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Technical Bulletin

Re: **TR290616#1SJ : Roof Angel Specification**

29/06/2016

1. Testing

a. Compliant with

EN 795:2012 (Type A & C)
Personal fall protection - Anchor devices one user.

Evidenced by a Declaration of Conformity detailing the product, the European Standard, name of the independent Notified Body and date.

b. Compliant with

CEN/TS 16415:2013 (Type A & C)
Personal fall protection equipment - Anchor devices -Recommendations for anchor devices for use by more than one person simultaneously.

Evidenced by a Declaration of Conformity detailing the product, the European Standard, name of the independent Notified Body and date.

c. Testing was carried out by

SATRA Technology Centre,
Wyndham Way,
Telford Way,
Kettering,
Northamptonshire,

2. System Specifications

Number of Users - The Roof Angel System is tested as above for unrestricted access for 3 users in the Class C Horizontal Lifeline configuration and 2 users in Class A. Each post and component in a Class C horizontal lifeline configuration will be able to absorb the energy of three users falling simultaneously in any direction. A single Class A anchor post is tested for 2 simultaneous users falling in any direction.

Maximum Span, - The Maximum Span between posts, which should be confirmed through the Roof Angel Prediction Software and end load testing data, is 15m.

Minimum Span, - The Minimum Span between posts, which should be confirmed through the Roof Angel Prediction Software and end load testing data, is 2m.

Edge Distance - The system is tested to a minimum sheet edge distance for trapezoidal and standing seam sheeting of 1m. However it is always recommended to position the system where possible to allow a full restraint PPE kit to be used.

System Labelling - Labelled according to EN 365:2004 General requirements for instructions for use, maintenance, periodic examination, repair, marking and packaging.

Wire rope - Ø 8mm 7x7 316 grade stainless steel wire rope with a 37kN minimum breaking load.

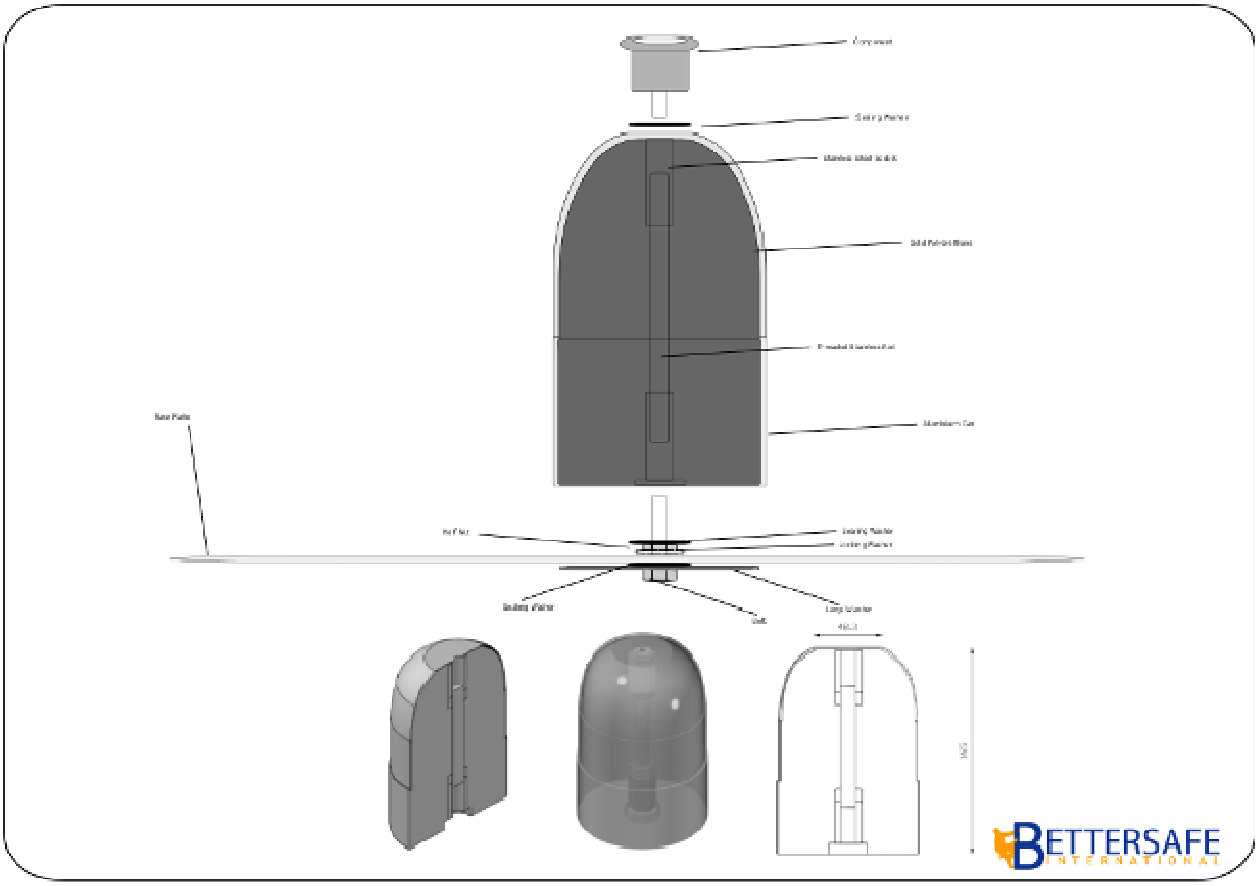
Cable termination - Swaged termination manufactured from stainless steel to include a system tensioning device with integral indicator.

Extremity, corner and intermediate brackets - To be manufactured from electro polished 316 grade stainless steel.

Shuttle (mobile anchor point) - Enabling continuous hands free operation to either side of the system without the need to detach.

Connection to system - Energy absorbing Fall Protection PPE and Full Body Harness to suit system design.

3. Post Assembly Degradation Protection and Water Proofing



The Roof Angel Post when assembled has multi layers of prevention for degradation and also water penetration.

The Polyurethane Module is protected from UV degradation by the Aluminium Post Cover as shown here.

Water Penetration is prevented by a series of washers at the top of the Polyurethane Module and at the bottom of the Polyurethane Module, and also beneath the plate, which can be seen in the above illustration. The Polyurethane Module itself is solid and non-permeable to water.

Once installed the roof is protected from water ingress by either a sealing strip beneath the plate where it meets the roof sheet in the case of trapezoidal style sheeting systems, or by weather sealing to the base plate or similar in the case of membrane roofing systems.

4. System Absorption

The Roof Angel Horizontal Lifeline System incorporates shock-absorbing, or load limiting components. Every post includes a Polyurethane Absorbing Module which collapses in the event of a fall.

The Roof Angel load limiting post is a moulding of Polyurethane around a Stainless Steel assembly of threaded rod and sockets. This assembly bends under extreme load also absorbing loads applied, whilst ensuring the retention of the mass or person.

The Polyurethane Module compresses in the direction of the fall which absorbs a large portion of the applied load and protects the fixings and the roof sheet or structure.

Image here shows the fall angel system during testing fixed to concrete.

It can be seen that the post has tipped over, is bent and the leading edge is compressed against the base plate.

The image here shows the post after a 200kg mass has been arrested on a 15m single span, during the application of the 13kN static load for 3 minutes.

It can be seen in this image that the post has completely tipped and that the base plate has deformed. The connecting assembly inside the post can also be seen to be bent over.

Once the load is released the post relaxes but shows plastic deformation in both the post and the base plate caused by the absorption of the loads applied during the fall.

The image here shows the post after a 200kg load was arrested, and a subsequent applied 13kN load for 3 minutes was held as per the requirements of the tests.