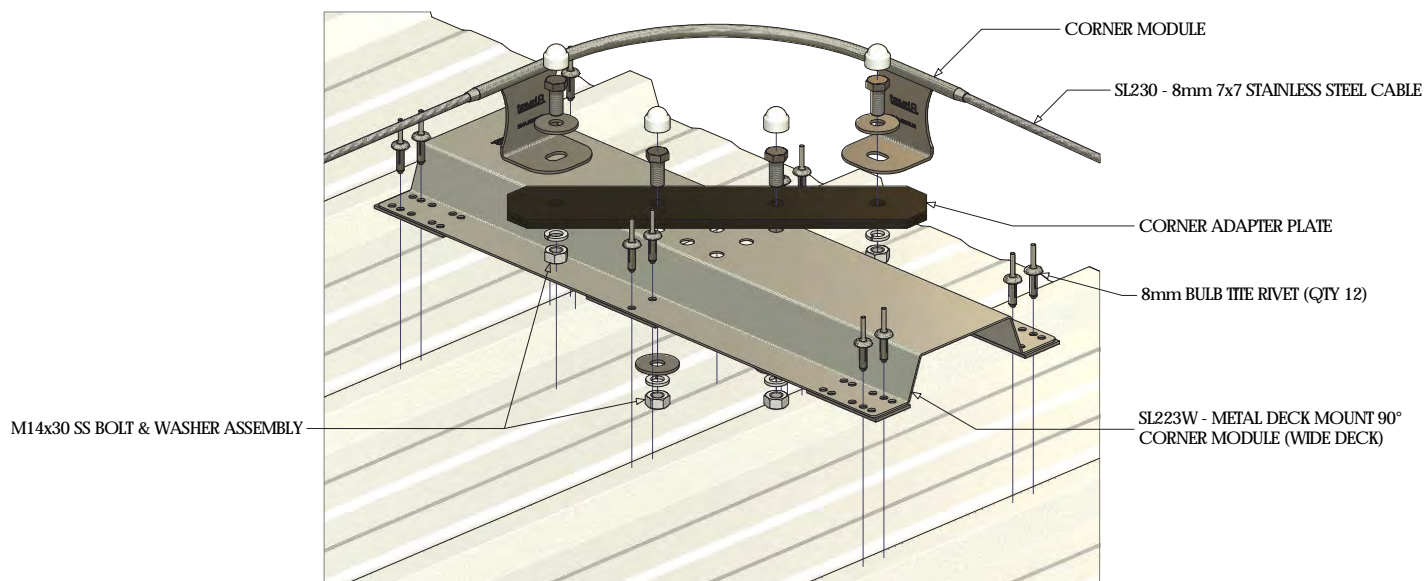
End stanchion assembly



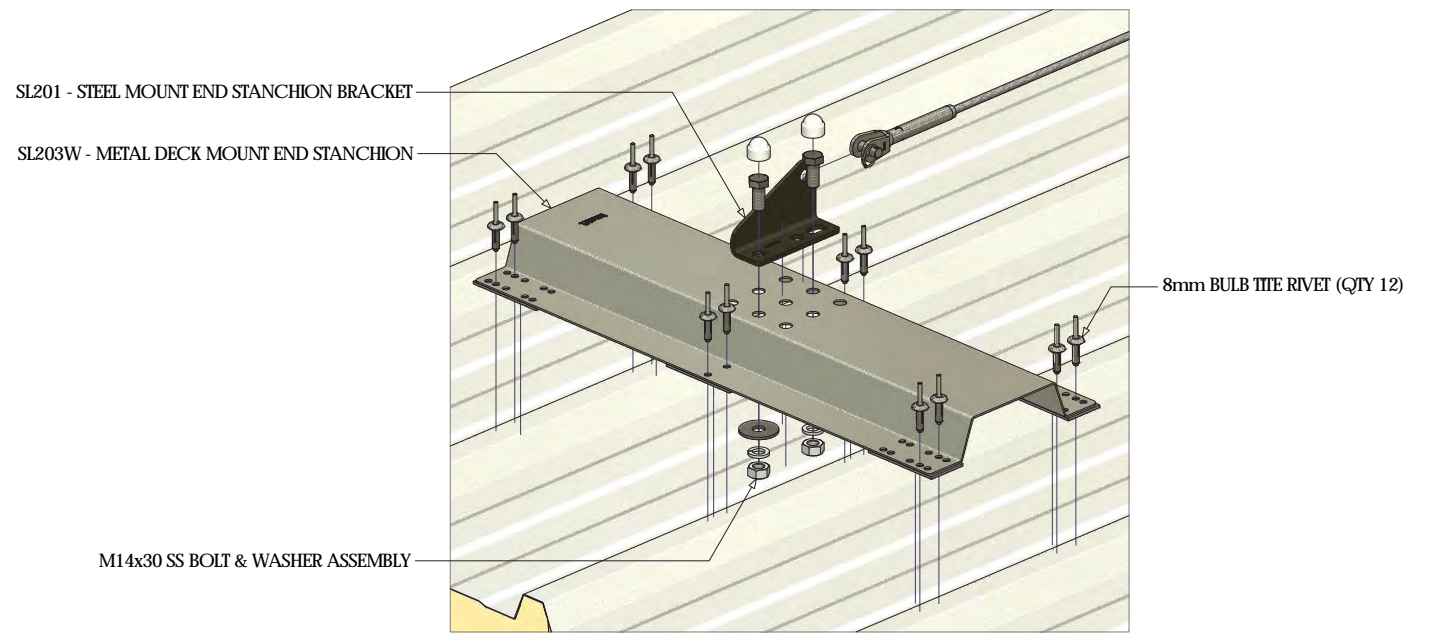
Intermediate assembly



Corner assembly

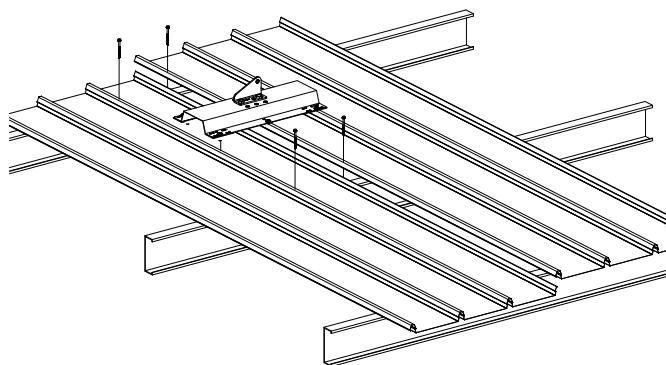
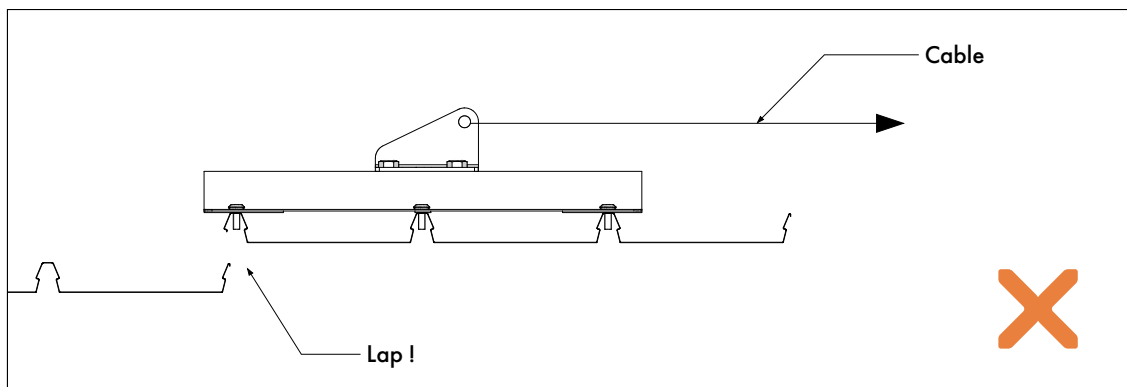
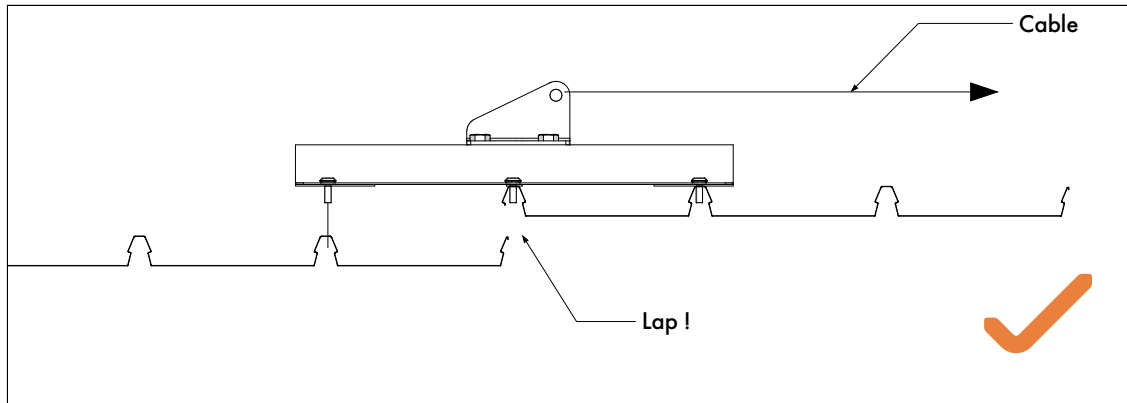


End stanchion assembly



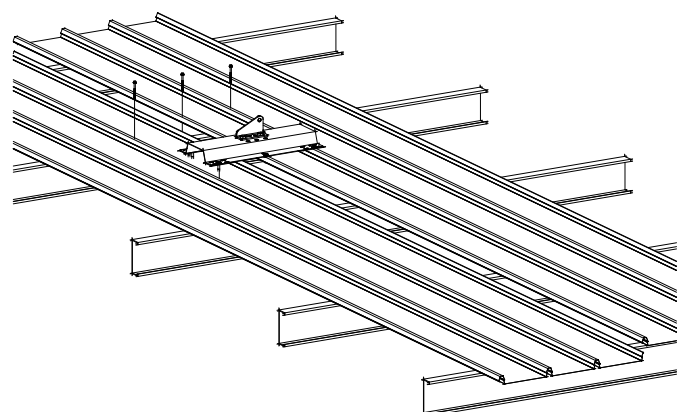
RIVETS ONLY STATIC LINE CLIP FIX ROOFING INSTALLATION PROCEDURE

Correct rivet placement



Details for 3 or 4 purlins

Min 4 Fixings into purlins - Fixings into purlin above and below anchor plate

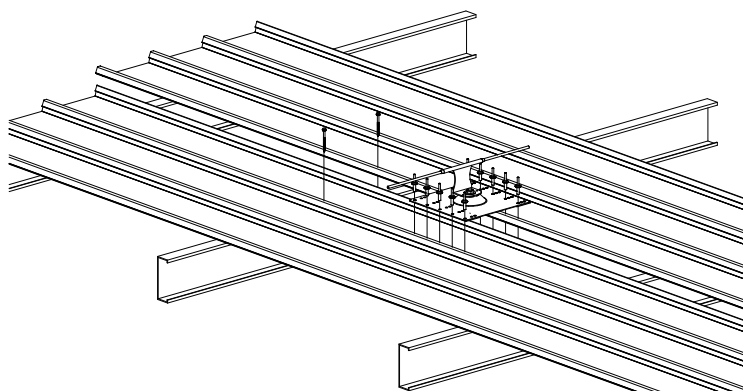
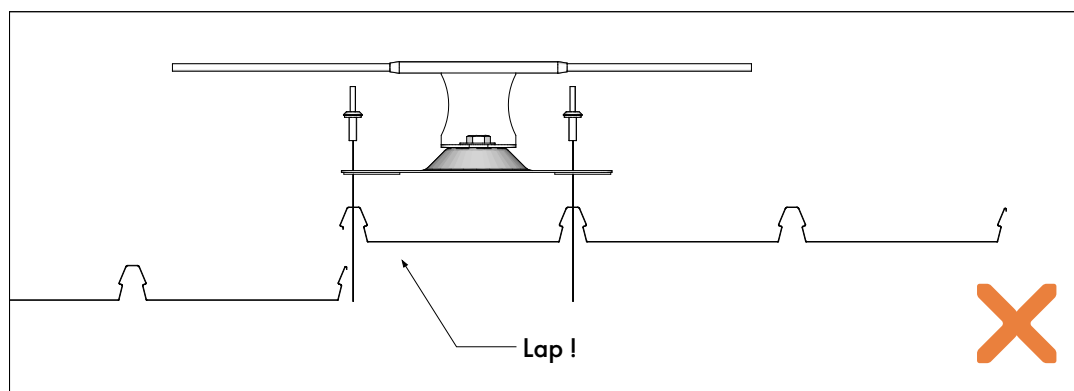
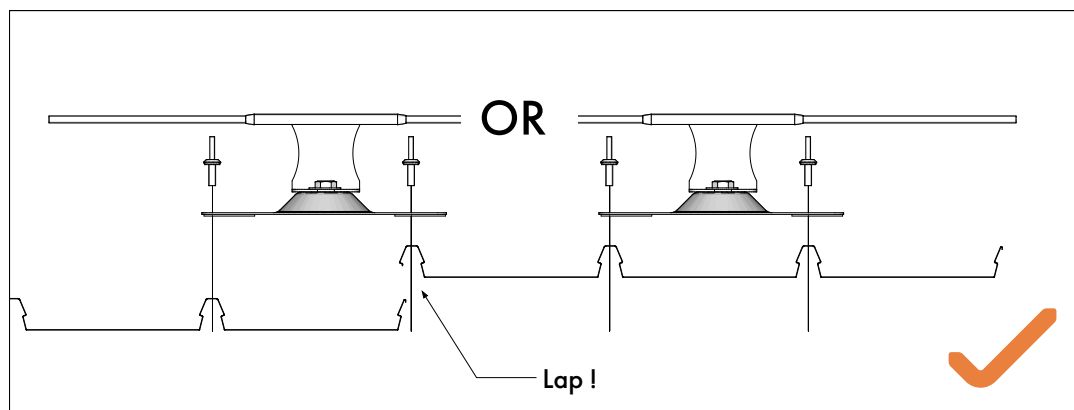


5-9 purlins - 3 Fixings into purlin above or below anchor plate (Into closest purlin)

10+ Purlins - No additional fixings required

Additional screws must be inserted through the roof sheet and into the purlin as well. All anchor plates should be fixed to the purlins where possible.

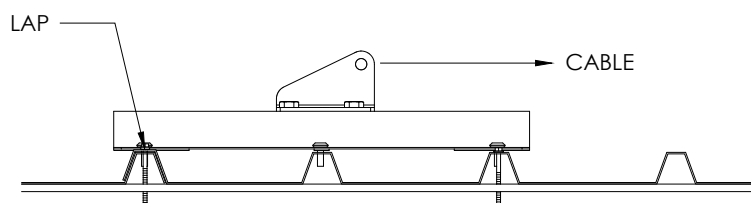
Intermediate assembly



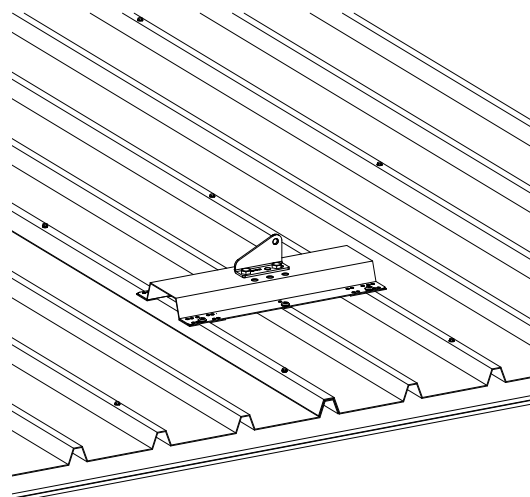
Details for 3 - 9 purlins
2 x 14G Fixings into purlin above OR below anchor plate
(Refer to drawing no. D8467 for further details)

Additional screws must be inserted through the roof sheet and into the purlin as well. All anchor plates should be fixed to the purlins where possible.

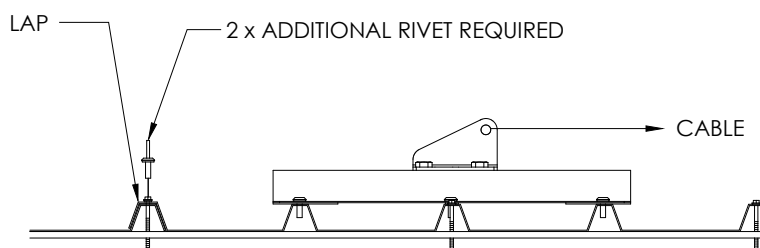
End stanchion assembly



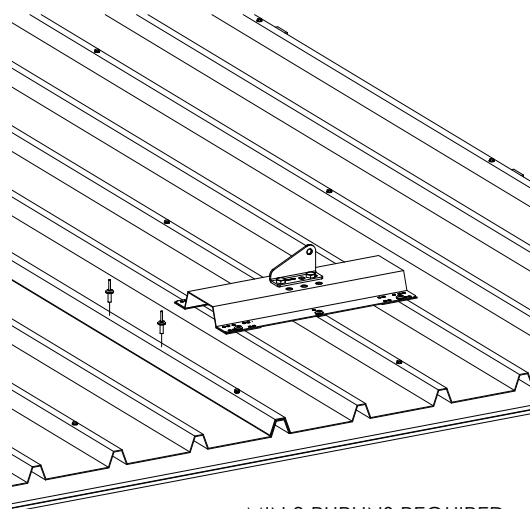
IN THIS CASE THE PLATE IS FIXED ON THE LAP SO NO ADDITIONAL RIVETS ARE REQUIRED.



MIN 3 PURLINS REQUIRED

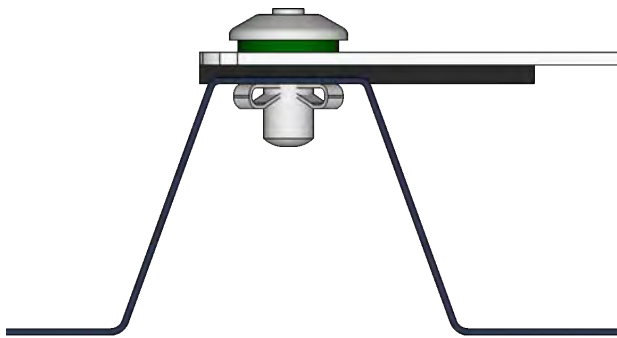


IF THE ANCHOR PLATE IS NOT RIVETED OVER A LAP OR THE LAP IS DIRECTLY BEHIND THE ANCHOR, AN ADDITIONAL 2 RIVETS MUST BE FIXED THROUGH THE LAP.



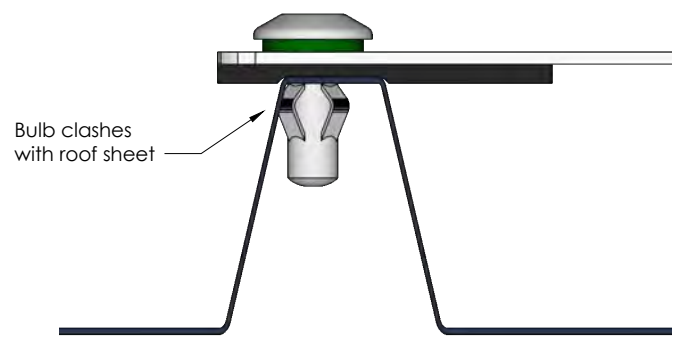
MIN 3 PURLINS REQUIRED

RIVET INSTALLATION DETAILS



Correct

- The stem can be seen just above or just below the top (max 5mm below).
- The rivet has ‘bulbed out’ correctly.
- The rivet is sealed off correctly.
- It is recommended that silicone is applied if the rivet is 3mm or more below.
- If you are unsure, double check by looking at the seal under the rivet. If it is squashed and rivet feels tight then it has bulbed out correctly.



Incorrect

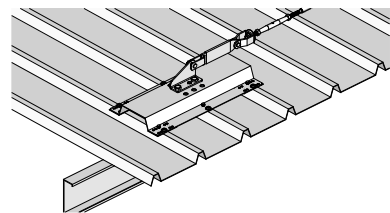
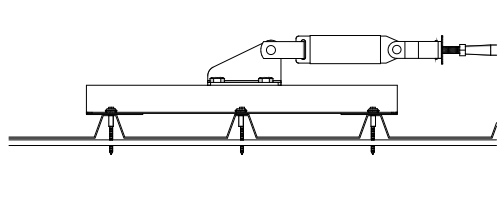

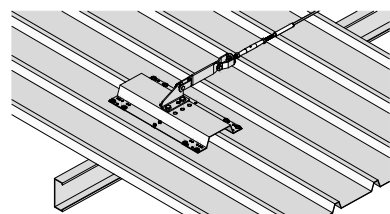
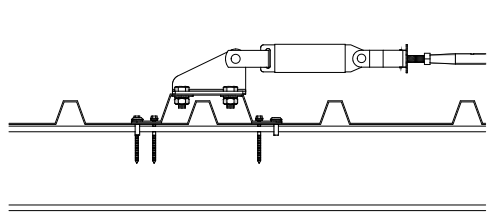

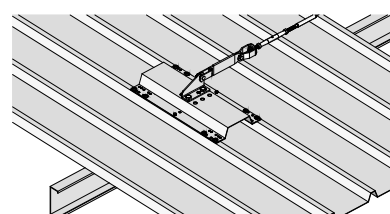
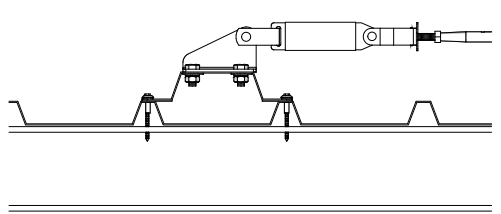

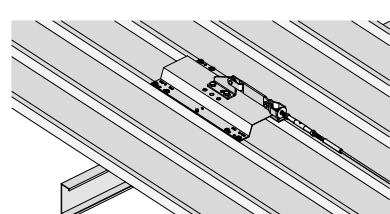
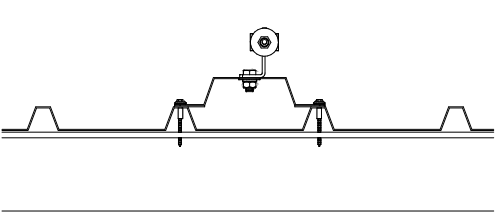

- The stem is too far below the surface.
- The rivet has NOT ‘bulbed out’ correctly and therefore has no strength.
- The rivet is not sealed off adequately which could pose potential leak issues.

Note

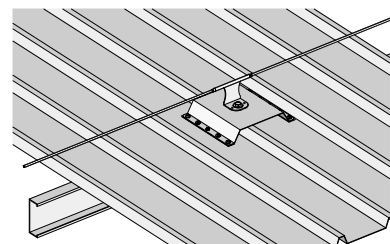
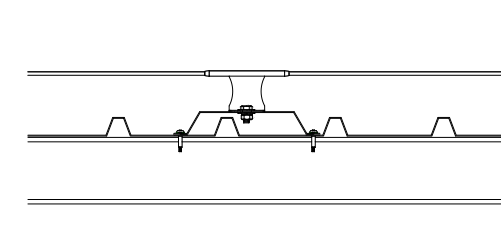

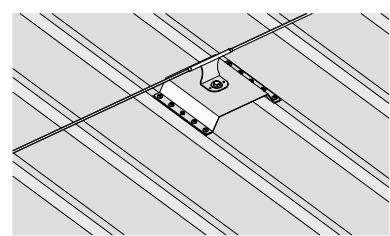
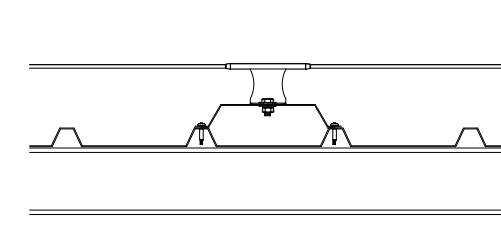

The cause of this is often due to the ‘bulb’ not being able to expand out as it clashes with the side of the roof sheet. The rivet must go into the centre to avoid this happening



TOP HAT ANCHOR PLATE ORIENTATION

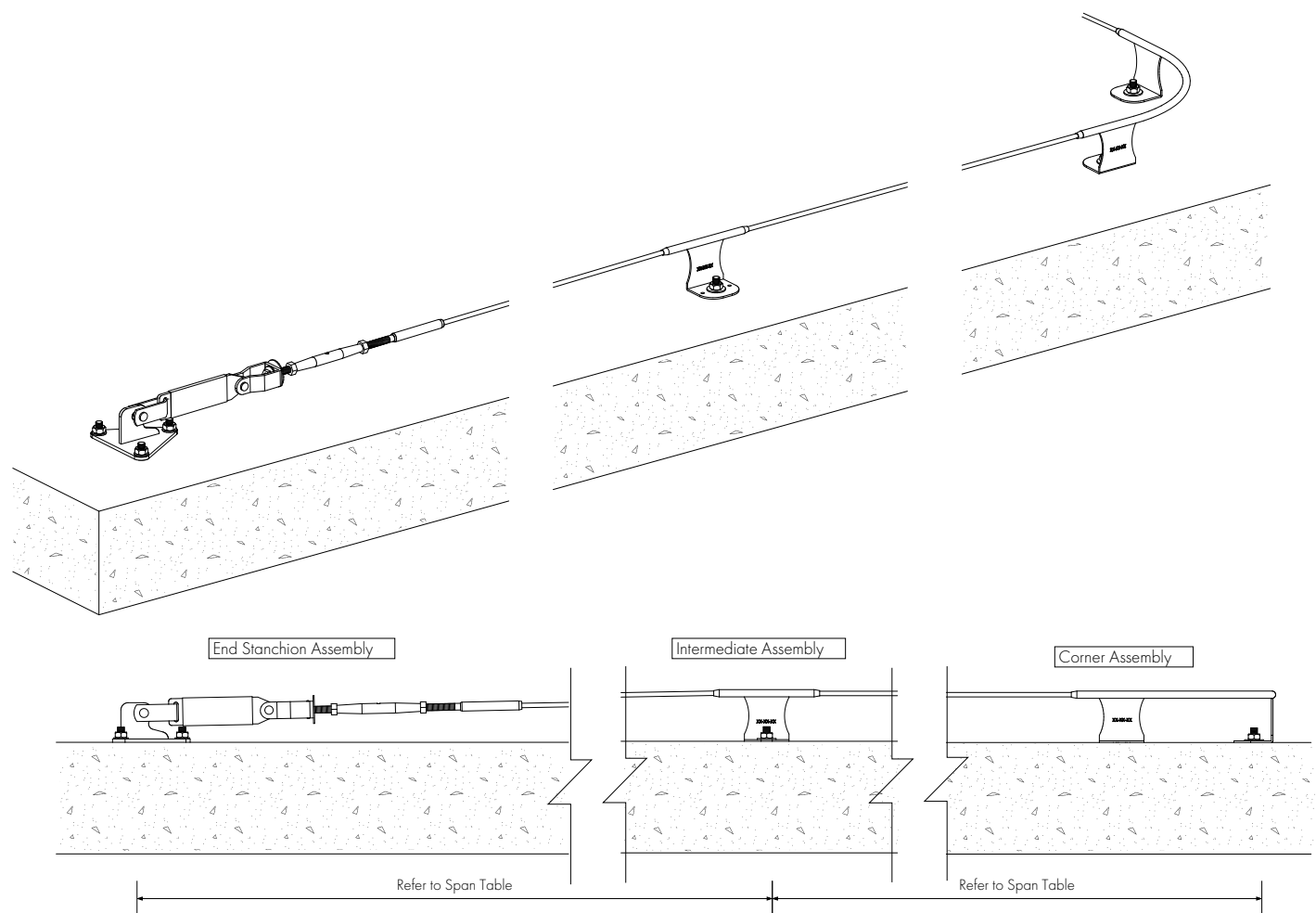
			
			
			Reason <ul style="list-style-type: none"> – On 2 crests only – Only 2 fixings into purlin
			Reason <ul style="list-style-type: none"> – On 2 crests only – Only 2 fixings into purlin

Wide deck top hat plate

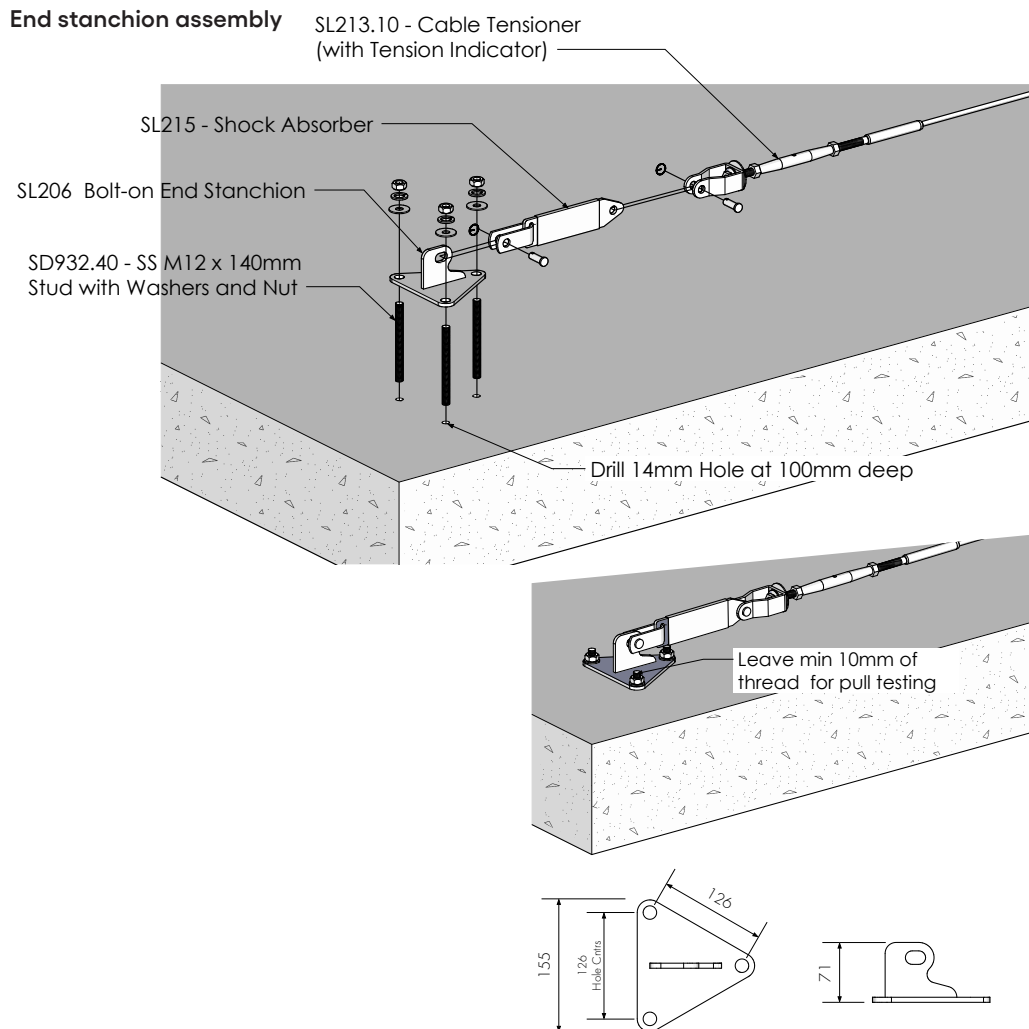
			
			

CONCRETE MOUNT STATIC LINE INSTALLATION PROCEDURE

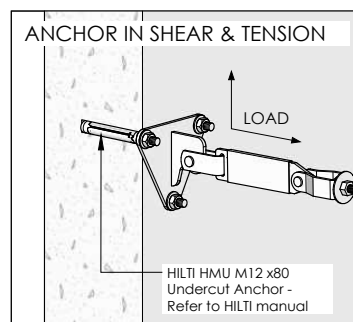
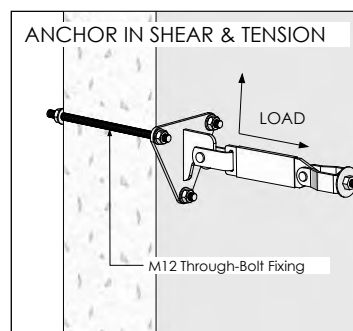
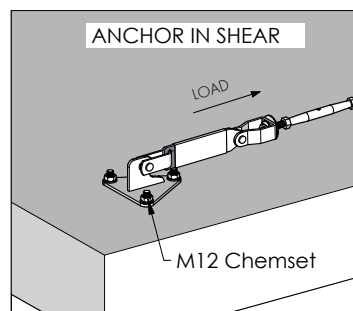
Assembly overview



End stanchion assembly



NOTE
LOAD DIRECTION IS IMPORTANT -
SEE BELOW



Structure

All structure needs to withstand loads applied as per load calculation data sheet.
Concrete min 25mpa.

Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

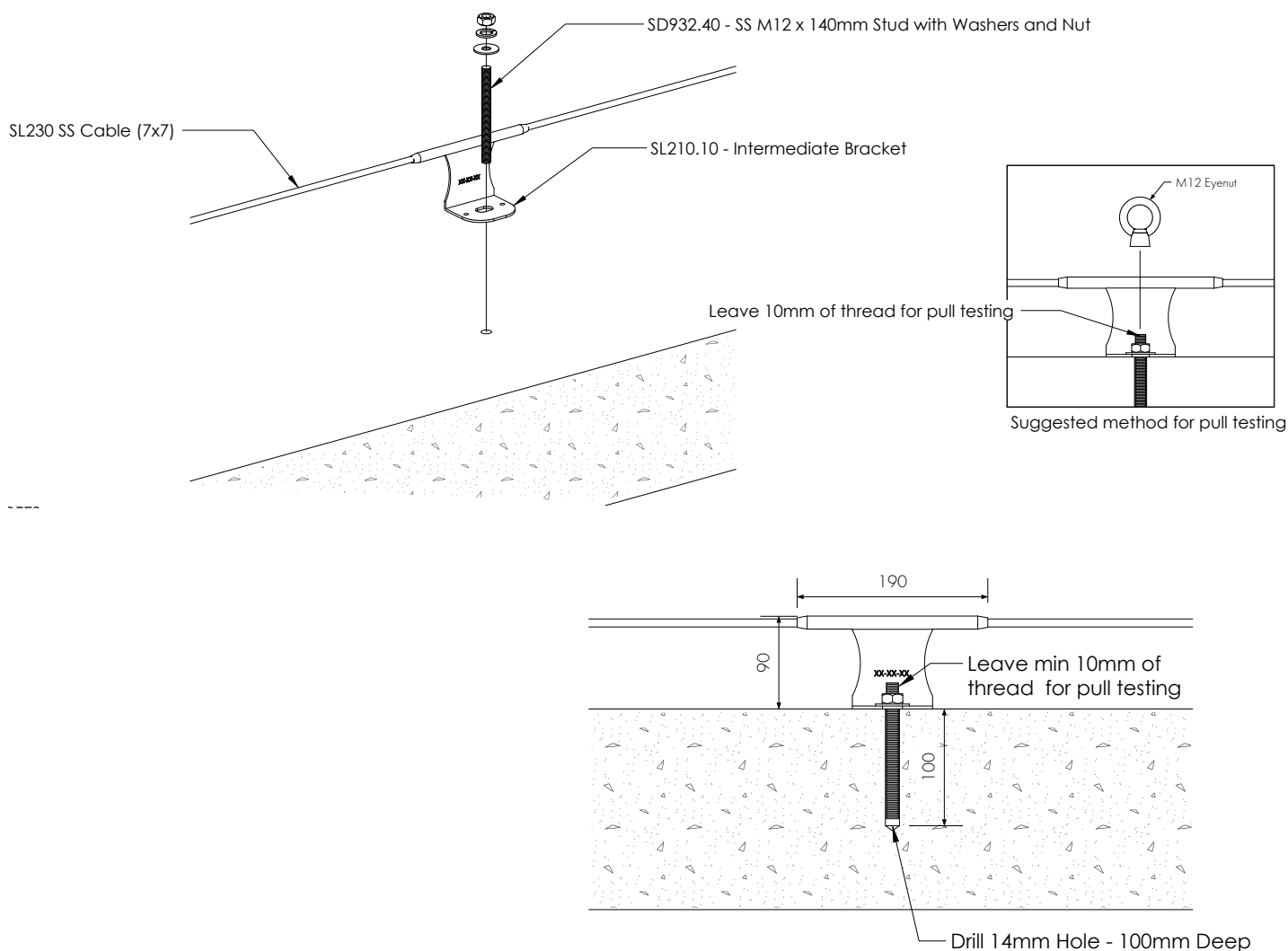
Pull testing

Pull testing for the concrete mount end stanchion anchor can either be done by testing each stud to 3.3kn or pull the whole anchor at the main attachment point to 10kN. Undercut anchors need to be pull tested at the time of installation only.

Epoxy adhesive

Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing.

Intermediate assembly



Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

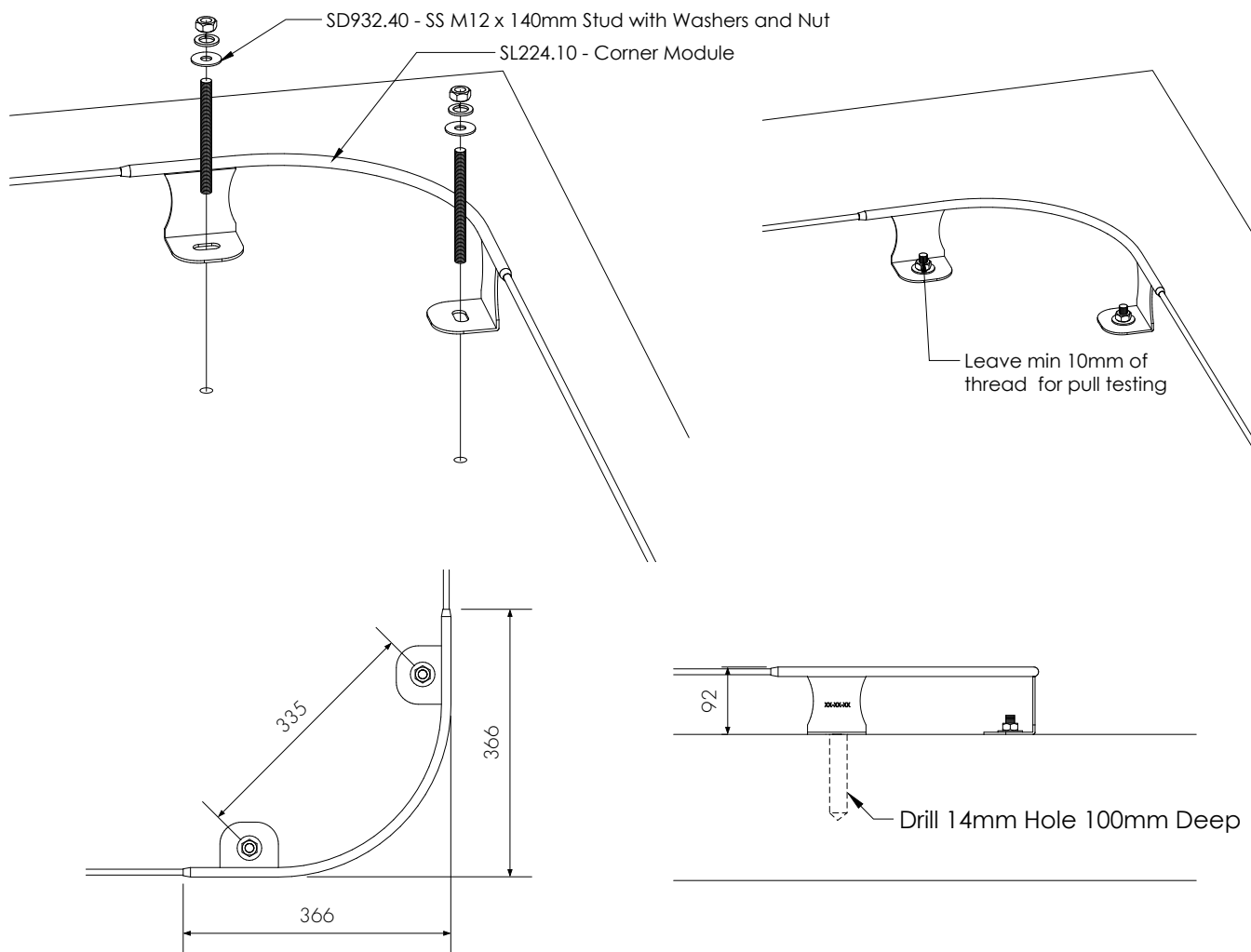
Pull testing

Pull testing for the concrete mount intermediate anchor can be done by using an M12 eye nut as shown. Pull test to 6kN for 3 mins.

Epoxy adhesive

Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing

Corner assembly



Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

Pull testing

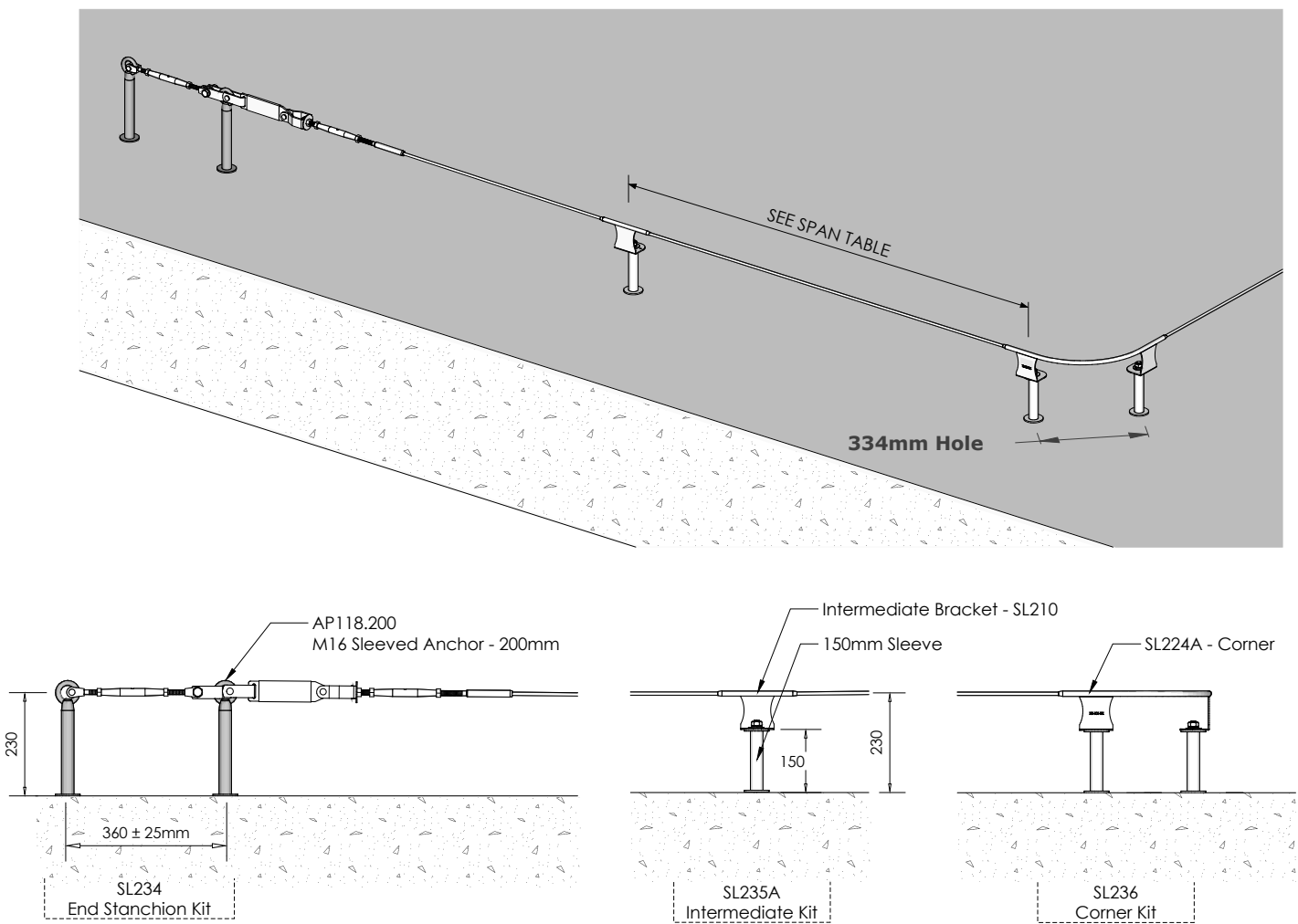
Pull testing for the concrete mount corner anchor can be done by using an M12 eye nut as shown. Pull test to 6kN for 3 mins.

Epoxy adhesive

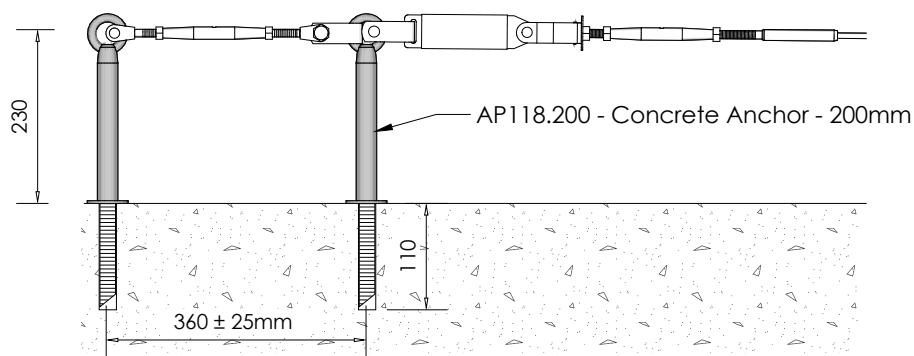
Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing

CONCRETE MOUNT STATIC LINE - RAISED INSTALLATION PROCEDURE

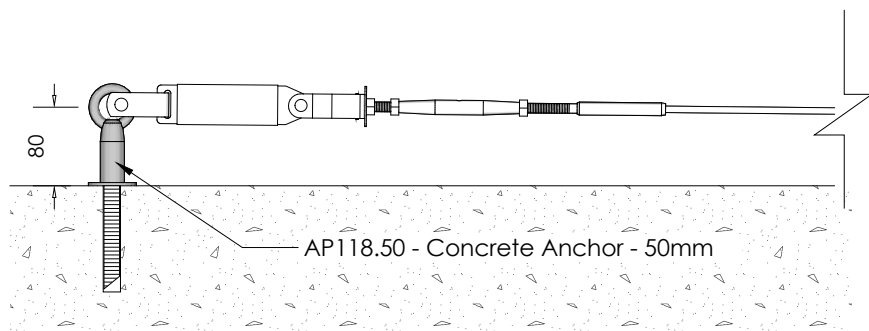
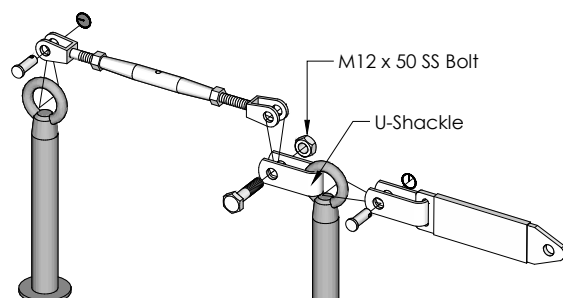
Assembly overview



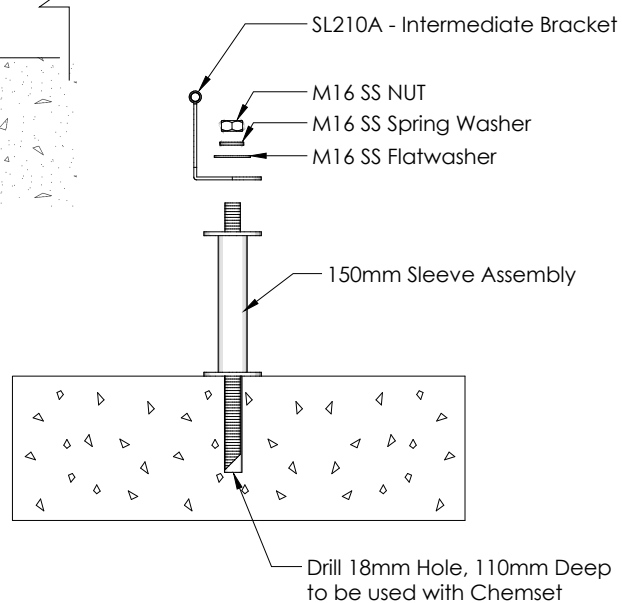
End stanchion assembly



END STANCHION ASSEMBLY GREATER THAN 50MM SLEEVE
REQUIRES 2 ANCHORS - AS SHOWN



END STANCHION ASSEMBLY WITH 50MM SLEEVE
REQUIRES 1 ANCHORS - AS SHOWN



CONCRETE WALL MOUNT STATIC LINE INSTALLATION PROCEDURE

Assembly overview



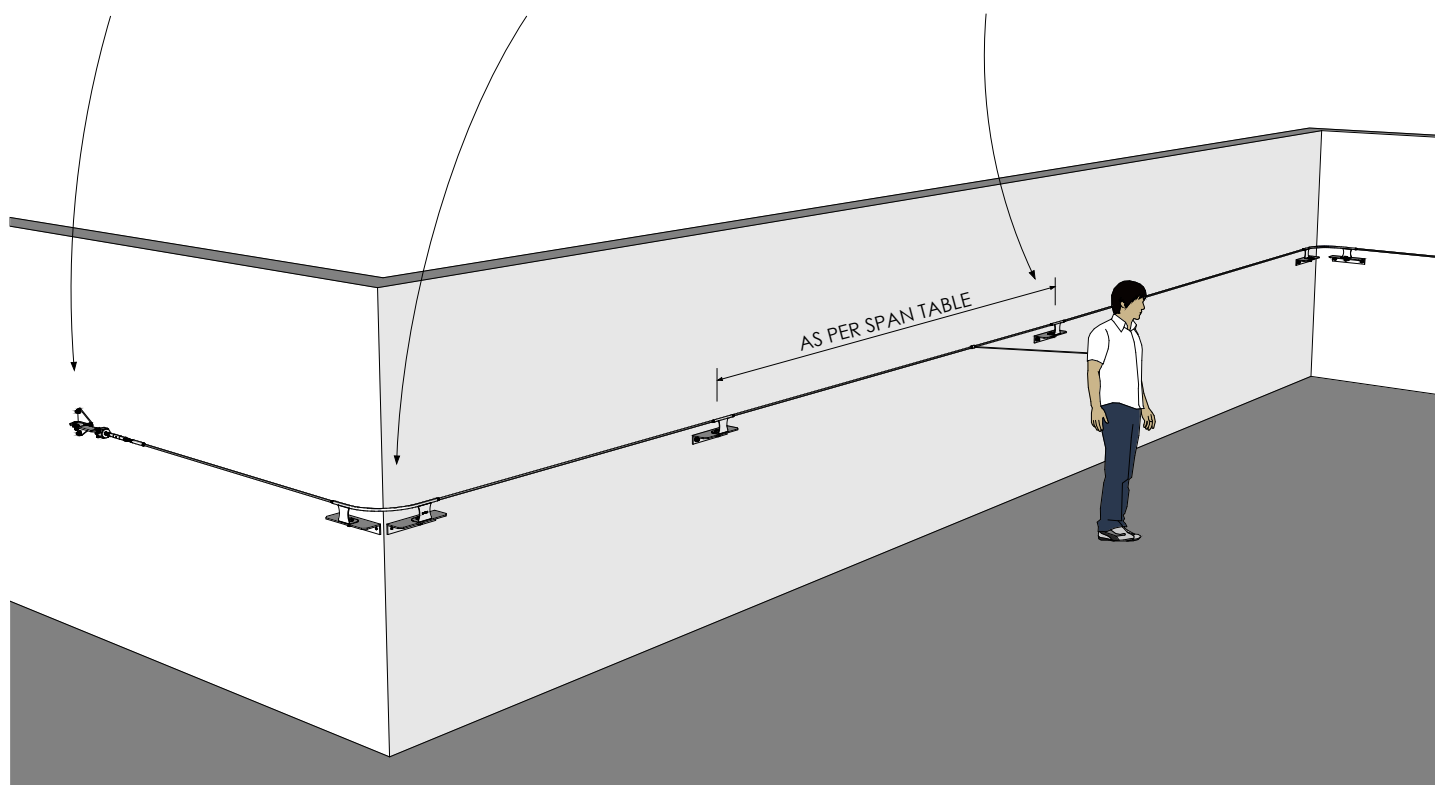
End stanchion



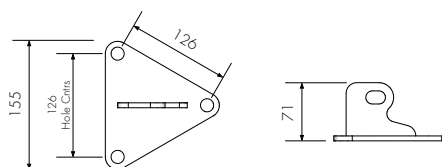
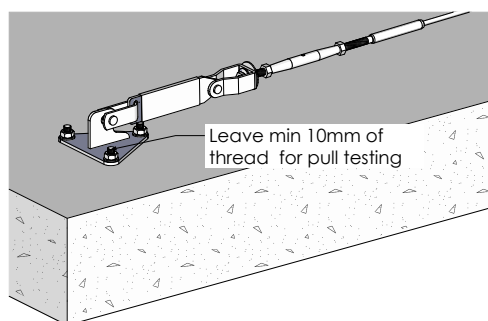
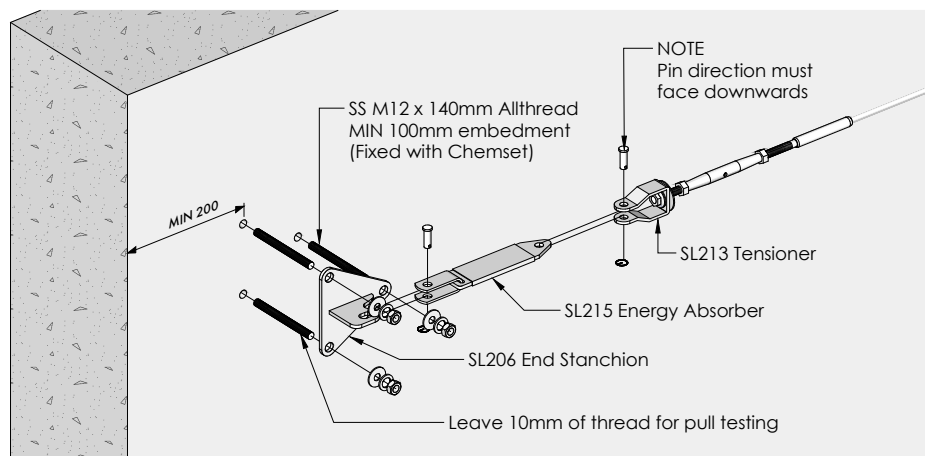
Corner



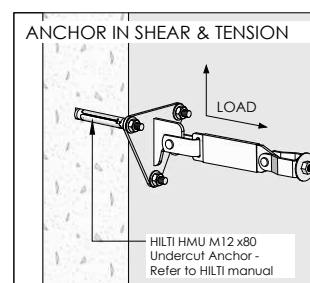
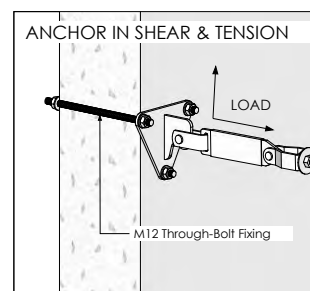
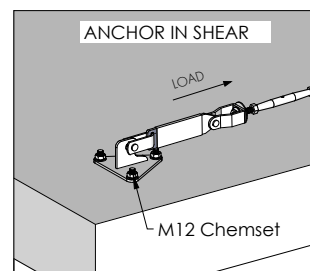
Intermediate



End stanchion assembly



NOTE
LOAD DIRECTION IS IMPORTANT -
SEE BELOW



Structure

All structure needs to withstand loads applied as per load calculation data sheet.
Concrete min 25mpa.

Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

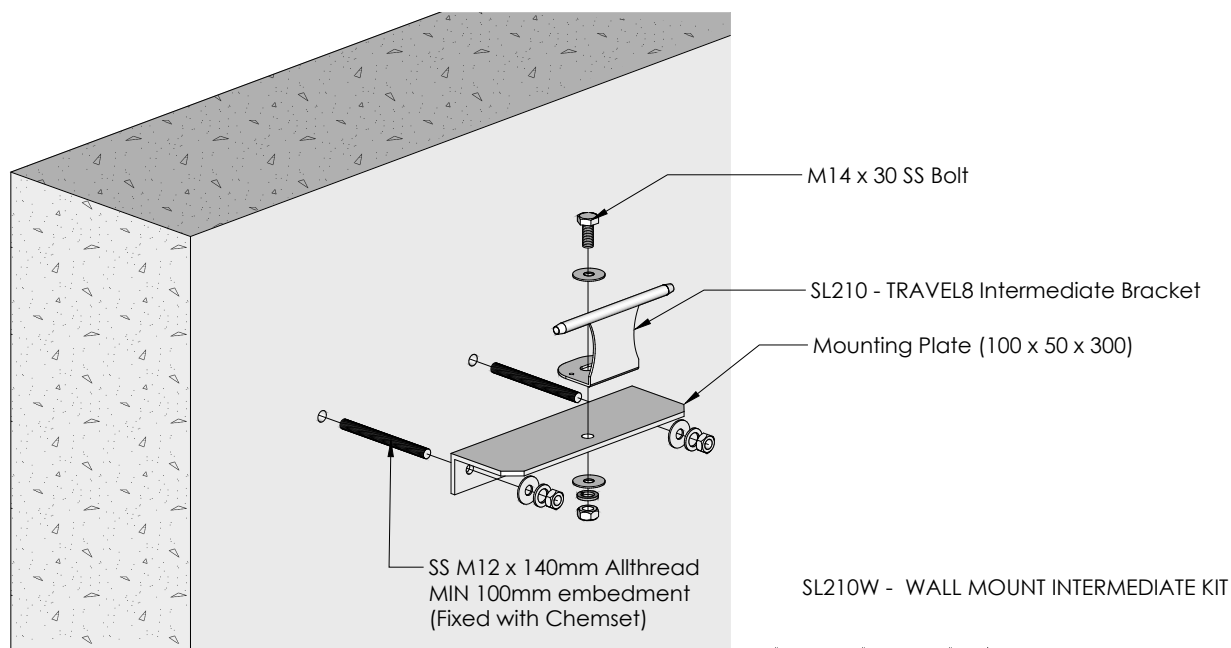
Pull testing

Pull testing for the concrete mount end stanchion anchor can either be done by testing each stud to 3.3kn or pull the whole anchor at the main attachment point to 10kn. Undercut anchors need to be pull tested at the time of installation only.

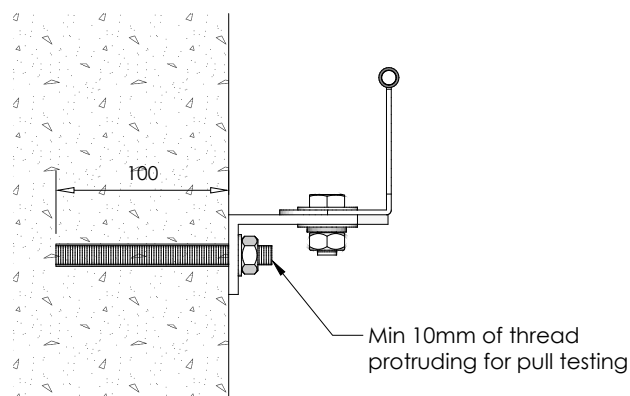
Epoxy adhesive

Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing.

Intermediate assembly



SL210W - WALL MOUNT INTERMEDIATE KIT



Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

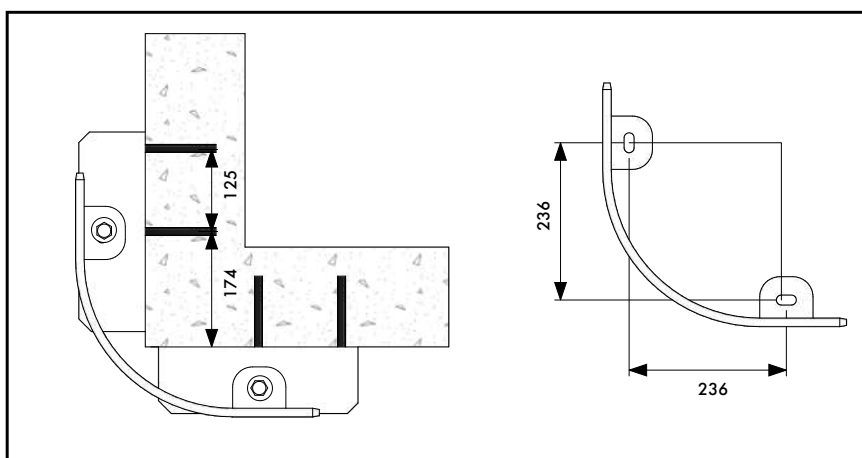
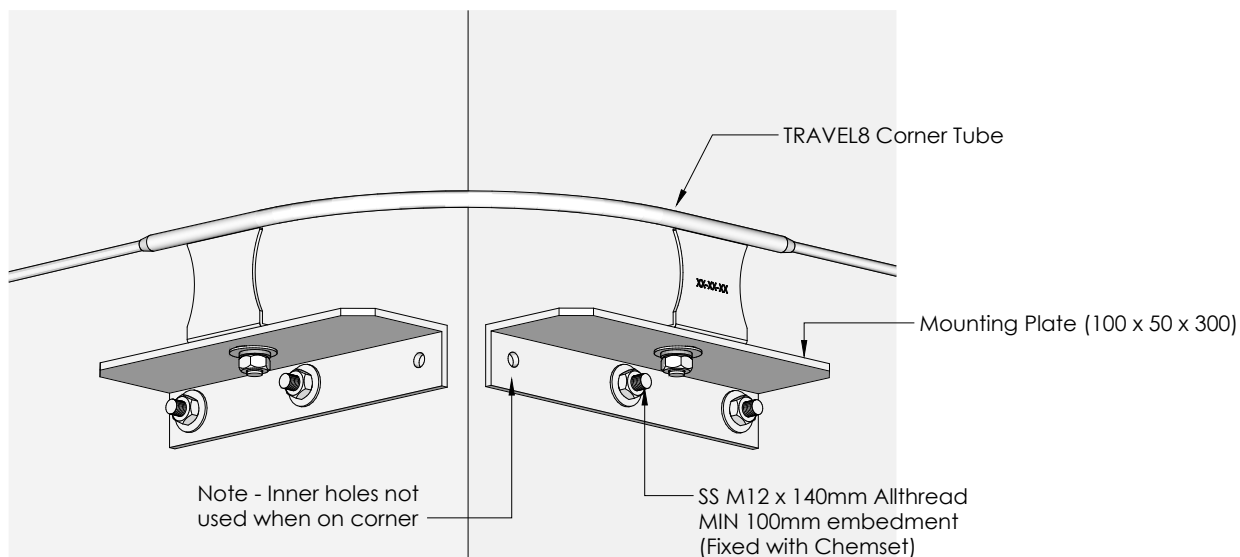
Pull testing

Pull testing for the concrete mount intermediate anchor can be done by using an M12 eye nut as shown. Pull test to 6kN for 3 mins.

Epoxy adhesive

Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing.

External corner assembly



Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

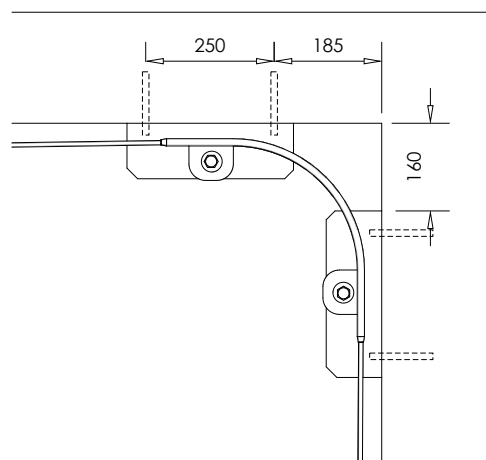
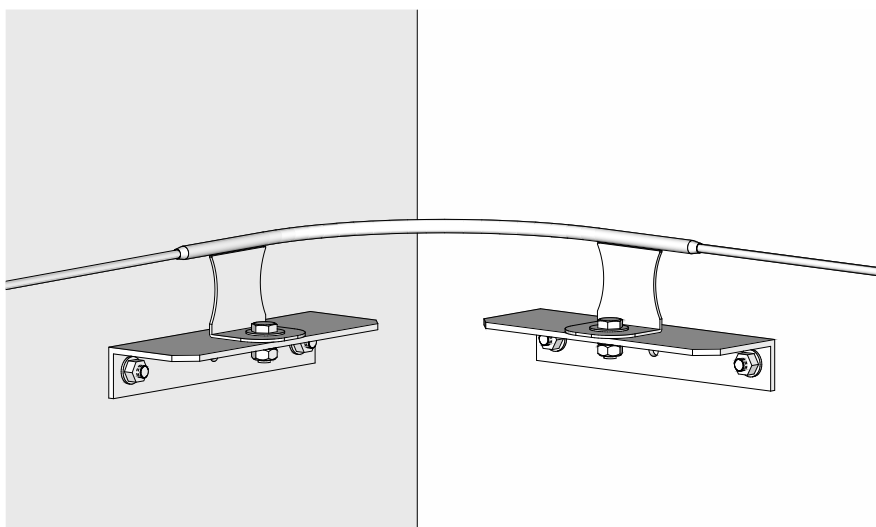
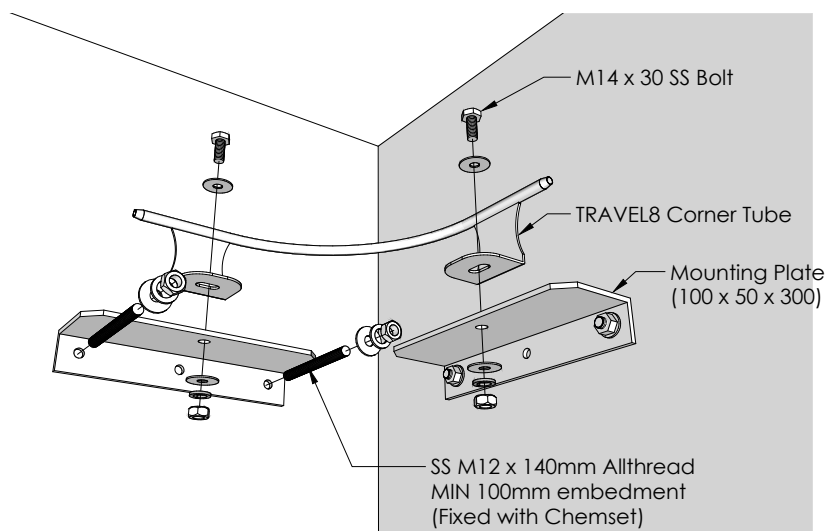
Pull testing

Pull testing for the concrete mount corner anchor can be done by using an M12 eye nut as shown. Pull test to 6kN for 3 mins.

Epoxy adhesive

Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing.

Internal corner assembly



Edge distance

Kattsafe recommends hole distance to be min 200mm from any edge. If this cannot be achieved then verification from epoxy adhesive manufacturer or engineer must be obtained.

Pull testing

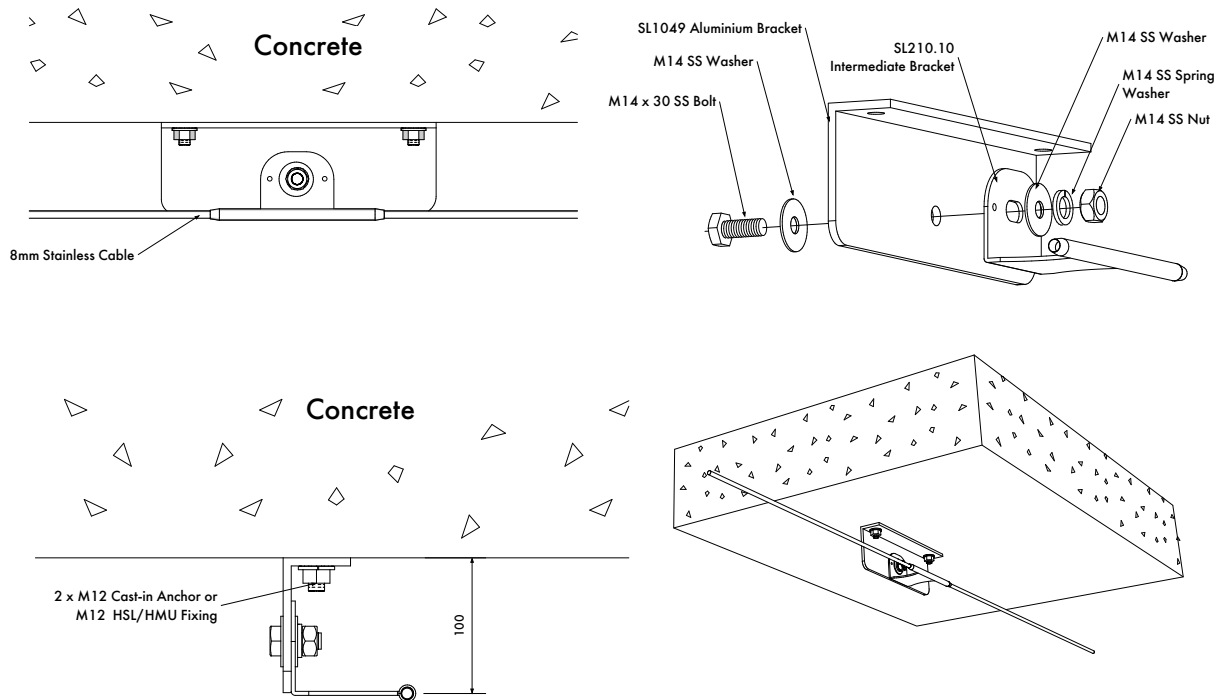
Pull testing for the concrete mount corner anchor can be done by using an M12 eye nut as shown. Pull test to 6kN for 3 mins.

Epoxy adhesive

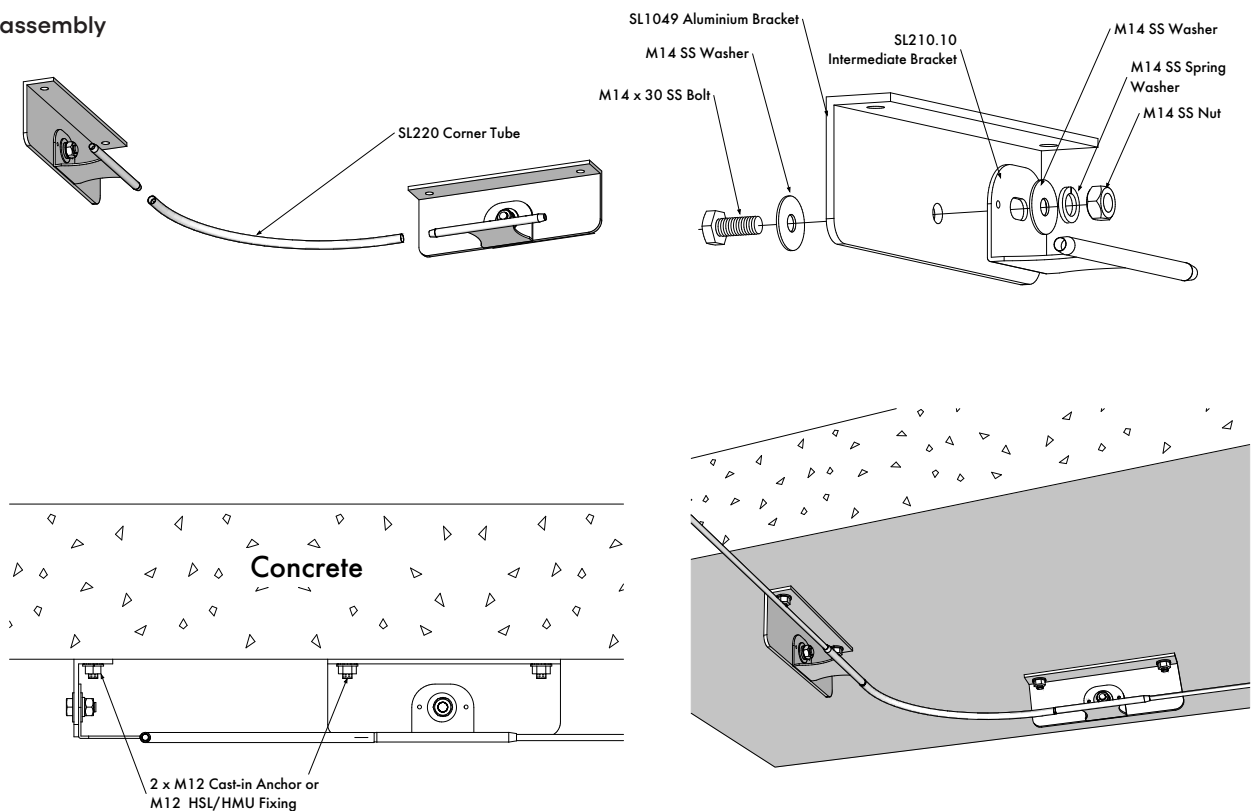
Kattsafe recommend the SD944F (VF22 pro). Any other epoxy adhesive must be verified by and approved by documentation/testing.

OVERHEAD CONCRETE MOUNT STATIC LINE INSTALLATION PROCEDURE

Intermediate assembly

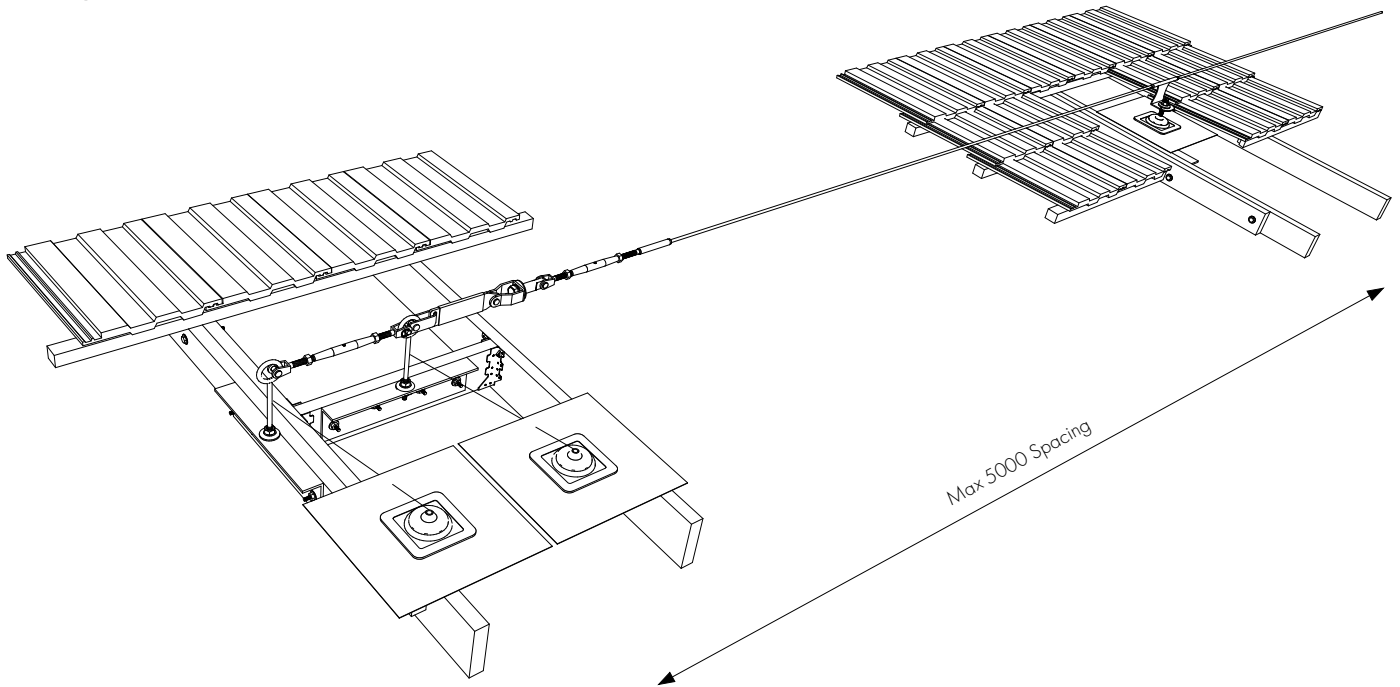


Corner assembly



TIMBER MOUNT STATIC LINE INSTALLATION PROCEDURE

Assembly overview



Note

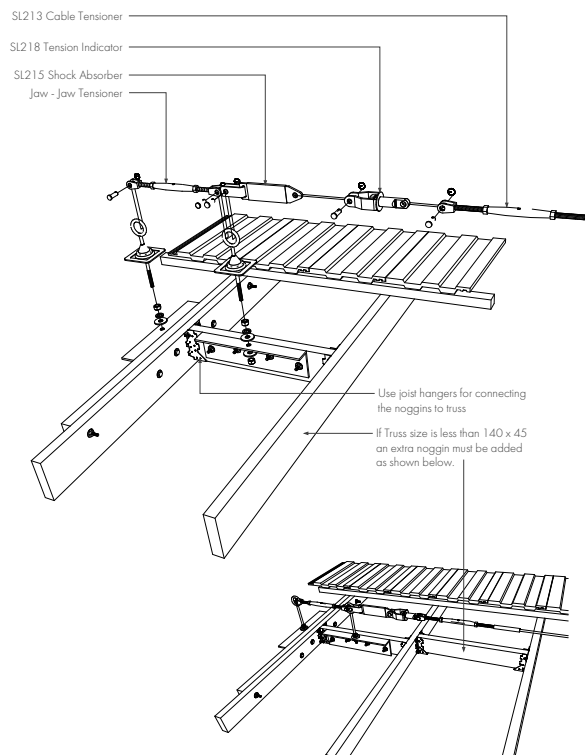
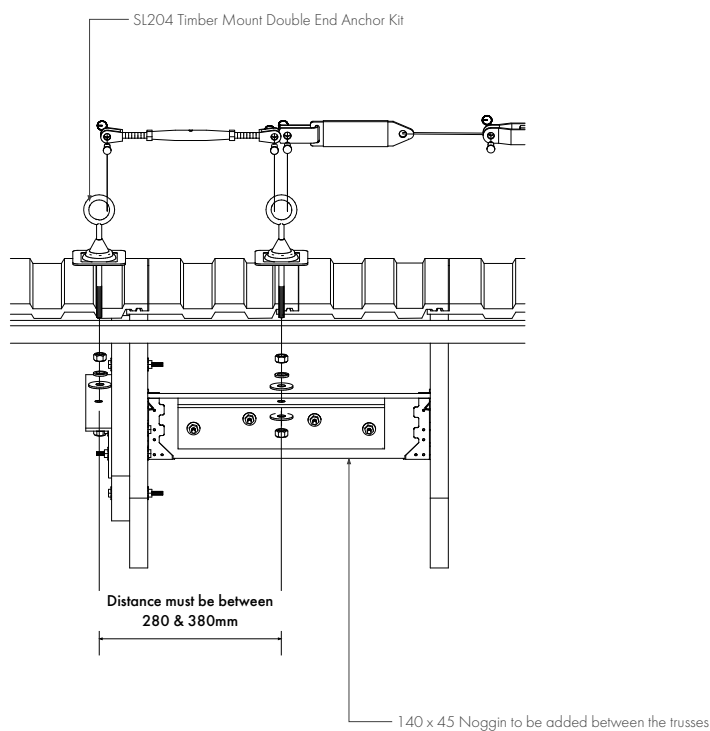
It is very important to establish the strength of the timber before commencing with installation of the static line.

An engineer should be consulted with regards to the timber structure and strength unless it is clear to a competent person that the timber can take the required loads.

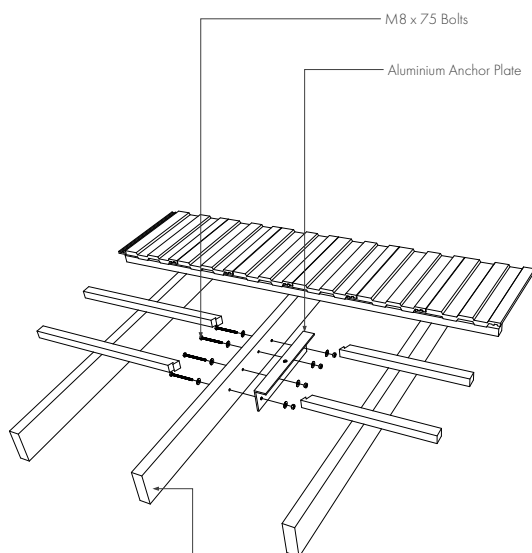
Thorough inspection of the structure must be performed prior to installation.

- Never install anchors near timber joins, knots, cracks, or rotting areas.
- All timber needs to be a minimum of F7 or MPG10 Grade.
- Always install the main anchor plate to the main truss.
- Min timber size 90 x 45 (strengthening is still required).
- Timber battens must also be in good condition and have a good connection to the truss.
- Maximum 30° roof pitch.

End stanchion assembly

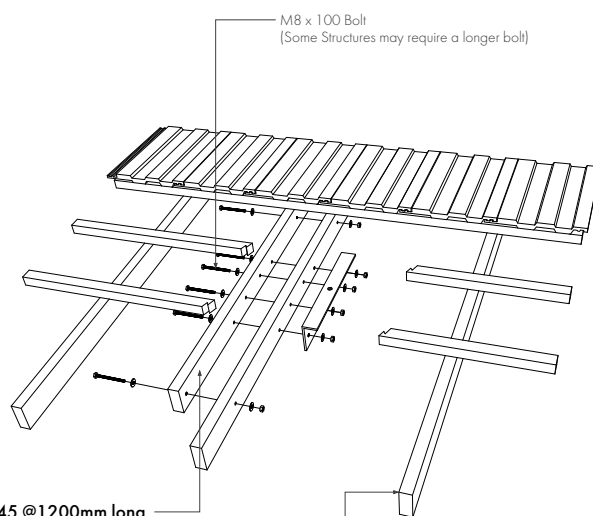


Intermediate anchor assembly



Timber truss/rafter size 140 x 45 or Greater

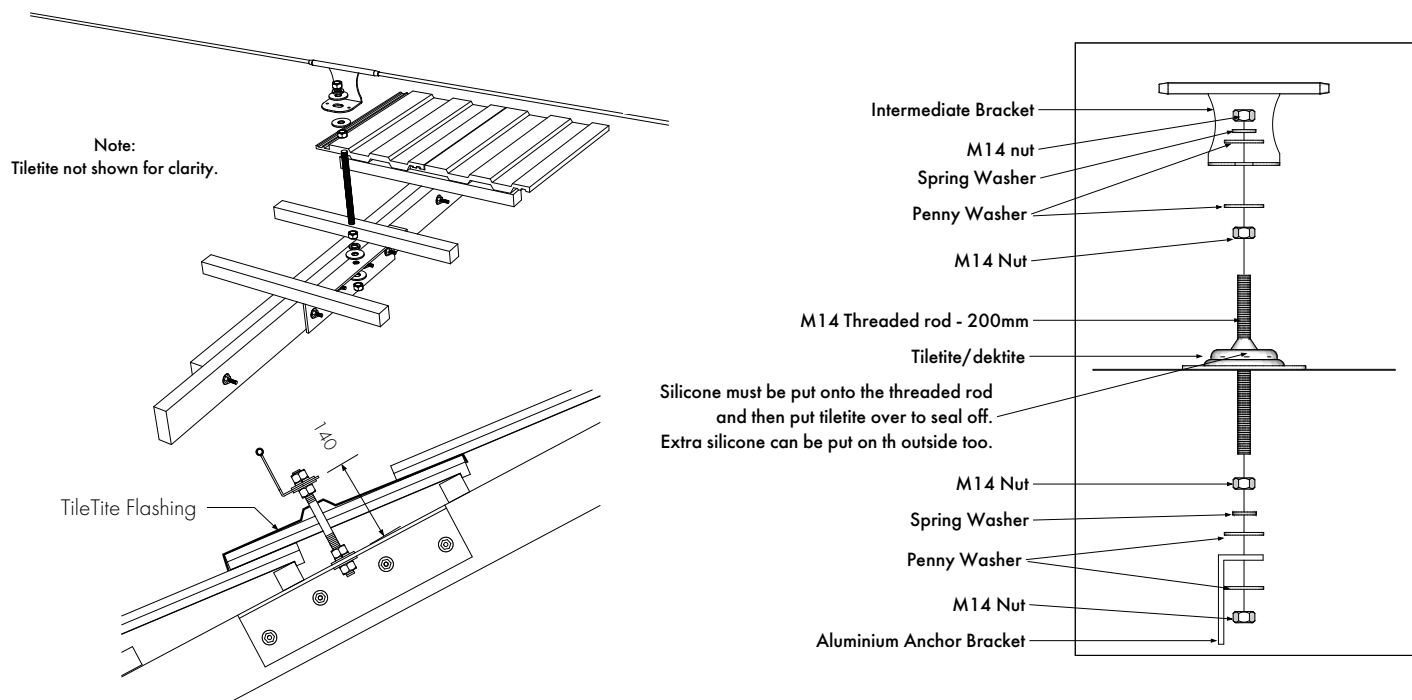
If timber truss/rafter is 140 x 45 F7, MPG10 or greater then there is no need for additional strengthening (Providing timber is structurally sound).



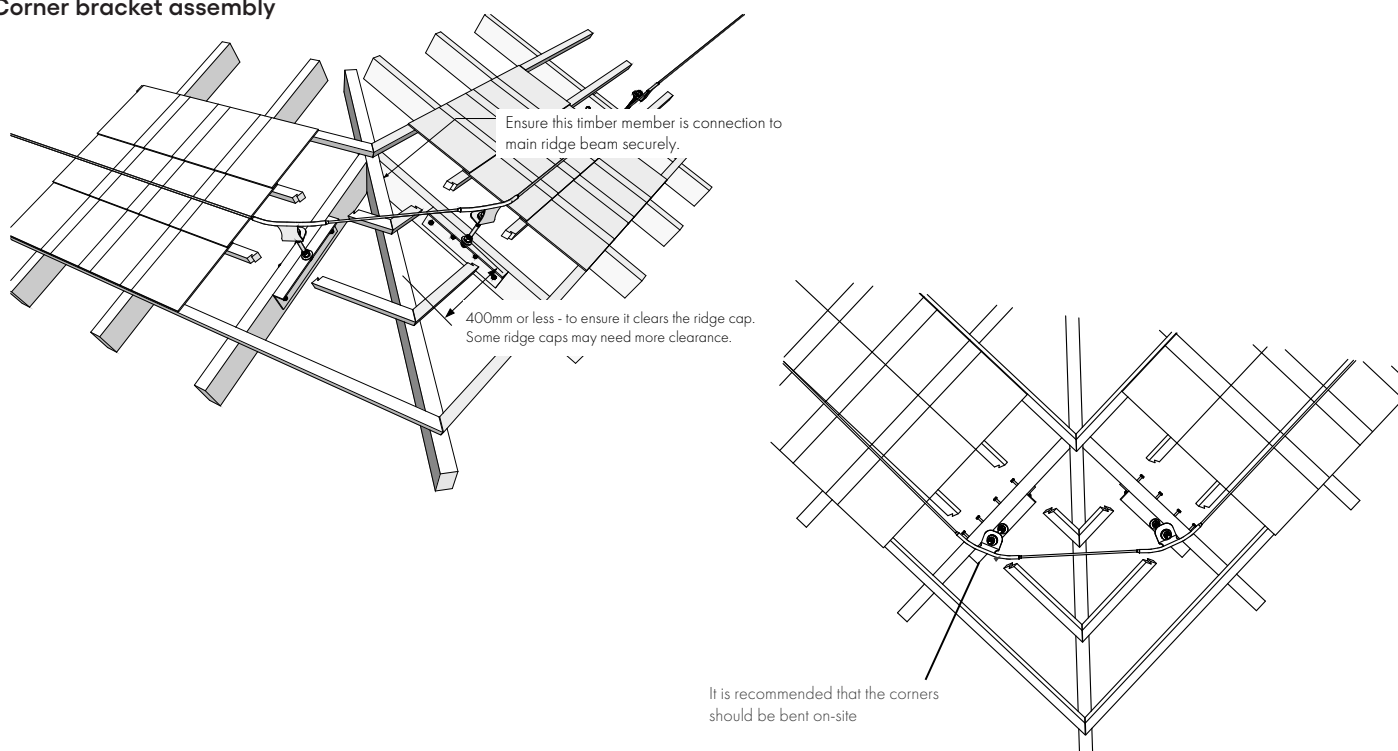
Timber truss/rafter size less than 140 x 45

If timber truss/rafter is less than 140 x 45 then another piece of timber must be attached to the truss/rafter. This timber should be at least 90 x 45 at 1200mm long.

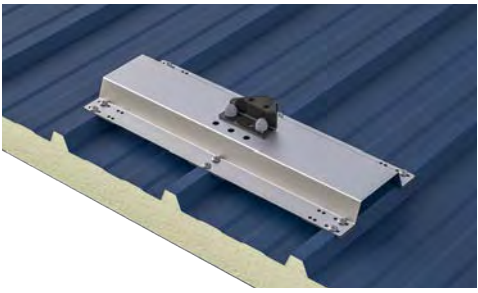


Intermediate bracket assembly



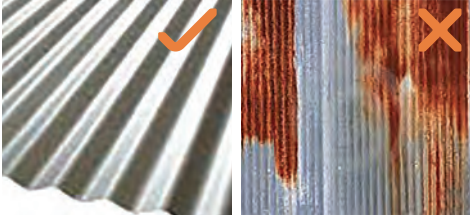
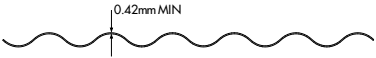
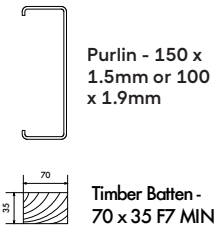
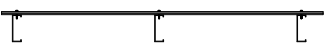
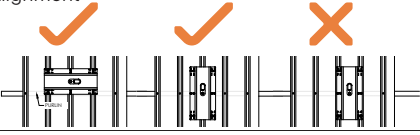
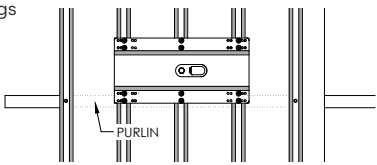

Corner bracket assembly






INSTALLATION CRITERIA

Component	Installation criteria
End stanchion 	Minimum 3 purlins/battens supporting roof sheet on which anchor is installed.
	Plate to structure secure (min 3 fixings into structure and 9 rivets into roof sheet).
	All fixings secure.
	Bolts secure to end plate.
	No swarf / area left clean.
Energy absorber 	Secure attachment to end stanchion.
	Lock in pin circlip secure.
	No 'red' excessive load indication visible.
	No visible damage to unit/structure.
Intermediate 	Minimum 3 purlins/battens supporting roof sheet on which anchor is installed.
	Cable intermediate brackets secure/bolt securely tightened.
	Plate to structure secure (min 2 fixings into structure and 8 rivets into roof sheet).
	No swarf / area left clean.
Corner 	Minimum 3 purlins/battens supporting roof sheet on which anchor is installed.
	Plate to structure secure (min 3 fixings into structure and 9 rivets into roof sheet).
	All fixings secure.
	Bolts secure to corner plate.
	Bolts secure to intermediate brackets.

Continues on next page

Component	Installation criteria
Roof deck 	Roof structure in good condition. Roof sheet fixings in good condition. No rust or corrosion on roof sheet, purlins or structure.
Roof metal thickness 	Minimum 0.42mm base metal thickness. Structurally sound ie. no rust/corrosion/visible damage.
Structural requirements 	Steel purlin – 150 x 1.5mm base metal thickness or 100 x 1.9mm base metal thickness. Timber – 70 x 35 F7 (with suitable truss construction). Structurally sound ie. no rust/corrosion/split/visible damage.
Purlins 	Minimum quantity 3 purlins/battens connected to roof deck.
Alignment 	Fixing holes to be aligned with fall of roof.
Fixings 	Steel/timber: 14 gauge tek screw. Minimum 2 screw fixings per anchor (any 2 holes).
Line tensioner 	Secure attachment to end stanchion. Lock in pin circlip secure. Minimum amount of thread into screw bottle - beyond marks. Swaged/crimp/swageless cable termination secure, no evidence of slipping. If crimp swaged, check dimension across flats between 10.8 & 11.2mm. All lock nuts and fixings secure.

Component	Installation criteria
Anchorage cable 	No cuts or frays to cable.
	Cable correctly tensioned ie. not touching the roof deck.
	Securely attached to end stanchions.
	No visible damage.
System traveller 	Slide latch operates freely.
	Gap between tongue & shuttle inner casing when closed and latch with carabiner no more than 6mm.
	Carabiner fits securely when latched closed.
	Carabiner gate lock device operates securely.
	No visible damage to unit.
Data plate 	Data plate attached nearby system.
	All relevant data completed as well as record of maintenance.

SYSTEM MAINTENANCE

Must be read prior to checklist

1. This system needs to be checked and recertified by a competent height safety inspector every 12 months for non corrosive environments or 6 monthly for corrosive or harsh environments. (To be determined by specialist depending on severity of surrounding conditions.)
2. If the traveller does not slide smoothly check the cable for dirt or grime. The recommended way to solve the problem is to spray the stainless steel cable and the traveller with a Teflon™ based dry lubricant once it has been cleaned.
3. Never clean any of the components with acids or other chemicals that could damage the system components.
4. The traveller is subject to general wear depending on frequency of usage. Any signs of excessive wear will require the traveller to be replaced.
5. The identification label must be completed confirming certification, maintenance and recertification of the system.
6. Points to check on the traveller include:
 - Inspect the traveller for any excessive wear or noticeable damage including cracks or burrs.
 - Inspect the sliding gate for proper operation. The gate must operate smoothly and not allow the traveller to be removed from the cable when the carabiner is in place.
 - Inspect the carabiner for proper closing action and any damage or wear.
 - Inspect the label. All identification labels/batch numbers must be visible.
 - Record the inspection results in the maintenance records.
7. Maintenance for the static line must be done by a qualified height safety system inspector.
8. Harness gear and equipment must be maintained and stored in a dry, protected area, away from acids and ultra violet rays which cause material fibres to break down and reduce their safety and life expectancy.
9. Any deterioration or damage to the system or equipment must be reported to person in control of the workplace.
10. Maintenance inspections must be clearly documented. Any non-conformance must be clearly identified and tagged 'Do Not Use' until corrective action by a competent person has been completed.

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.


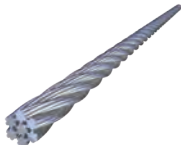



Items ticked PASS - YES means they conform with the required checking criteria and are suitable for normal use until the next recertification date. System data plates must be updated showing current check date and next check date.

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
End stanchion 	Fixings to structure secure (min. 3 fixings to purlin, 9 fixings to roof deck).			
	All attachments/bolts secure.			
	No evidence of penetration seal deterioration.			
	No visible damage to unit/structure.			
Energy absorber 	Secure attachment to end stanchion.			
	Lock in pin circlip secure.			
	No 'red' excessive force indicator visible.			
	No visible damage to unit/structure.			
Intermediate 	Fixings to structure secure (min. 2 fixings to purlin, 8 fixings to roof deck).			
	All attachments secure.			
	No evidence of penetration seal deterioration.			
	No visible damage to unit/structure.			
Corner 	Fixings to structure secure (min. 3 fixings to purlin, 9 fixings to roof deck).			
	All attachments secure.			
	No evidence of penetration seal deterioration.			
	No visible damage to unit/structure.			

Component	Inspection criteria	Pass Y/N	Corrective action	Completion date
Line tensioner and indicator 	Secure attachment to end stanchion and secure swage connection.			
	Lock in pin circlip secure.			
	Tension indicator disc can be rotated manually.			
	Cable visible in inspection hole, no evidence of slipping.			
	All lock nuts and fixings secure.			
Anchorage cable 	No cuts or frays to cable.			
	Cable correctly tensioned ie. not touching the roof deck.			
	Securely attached to end stanchions.			
	No visible damage.			
System traveller 	Slide latch operates freely.			
	Gap between tongue & shuttle inner casing when closed and latched with carabiner, 5mm maximum.			
	Carabiner fits securely when slide latch closed.			
	Carabiner gate lock device operates securely.			
	No visible damage to unit.			
Data plate 	Data plate attached and clearly visible.			
	All relevant data filled out, including last maintenance records date.			
Pull testing - concrete mount static line 	End stanchion Pull testing for the concrete mount end stanchion anchor can either be done by testing each stud to 3.3kn or pull the whole anchor at the main attachment point to 10kN. Undercut anchors need to be pull tested at the time of installation only.			
	Intermediate Pull testing for the concrete mount intermediate anchor can be done by using an M12 eye nut as shown. Pull test to 6kN for 3 mins.			

10th year maintenance and inspection

Component	Inspection criteria	Pass Y/N	Corrective action	Completion date
All components	All regular inspections as per standard criteria above.			
End terminations	All end terminations must be pull tested to 10kN - Held for 3 minutes.			
All components	Some part may require replacement if there is visible wear.			

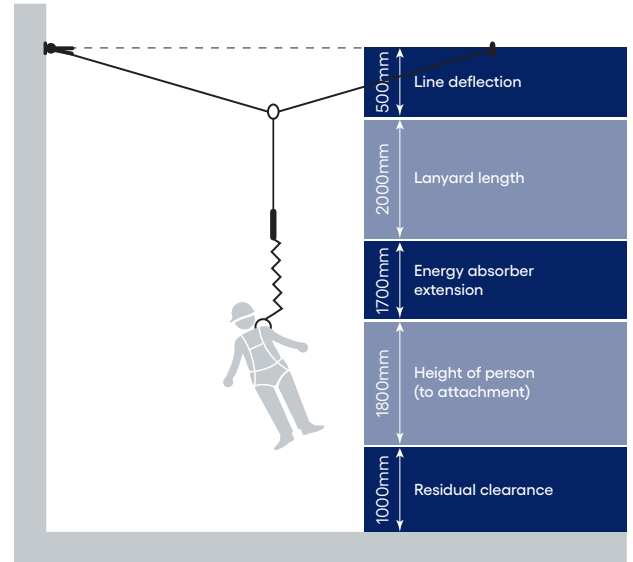
TECHNICAL INFORMATION

Fall clearance

There must be sufficient clearance below the user to arrest a fall before the user strikes the ground or another lower level hazard. The clearance required is dependent on the following factors:

- Elevation of anchorage
- Anchorage deflection
- Lanyard length
- Lanyard elongation on deceleration pull out (personal energy absorber)
- Operator height
- Fall distance residual clearance

See AS/NZS 1891.4:2009 Section 7 for a detailed explanation.



System requirements

The worker must wear a full body harness when connected to any fall arrest system including a personal energy absorber compliant with Australian and New Zealand Standards AS/NZS 1891.2:2001 and AS/NZS 1891.4:2009 limiting the force on the anchor and operator to a maximum of 6kN.

Harness connectors must support at least 15kN. Non-compatible connectors may unintentionally disengage (roll-out). Carabiners supplied with proprietary systems must not be removed or substituted with any other component.

Inspection and Maintenance

Inspection and recertification of fall arrest systems and equipment is required at least every 12 months by competent person in accordance with manufacturer's specifications and requirements of Australian and New Zealand Standard AS/NZS1891.4:2009 Section (9).

Important note

Failure to supply and/or install Kattsafe proprietary products in accordance with above standards and codes, specifications and instructions voids complete system certification and/or warranty.

TECHNICAL SPECIFICATION

Static lines

Kattsafe static lines provide continuous attachment through intermediate connections points when using the a traveller, providing efficient fall protection for multiple users. System design, supply, layout, installation and certification by a Kattsafe approved installer, as per the manufacturer's installation instructions and current standards.

Materials

Stainless steel profiled plate assembly including: end stanchions, intermediates, corners, cable and connection devices.

Dimensions

- Attachment cable: 8mm (7 x 7 strand)
- Cable height off structure: 125 to 150mm

Fixings (refer to installation manual)

- Metal fixing: M14 stainless steel stud fixing
- Concrete fixing: M12 mechanical concrete anchor
- Metal roof deck fixing: 8mm construction grade bulb type rivets

Rating

- User weight limit: 120kg (user & equipment)
- Up to 4 users per line, determined by intermediate spacing and roof pitch
- Maximum roof pitch: 30° (across slope), 15° (with slope)
- Support structure integrity, suitability and fixing method to be assessed and determined by a competent person prior to installation
- Must only be used with the approved Kattsafe traveller device and harness system with energy absorber as per AS/NZS1891.1:2009 and AS/NZS1891.4:2009

Compliance

Kattsafe static lines are designed to conform with requirements of the Australian and New Zealand Standards AS/NZS 5532:2013 AS/NZS/ISO22846 and AS/NZS1891 and relevant codes of practices and guidelines.

Testing

Testing and performance based on requirements of Australian and New Zealand Standards AS/NZS 1891 and AS/NZS 5532.

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

Inspection and certification required every 12 months by competent person in accordance with manufacturer's specifications and requirements of Australian and New Zealand Standards AS/NZS 1891 and AS/NZS 5532. (Refer to installation manual).

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.

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
Static lines



Installation manual
Static lines



Operations manual
Static lines



QMS Certification
ISO 9001:2015

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

Kattsafe

**Height access
and fall protection**

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