1. Visual Inspection

The overall visual inspection is to check for signs of deformation, partial deployment of the post or signs of corrosion which may affect the integrity of the post and its method of fixing. Other aspects may be noted at this stage including “is the installation in accordance with Latchways guidelines” and “does the system appear to have been subject to any fall or system abuse”. Indications of system abuse may be signs of vandalism or damage to post or components not consistent with use according to design purpose.

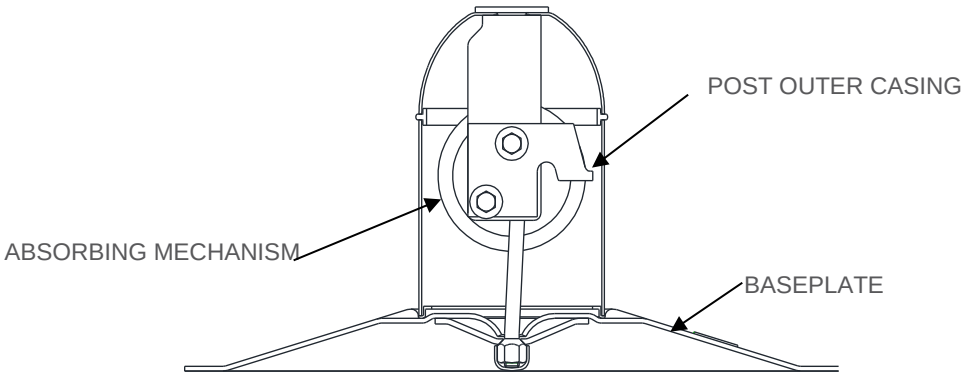
Following this inspection, if in the opinion of the authorised inspector the post is no longer fit for purpose a replacement post is required to be fitted.

If it is noted that a post has a tendency to lean to one side refer to section 2 and follow the procedure in the Partial deployment checklist [section 3].

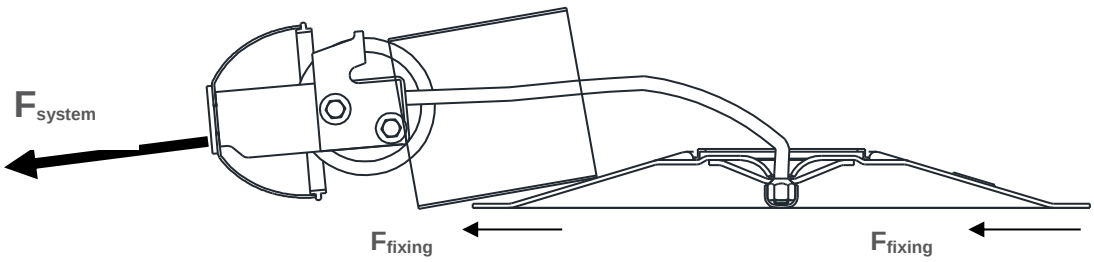
2. Overview of design and function

The Constant Force post has two primary functions when installed within a Type C system employing horizontal flexible lines;

- The post outer casing is to support the cable above the baseplate and maintain adequate clearance between the cable and the surrounding structure.
- This casing also houses the Constant Force absorbing mechanism.



- The Constant Force absorbing mechanism is the component which deploys in the event of a fall situation, if this has partially deployed the ability of the post to reduce the potential loadings may be reduced and the post must be replaced.
- When the Constant Force post deploys or partially deploys the outer casing will separate from the base plate allowing the absorbing mechanism to lie flat thus dissipating the forces applied to the roof to a sustainable level.



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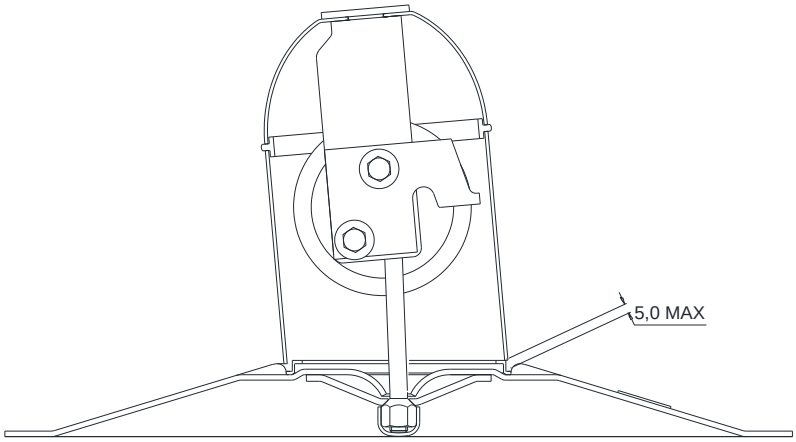
- It is possible for the outer casing to move to one side to the extent that a feeler gauge of up to 5 mm may be inserted between the bottom of the outer casing and the base plate without deploying the absorber mechanism. This applies to the measurement taken at the one raised side of the casing only when the system is under pre-tension.



- If this extent of movement is observed during annual inspections the person carrying out the inspection must follow the procedure in section 3 and check for any indication that this movement may have been caused by a partial fall or system abuse, if in the opinion of the person carrying out the inspection the cause of the movement may be system abuse resulting in the post being unfit for purpose or a fall, a replacement post is required to be fitted.

3. Partial deployment checklist

PARTIAL DEPLOYMENT CHECKLIST			
3.1	**Does the post lean to one side.**		
	Yes	Y/N	Yes go to 3.2
	No		No go to section 4
3.2	**Measure gap under post outer casing**		
	Note measurement	Y/N	N= go to 3.3
	greater than 5mm		Y= Replacement post required
3.3	**Slacken off pre-tension on the system to allow post to return to upright position.**		
3.4	**Re-Tension system taking care to ensure tension is distributed evenly**		
	To Tension evenly: starting at the furthest point from the turnbuckle assembly take up the slackness by pulling the cable manually through each intermediate component using grips at each stage to prevent the cable slipping back through the component. By using two or more sets of grips clamping alternately at consecutive intermediates the system may be partially and evenly tensioned prior to final adjustment with the turnbuckle assembly. Once partial tension has been achieved the final tensioning may be carried out using the turnbuckle assembly, periodically check that tension is being applied evenly by manually pulling the cable through corner guides. The correct tension has been acheived when it is possible to turn the line tensor disc comfortably between finger and thumb.		
3.5	**Does the post still show a tendency to lean**		
		Y/N	Y= go to 3.6
			N = go to section 4
3.6	**Re-Measure any gap whilst system is under tension**		
	Note measurement	Y/N	N= go to section 4
	greater than 5mm		Y= Replacement post required

- If movement is within guidelines and there is no evidence of a fall or system abuse the post may not need to be replaced but the situation should be recorded as part of the inspection report in order that the condition of the posts may be monitored on future inspections.

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4. CFp Fixing methods

4.1 Stitch screw

- For a post installed to a roof with stitch screws first ensure all 16 screws are present. All screws should have an “L” marked on the top of the screw head (part number 65714-00) as shown in fig 1 and fig 3. Only these screws are permitted to be used. Ensure all screws are torque checked to a value of 1.5 Nm using a Quickset standard torque driver (part number 547-379) available from RS Components (tel: +44(0)8457 201 201, *www.rswww.com*). See fig 2 and fig 4.

Fig 1

Fig 2

Fig 3

Fig 4

- It is necessary to perform a torque test on each screw after installation to confirm it is correctly installed and the screws are fully engaged. It is recommended that all screws are torque tested at least once every 12 months as part of the periodic examination.
- Check for signs of corrosion or brown staining anywhere on the post, a light discoloration on the head of the screws is permissible, however, corrosion of the base plate, post outer casing and dome is not.

CAUTION

ENSURE THE TORQUE VALUE OF 1.5 Nm IS NOT EXCEEDED. FAILURE TO COMPLY WITH THIS WILL RESULT IN POSSIBLE FIXING FAILURE.

WARNING

STITCH SCREWS ARE ONLY SUITABLE FOR STEEL BASED ROOF INSTALLATIONS AND ARE NOT SUITABLE FOR ALUMINIUM BASED ROOF SYSTEMS.

4.2 Rivet

- For a post installed onto a roof using rivets ensure all rivets are installed correctly, by checking that the head of the rivet fully abuts the top surface of the base plate, none of the rivets are lose and the mandrel has been removed after riveting. All rivets used should be of the bulb type as shown in fig 5 and fig 6 (Latchways part number 65620-03).

Fig 5

Fig 6

- Check for signs of corrosion or brown staining anywhere on the post particularly around the rivet. Check that the head of the rivet is fitted tight against the base plate.

MANDATORY

ONLY RIVETS (LATCHWAYS PART NUMBER 65620-03) CAN BE USED TO INSTALL POSTS TO ALUMINIUM ROOF SYSTEMS

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4.3 Standing Seam

- **REFER TO LATCHWAYS STANDING SEAM CLAMPS INSTRUCTION DATASHEET 50300-96 FOR FULL TORQUE SETTING INFORMATION ON THE DIFFERENT CLAMPS AVAILABLE**. Installers should be aware that on inspection following the initial installation, all clamps may require re-torqueing once the seams have compressed.

S-5 clamp

- For a post installed to a roof with S-5 clamps (fig 7) ensure each post is attached to the roof using 4 clamps. Ensure the base plate is secured to the clamps using a single bolt on each clamp. Torque check each bolt to a value of 20 Nm. Check the clamp insert is installed into the clamp block and aligned correctly as shown in fig 8. Ensure the Blocks are firmly clamped to the roof with the grub screws present and torque checked to a value of 15 Nm as shown in fig 9.

Fig 7

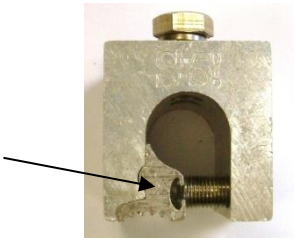

Fig 8

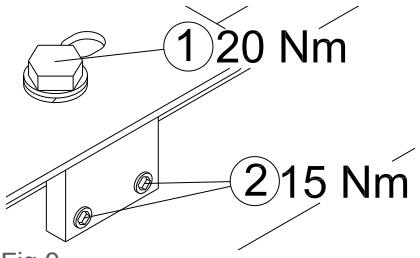

Fig 9

- It is necessary to perform a torque test on each clamp after installation to confirm it is correctly installed and the screws are fully engaged. It is recommended that clamps are torque tested at least once every 12 months as part of the periodic examination.

Latchways split clamp

- For a post installed to a roof with Latchways split Clamp (fig 10) ensure each post is securely attached to the clamps with the 8 x M10 set screws (2 bolts per clamp) and each torque checked to a value of 20 Nm. Ensure all cap head screws are present and torque checked to a value of 15 Nm. Ensure all grub screws are in contact with roof seam and tight. Check the stainless steel and nylon washers are in the correct positions as shown in fig 11.

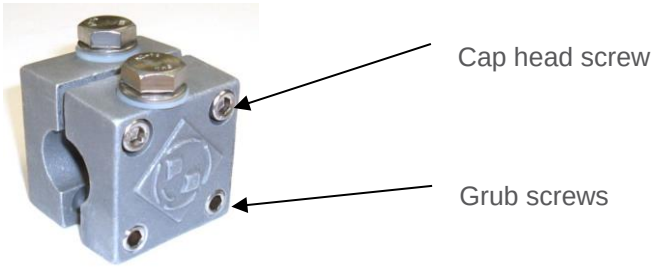

Fig 10

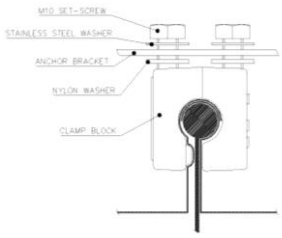

Fig 11

- Check there are no signs of corrosion or brown staining anywhere on the post particularly around the clamp. Check for any sings of slippage between the clamps and the roof

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4.4 Toggle Bolt-Exposed

- For a post installed to a roof with toggle bolts where the underside is visible ensure the post is firmly secured to the roof with no movement. Check for any sings of damage to the weathering detail. Visually inspect the underside of the roof checking all toggle bolts are engaged correctly as shown in fig's 12 and 13.

Fig 12

Fig 13

4.5 Non Exposed Fixings

- Toggle bolts, mechanical anchor and chemical resin fixed posts
- For a post installed onto a roof where the underside is not visible and the bolts are inaccessible to carry out a torque check it is necessary to perform a tensile proof test on each post after installation to confirm it is correctly installed and the fixings fully engaged. It is also recommended that a 10% sample be tested as described below at least once every 12 months as part of the periodic examination. This sample shall include end, corner (where fitted) and intermediate posts. For posts not being examined as part of the periodic examination by the original installer it is recommended that all posts are tested to confirm that the post is correctly installed and the fixings fully engaged. Subsequent periodic examinations by the same installer can revert back to a 10% sample.
- To carry out the proof test a test frame similar to that shown in fig 14 is required. A spreader board may be required to protect the roof from any damage particularly where insulation below has a low compressive strength. It is required that the post be subjected to a tensile load of 2.5 kN for 1 minute. A suitable tensile tester kit as shown in fig 15 can be purchased from Latchways tel: +44 (0) 1380 732 700 or Hydrajaws Limited tel: +44 (0)121 7798656.

Fig 14

Fig 15

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- To fit the tension tester to the test frame pass the threaded end of the fork from the tension tester kit through the hole in the bridge. Screw the fork into the tension tester and place over the hole in the middle of the bridge. Fit the test gauge to the tester. Place the test frame over the post and locate the fork end into the D-ring using the pin provided see fig 14. The tensile load can now be applied.
- Where insulation is present between the membrane and the structural deck, it is advisable to a pre-load the test arrangement and to use spreader boards beneath the test frame legs to evenly dissipate the load over a wider area of the roof surface. The size of the spreader board required will depend on the compressive strength of the insulation.
- To pre-load the arrangement, carefully increase the load to 50% of the test requirement and leave to settle, this should take typically 1 minute depending on the compressive strength of the insulation.
- Once settled gradually increase the load to 2.5 kN and hold for 1 minute.
- If at any point during the above processes concerns arise regarding the surrounding structure, cease the testing immediately, re-assess the structure and re-evaluate the test procedure in accordance with your assessment.

WARNING

DURING THE PROOF TEST DO NOT EXCEED 3 KN AS THIS MAY RESULT IN POSSIBLE DEPLOYMENT OF THE POST

- For a post fitted with a corner bracket or variable corner etc. it will be necessary to carry and fit a D-ring so that the tensile load can be applied. Refer to data sheet 00715-98 for details of the test frame.

Notes

- Visually inspect componentry as per datasheet 90001-98.
- In the event of a failure of any of the above criteria, the post must be removed from service and replaced with a new post. In the event of a stitch screw failing a torque check it should be removed and replaced with a bulb type rivet (part number 65620-03).

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