Installation Instructions

Counterweight Roof Anchor with D-ring

MOBILE DEADWEIGHT ANCHOR SYSTEM
BS EN 795 – CLASS E

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CAI Safety Systems

Datasheet No.: 65640_99  DAR No.: 3755mc  Issue: 8  Issue Date: 03.01.12
Approved: T.Bissett  Sheet 1 of 15
IMPORTANT

Please read these installation instructions carefully before installing this product. Please pay particular attention to all sections that carry warning symbols and notices.

WARNING!
THIS IS A WARNING SYMBOL. THIS SYMBOL IS USED THROUGHOUT THE INSTRUCTIONS WHENEVER THERE IS A RISK OF PERSONAL INJURY OR DEATH TO EITHER THE INSTALLER OR END USER OF THE PRODUCT. ENSURE THAT THESE WARNINGS ARE READ AND UNDERSTOOD AT ALL TIMES.

CAUTION!
THIS IS A CAUTION SYMBOL. THIS SYMBOL IS USED THROUGHOUT THE INSTRUCTIONS WHENEVER THERE IS A RISK OF DAMAGING THE LATCHWAYS PRODUCT. ENSURE THAT THESE CAUTIONS ARE READ AND UNDERSTOOD AT ALL TIMES.

MANDATORY
THIS IS A MANDATORY SYMBOL. THIS SYMBOL IS USED THROUGHOUT THE INSTRUCTIONS WHENEVER THERE IS A SPECIFIC INSTRUCTION FOR LATCHWAYS PRODUCT. ENSURE THAT THESE IMPORTANT INSTRUCTIONS ARE READ AND UNDERSTOOD AT ALL TIMES.
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**WARNING!**
WHEN USING THE FREESTANDING CONSTANT FORCE POST BASIC ON SITE SAFETY PRECAUTIONS SHOULD BE OBSERVED INCLUDING THOSE LISTED BELOW.

1. The following system of work is designed for installing the Freestanding Constant Force Post (FCFP) system onto the roof of a building in accordance with the safety rules and safe working practices required by site management.

2. Only personnel that have been trained in the installation of the Latchways systems are allowed to complete installations.

3. All personnel involved are trained and competent to work at height.

4. The person in charge of the work should ensure that they are in possession of any necessary safety documents, an on site risk assessment has been carried out and all members of the working party are briefed in the works (and any restrictions) prior to accessing the roof.

5. All personnel are required to use the correct P.P.E. at all times during the work.

6. The anchor device must never be used where there is contamination of the roof surface and/or anchor device by oil grease, etc. Or by growth of algae.


1. The (FCFP) is a deadweight anchor device conforming to BS EN 795 class E.
3. Key Points

1. Read and understand these instructions before assembly, installation and use of the anchor device.
2. The freestanding constant force post is a deadweight anchor device conforming to BS EN 795 class E.
3. The controlling notified body number is 0194.
4. For use on nominally flat roofs with a max slope of 5°.
5. The anchor device is a modular design to ease transportation and re-siting of the anchor device.
6. The anchor device must never be used during periods when frost, ice or snow are present on the roof surface or when freezing conditions are imminent.
7. The anchor device must never be used where there is contamination of the roof surface and/or anchor device by oil grease, etc or by growth of algae.
8. The anchor device should be positioned avoiding areas where water accumulates.
9. For roof surfaces that are covered with stone chippings, all loose stones should be removed by sweeping with a hard brush before sitting and assembling the anchor device.
10. The anchor device is for the attachment of a single user only.
11. Always connect to the anchor device using an energy absorbing lanyard conforming to national standards in force.
12. Always install the anchor device so no part of the device is less 2.5 m from the edge of the roof or opening. During installation and assembly of the anchor device ensure that the installer is not less that 2 m from any edge or opening.
13. Not for use as an abseiling point.
14. If the anchor device is to be positioned on Sarnafil PVC membrane then before the anchor device is situated there must be a 1.15m sq additional layer of membrane heat welded to the existing membrane, in between this layer of membrane and the original there must be a 1m sq sheet of Sarnafil ‘T’ type fleece. The anchor device can then be built up on the new membrane. (see diagram below).

![Diagram of anchor device installation and Sarnafil membrane layers](image-url)
4. Control

**Important:** The user shall ensure that the recommendations for use with other components within a system, as advised on the record card for the system or component, are complied with.

The latchways freestanding constant force post should be under control of site management. Site supervisors are advised to procure and maintain records cards for each anchor device. These cards should contain information similar to that shown.

**Record Card**

<table>
<thead>
<tr>
<th>System details</th>
<th>Latchways plc</th>
<th>Tel: +44 (0)1380 732700</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Hopton Park, Devizes</td>
<td>Fax: +44 (0)1380 732701</td>
</tr>
<tr>
<td></td>
<td>Wiltshire SN10 2JP, ukk</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Identification numbers</th>
<th>Year of manufacture</th>
<th>Date of purchase</th>
<th>Date first put into service</th>
<th>Maintenance period</th>
<th>Personal protective equipment to be used</th>
<th>Authorized USER(s)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Authorized USER(s)  

Comments
5. Warning Signs

1. The warning label should be permanently attached to the base plate and must be clearly visible. In addition to the requirements of EN 365 the label will also indicate the following information:
2. The anchor device is for the attachment of a single user only.
3. Always connect to the anchor device using an energy absorbing lanyard conforming to national standards in force.
4. That only personal protective equipment complying with relevant national standards should be used.
6. The Anchor Device

The anchor device is supplied in component part form and requires assembly before the Device can be put into service. The standard assembly comprises of the following parts:

1. 1 x Constant Force Post with round base plate
2. 6 x M12 set screws, nuts and washers
3. 2 x cross straps
4. 4 x rubber coated base segments
5. 8 or more standard galvanized segments (refer to table below)
6. 4 x M20 bolts and washers
7. 1 x warning label
The anchor device is approved for use on the following roof surfaces using the number of weights as described below:

<table>
<thead>
<tr>
<th>Nominally flat roof</th>
<th>Roof at 5° slope</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roof type</strong></td>
<td><strong>No. of segments</strong></td>
</tr>
<tr>
<td>Concrete</td>
<td>12</td>
</tr>
<tr>
<td>Single ply membrane</td>
<td>12</td>
</tr>
<tr>
<td>Bitumen membrane</td>
<td>12</td>
</tr>
<tr>
<td>Asphalt – sanded</td>
<td>12</td>
</tr>
<tr>
<td>Asphalt – stone chippings</td>
<td>16</td>
</tr>
<tr>
<td>Steel profile</td>
<td>16</td>
</tr>
</tbody>
</table>

The number of segments described above is the total number segments required for each anchor device and includes the 4 rubber coated base segments.

**Warning**: ensure the correct number of segments are used. This is dependent on the type of roof as described above. **If in doubt ask.**

The approximate weight for the anchor device is as follows:

- Complete anchor device with 12 segments is 300 kg
- Complete anchor device with 16 segments is 400 kg

The approximate weight for individual segments is as follows:

- Rubber coated base segment is 25 kg
- Galvanized segment is 23 kg

**Caution**: always wear suitable protective footwear to avoid injury to the feet.
7. Ground Clearance

To determine the position of the anchor device use the following parameters:

\[ D_{\text{EDGE}} = \sqrt{(L_{\text{MAX}}^2 - F_{\text{FALL}}^2)} \]

To determine typical ground clearance required use the following parameters

\[ D_{\text{GROUND}} = D_{\text{FALL}} + E_{\text{LAN}} + E_{\text{BODY}} + C_{\text{GROUND}} \]

Where:

- \( L_{\text{MAX}} \) = maximum length of lanyard
- \( F_{\text{FALL}} \) = 1.5 m free fall distance
- \( D_{\text{EDGE}} \) = distance to edge of building (must not be less than 2.5 m)
- \( D_{\text{FALL}} = D_{\text{ANCHOR}} = 1\) m for maximum permissible displacement of anchor device
- \( D_{\text{GROUND}} \) = maximum ground clearance.
- \( D_{\text{LAN}} \) = 1.75 m maximum deployment of lanyard energy absorber
- \( E_{\text{BODY}} \) = 2 m minimum extension of body and harness
- \( C_{\text{GROUND}} \) = 1m allowance for clearance below feet of user

**Notes**

The above ground clearance allows for the maximum allowable displacement/deployment of the anchor device (1 m) and the lanyard energy absorber (1.75 m). Where deployment/deployment of the lanyard energy absorber is considered less than 1.75 m contact the manufacturer for further advice.

It is recommended that the free fall distance be always kept to a minimum. The above parameters allow for a free fall distance of 1.5 m. For falls greater than 1.5 m but less than 2.5 m. The following parameter must be used to determine ground clearance.

\[ D_{\text{FALL}} = D_{\text{ANCHOR}} + L_{\text{MAX}} - D_{\text{EDGE}} + 0.5 \text{ m} \]

The maximum permissible free fall distance for a user weighing 100 kg is 2.5 m.
8. Positioning The Anchor Device

Select a suitable position on the roof so that no part of the anchor device including the segments is less than 2.5 m from any edge, roof opening or roof light.

When installing the anchor device the worker shall ensure all work is carried out safely and always maintains a distance of 2 m from any edge or opening during installation of the device.

When selecting a suitable position for the anchor always avoid areas where water can accumulate.

The site selected for installation of the anchor device should be free from obstacles. The anchor device can be displaced by up to 1 m before arresting a fall.

Ensure the roof selected for installation is free from algae. This must be removed before installing the anchor device.

Remove any loose chippings within the area selected for installation before assembling the anchor device.
9. Assembly

Place the four M20 bolts supplied into the recessed holes on the underside of the rubber coated base segments, ensuring that the bolt heads are held in position by the recess walls. Carefully place the segments on to the selected roof position in a circular arrangement, ensuring the raised location pads are facing upwards (see figure 1).

![Figure 1]

Select the upper and lower cross straps and secure together using 2 x M12 bolts, nuts and washers. The maximum recommended tightening torque is 30 Nm (see figure 2).

![Figure 2]
Before fitting the constant force post to the cross straps fit the warning label so it aligns with any two holes in the flat circular section of the post base plate. Fit the constant force post to the cross straps by aligning the 4 x 13 mm holes in the base plate with the corresponding holes in the cross strap. Secure the post and warning label to the cross straps using 4 x M12 bolts, nuts and washers (see figure 3). Then place this assembly over the M20 bolts on the rubber coated segments. This will ensure the segments are aligned with the cross strap assembly before adding further segments. Remove the cross strap assembly and continue.

![Figure 3](image)

Fit the correct number of galvanised segments depending on the type of roof on to the rubber coated base segments, excluding the final top four segments (refer to the table on the following page and or section 5 of the user instructions). Fit segments so the four location pads line up and are facing upwards. Locate the assembled cross strap and constant force post over the M20 bolts in each segment (see figure 4).

![Figure 4](image)
Fit the final top four segments onto the assembly.

Secure the segments by fixing 4 x M20 nuts, spring washers and flat washers to the bolts. Tighten each nut until the spring washer goes flat. The maximum recommended tightening torque is 50 Nm. Place 4 X MASKING caps onto the spare thread

Cross check that the correct number of segments have been fitted by referring to the warning label. This identifies the correct number of segments for each roof type.

FINALLY, fit a d-ring to the constant force post using an M12 x 40 mm A4/70 stainless steel bolt and spring washer. The correct tightening torque is reached when the spring washer goes flat underneath the head of the bolt (figure 5). When using spacer part No.85035-00 use 60 mm long bolt.
10. Inspection, Maintenance And Storage

Inspection before use checks - always inspect the following:

1. No part of the anchor device is less than 2.5 m from any edge including ROOF LIGHTS, hatches etc.
2. The anchor device is installed so that the rubber coated segments are always in contact with the roof.
3. The anchor device is assembled using the correct number of segments.
4. The roof surface is an appropriate type as described on the warning label and in these instructions.
5. The warning label is present and securely attached to the post base plate.
6. All bolts securing the D-ring, Constant Force post, cross straps and segments are tight.
7. There is no damage to the complete anchor device.
8. There is no damage to the roof area immediately around the anchor device.
9. There is no contamination from oil, grease etc or by growth of algae.
10. Any loose chippings have been removed.
11. The record card has been completed.
12. Signs of corrosion, wear, deformation or other defects to the segments, constant force post (including the base plate), D-ring.

Annual inspection – the anchor device should be inspected every 12 months by an authorised installer or agent.

1. All of the above checks shall be carried out.
2. Check for deployment of the constant force post. This will be indicated by deployment of the Constant Force post by leaning away from the vertical position. For more severe loading the Constant Force post will be in a horizontal position showing the internal energy absorbing mechanism.
3. Check for signs of modification. The anchor device must not be modified in any way without written consent from the manufacturer.
4. Record this inspection on the record card as described in section 2.

If the anchor device is damaged, do not attempt repair. Contact your authorised installer or agent for further advice. If there is any doubt about the safe condition of the anchor device, it shall be withdrawn from service. This shall be recorded on the record card. Contact your authorised installer or agent for further advice.

Maintenance

1. Dealing with any defects found during inspection before use and annual inspection.
2. Dismantling and cleaning may be required particularly if algae has formed on the base segments. Clean the segments using clean water of domestic quality (up to 40°C). If required it may be washed in a domestic grade detergent. All parts should be thoroughly rinsed and dried before re-assembly.

Storage

1. The anchor device should be stored away from direct heat, high humidity, sharp edges, corrosives or other foreseeable causes of damage. The equipment should not be subjected to unnecessary stress, pressure or rough handling. Wet equipment should be dried naturally away from direct heat.
2. During storage, all equipment should be kept away from contaminants such as acids, alkalis, oils and grease.

11. Certification

After completing the above checks, the anchor device certification can be issued.
!! CAUTION !! This is a fall protection system. The system must be used in strict conformance with the manufacturer’s instructions. Failure to do so may result in serious injury or death. Do not use or operate this system unless you are properly trained.

Distributed by
CAI Safety Systems
555 Monica Circle
Corona, CA 92880
Phone: 951.272.6999
Toll-Free: 888.246.6999
Fax: 951.272.8066
info@caisafety.com
Website: caisafety.com