

Installation, use and maintenance booklet

Safety Line

Personal protective equipment against falls from a height
EN 795 CLASS C
CE MARKING

Maintenance

1/year

Operators

4 

Class

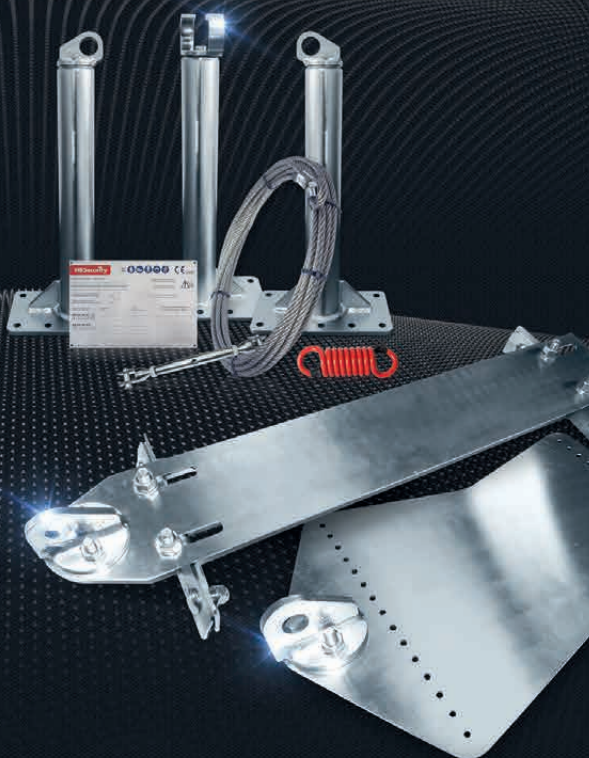
C

Certified to EN 795

10 year warranty

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Revision
0200



Contents

1. General information	3
2. Use	3
3. Device performance data	4
3.1 Fall clearance calculation and PPE length	4
3.2 Testing of fasteners	6
3.3 Device diagram of	7
3.4 Fastening example	8
4. Installation layouts	10
5. Installation instructions	11
5.1 Preliminary checks prior to installation	11
5.2 Installation procedure	11
5.3 On-site fastener testing methods	13
5.4 Final check	13
5.5 Other information	13
5.6 HB-LAM safety line for corrugated metal roof or folded seam metal roof	14
6. Removal of device at end of work	15
7. Identification	15
8. Ordinary inspections	16
9. Useful life of the device	16
10. Transportation	16
11. Storage	16
12. Warranty and warranty limitations	17
13. Liability	17
14. Installation examples	18
15. PPE	20
16. Certificate of conformity	21
17. Proper installation statement	22
18. Periodical inspections register	23

1. General information

HBSecurity produces anchoring devices against falls used to protect all workplaces at a height, according to Leg. Decree 81/2008 as amended and to a certified control system.

The product test certificates and these instructions can be downloaded from the website www.hbsecurity.it.

The owner of the building and/or the safety manager shall store the documentation regarding the installed fall arrest devices and shall deliver them to the operators who shall use such devices.

- Device instructions;
- Safety project;
- Testing of fasteners;
- Proper installation statement;
- Periodical inspections register.

2. Use

Access to workplaces at a height must be allowed, and the installation and use of any fall arrest anchoring devices must be carried out, only to/by specifically trained personnel.

WARNING: the following instructions are not designed for teaching at-height work techniques.

In order to install the devices correctly, it is recommended that the operator(s) have attended installation courses held by the manufacturer. In particular, for correct use of the fall arrest devices the operators should have attended a PPE Category 3 and at-height-work course.

The HBSecurity **Safety Line** can be used by max 4 operators at a time.

The HBSecurity **Safety Line** is a device that allows operators to be totally retained during work.

The HBSecurity **Safety Line** **MUST** be used in combination with PPEs equipped with energy absorbers compliant with EN 355.

Prepare emergency and rescue devices management plan.

After a fall, the fall arrest device must be inspected by a qualified technician who will then issue a formal approval for use. Until then, the device must be taken out of service.

Should any components of the device or of the fastening be damaged, the technician shall order their replacement. The use of original elements is highly recommended.

The HBSecurity **Safety Line** **IS NOT** a lightning rod, and therefore **MUST NOT** be connected to the grounding system. Should the building stand in a lightning risk area, ask the intervention of an electrical engineer for the necessary measures.

3. Device performance data

The following table shows the project data deemed suitable for meeting the requirements of Standard EN 795, obtained for a 12 kN arrest force (double that of the dynamic performance).

These values refer to the highest stresses envisaged at the end points, but can be used also for intermediate points.

THEORETICAL PROJECT DATA WITH $F_a = 12\text{ kN}$ (design loads at the ultimate limit state ULS):			
Line length [m]	Max. span [m]	Design cable stress [kN]	Expected sag [mm]
5	5	18	500
15	15	18	1150
Up to 100	5	18	650
Up to 100	15	18	1250

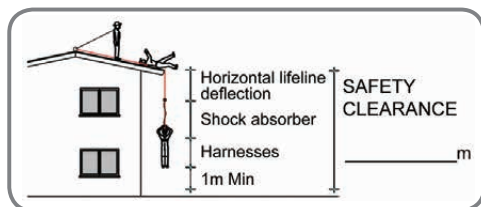
With regard to intermediate spans, refer to worst case values.

3.1 Fall clearance calculation and PPE length

The fall clearance is the distance covered by the operator in a fall. This distance must be shorter than the total height of the working area clear of any possible impact surfaces. Should this distance not be ensured, the engineer shall order the use of total restraint measures, closing the operator within a safety area.

The installer shall indicate the height of fall and the PPE's maximum length (between anchoring point and harness attachment). This information is essential in preventing falls beyond the working area's perimeter and/or the operator's impact with the ground or with interfering structures.

Calculation of FALL CLEARANCE:



FALL CLEARANCE =
DEVICE SAG [SEE TABLE] +
ENERGY ABSORBER EXTENSION 1,75m +
HARNESSE HEIGHT 1,50m Min +
RESIDUAL AIR CLEARANCE 1m Min =
= 4,25m + device sag

HBSecurity DPI PPE

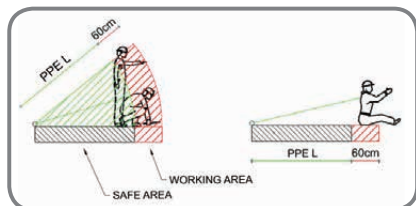
INSTALLATORE / INSTALLER

DATA DI INSTALLAZIONE / INSTALLATION DATE

UNI EN 795 G.C. - D
UNI EN 795 G.A.

DATA ULTIMA VERIFICA
LAST CONTROL DATE

Calculation of PPE LENGTH:



LANYARD LENGTH THE LENGTH OF THE LANYARD MUST HOLD THE OPERATOR AT SUCH A DISTANCE FROM THE PERIMETER AS NOT TO ALLOW HIM/HER TO GO BEYOND THE ROOF'S PERIMETER EVEN IN THE EVENT OF AN ACCIDENTAL FALL.

HBSecurity DPI PPE

INSTALLATORE / INSTALLER

DATA DI INSTALLAZIONE / INSTALLATION DATE

UNI EN 795 G.C. - D
UNI EN 795 G.A.

DATA ULTIMA VERIFICA
LAST CONTROL DATE

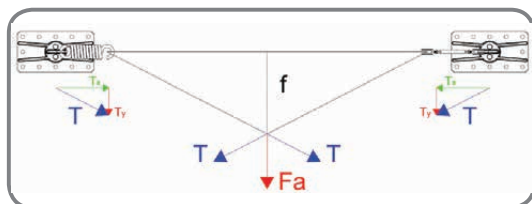
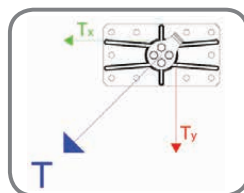
N.B.: the correct design of the safety layout of the roof envisages the impossibility of operator falls (totally prevented fall); the operator may work with a fixed-length or adjustable-length lanyard [the use of an energy absorber is mandatory].

3.2 Testing of fasteners

Fasteners MUST be checked before installation as per the provisions set forth in Appendix A to the EN 795 standard.

As regards the dimensioning of the fastener, the cable tension must be broken down along the two main directions placed on the horizontal plane, the normal of which is parallel to the post's axis.

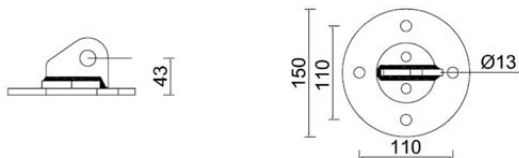
As regards the bends, the acting force must be calculated in function of the deviation angle.



The breaking down of the traction force into its horizontal and perpendicular components with respect to the post must be done on the horizontal plane.

3.3 Device diagram of

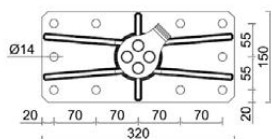
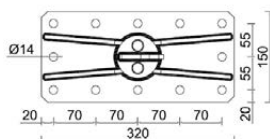
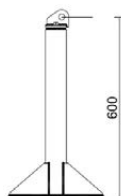
END/INTERMEDIATE/BEND PLATES



POST H60

END/INTERMEDIATE

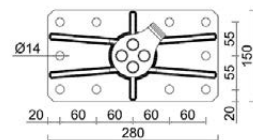
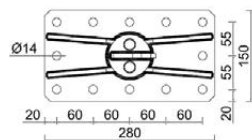
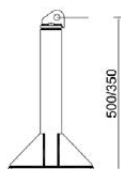
BEND



POST 50H

END/INTERMEDIATE

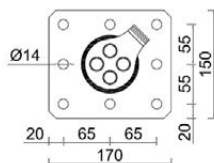
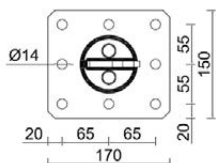
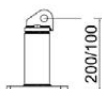
BEND



POST 20H

END/INTERMEDIATE

BEND



3.4 Fastening example

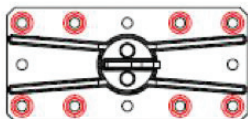
Fastening on concrete

END/INTERMEDIATE
PLATES



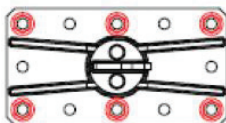
4 wedge anchor M12
Tightening torque: 30-40 Nm

END/INTERMEDIATE
PLATES H60



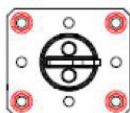
8 chemical anchor M12
Tightening torque: 30-40 Nm

END/INTERMEDIATE
PLATES H50



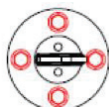
6 chemical anchor M12
Tightening torque: 30-40 Nm

END/INTERMEDIATE
PLATES H20



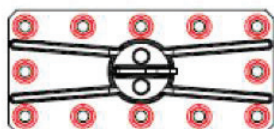
4 chemical anchor M12
Tightening torque: 30-40 Nm

END/INTERMEDIATE PLATES



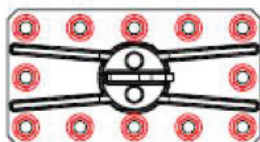
4 wood screws M12x160mm
Tightening torque: 30 Nm

END/INTERMEDIATE PLATES H60



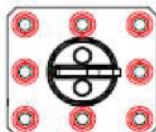
12 wood screws M12x160mm
Tightening torque: 30 Nm

END/INTERMEDIATE PLATES H50



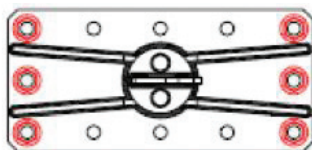
12 wood screws M12x160mm
Tightening torque: 30 Nm

END/INTERMEDIATE PLATES H20



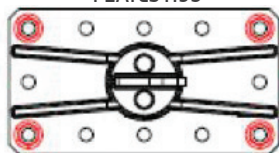
8 wood screws M12x160mm
Tightening torque: 30 Nm

END/INTERMEDIATE
PLATES H60 H 50



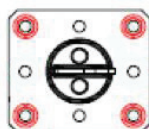
6 x M12 bolts 8.8
Tightening torque: 40-50 Nm

END/INTERMEDIATE
PLATES H35



4 x M12 bolts 8.8
Tightening torque: 40-50 Nm

END/INTERMEDIATE
PLATES H20



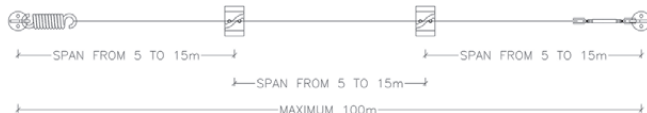
4 x M12 bolts 8.8
Tightening torque: 40-50 Nm

4. Installation layouts

SINGLE SPAN



MULTI SPAN



INSTALLATION WITH BEND



5. Installation instructions

Installers shall carry out the installation following the indications of this booklet and of the project, and in compliance with the provisions of Annex A to EN 795 standard.

The device must be installed in a position above the operator and at a minimum distance of 2 metres from the perimeter. Central positioning of the device with respect to the work area is

preferable in order to achieve a univocal PPE length or anyhow a length that will not give rise to any regulation errors.

In the event of installation on inclined roofs, complete the installation with an adequate number of snow-stop hooks to protect the device.

5.1 Preliminary checks prior to installation

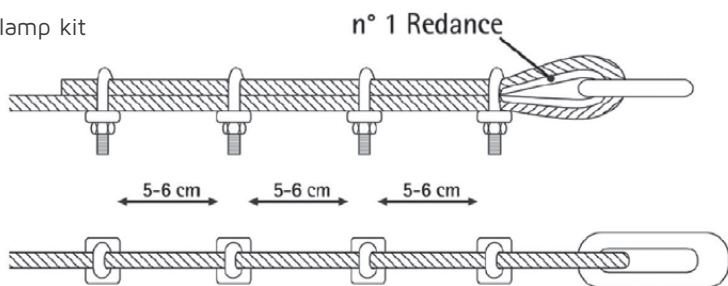
- The installer shall check the integrity of all components, shall make sure that all of the material is HBSecurity original and that it bears the punch stamp with the serial number and the CE marking.
- The installer shall check the suitability of the support materials (beams, masonry structures, concrete-and-masonry structures, etc.) on which the structural anchoring devices will be fastened.
- The installer shall check that the installation has been done as per safety plan and shall verify the fastenings.

5.2 Installation procedure

- Identify the installation point as indicated in the safety project;
- Uncover the structure to which the device is to be fastened by removing any covering layers (tiles, boarding, etc.) and any insulation;
- Position the device and fasten its base using the fasteners indicated in the technician's calculations. The tightening torque values to be used are indicated by the screw, bolt and pin manufacturers.
- Should the support not allow for hole drilling or the insertion of screws or plugs, fasten the device using specifically made hardware;
- Once the end, intermediate and bend posts have been fastened, proceed with spring positioning. Remove the plugs from the spring and hook the spring into the hole of one of the end plates; on the other end of the spring insert the pre-wired end of the steel cable and then reinsert the plugs;

- Unwind the cable and weave it through the intermediate points and/or bends all the way to the end plate;
- Attach to the second end plate the turnbuckle loosened to its maximum extension;
- Insert the unwired end of the cable into the free fork of the turnbuckle and then wire the cable using the cable clamp kit. Tighten the cable-tightening clamps with a maximum tightening torque of 6Nm (see instructions attached to cable clamp kit). Check the tightening torque again after one hour..

Cable clamp kit



- Tighten the turnbuckle and tension the cable until the spring coils open [(80-250kg according to cable length)].
- Apply to each post of the safety line the blue identification sticker (for fall arrest systems) supplied in the Kit, all facing the point of access to the roof.
- Restore the roof elements previously removed, making sure that the waterproofing material is put back in place properly
- Post the identification table, fully compiled, in the place(s) of access to the work area at a height.
- Once installation has been completed, fill in the correct installation statement form.

5.3 On-site fastener testing methods

Checking of fastener extraction:

Test fastener extraction near the fastening site (make sure this does not affect fastener performance) by measuring its resistance to

extraction. Verify that the resistance measured is higher than that required by the qualified technician's calculations.

On site testing:

After fastening the ends and intermediate points of the device, apply to the device a test force not greater than 12 kN for 15 seconds.

5.4 Final check:

Once the metal cable is tensioned, check that the device is whole and lacks no components. At this

point it is possible to attach to it the fall arrest PPE, the winder, the harness, etc.

5.5 Other information

The device must be mounted at a minimum of 2 metres from the perimeter of the pitch or from the edge of the roof.. Should it be impossible for structural reasons to respect this distance, the

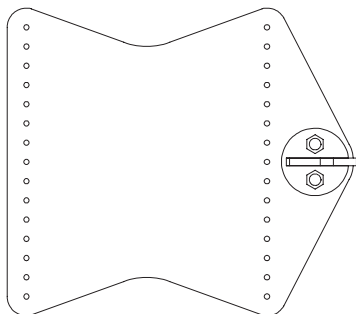
STOP brake device must be used, installing it on the cable at a distance of 2 metres from the edge of the roof.



5.6 HB-LAM safety line for corrugated metal roof or folded seam metal roof

END PLATE FOR CORRUGATED METAL ROOF

INOX 304



FASTENING TO CORRUGATED METAL ROOFING:

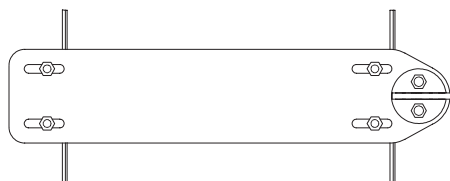
[check the strength of the steel sheet panel]

- **SAFETY LINE END PLATE:** 30 aluminium HBSecurity rivets
- **SAFETY LINE INTERMEDIATE PLATE:** 20 aluminium HBSecurity rivets



END PLATE FOR FOLDED SEAM METAL ROOFING:

INOX 304



FASTENING TO FOLDED SEAM METAL ROOFING:

[check the strength of the steel sheet panel]

- **TIGHTENING OF LOCKPIECE BOLTS:** MAX. 20 - 30 NM

Warnings

- **When installing the safety lines, do not tension the cable as done for the structural safety lines. Leave some cable slack to prevent the sheets from being damaged by dilation phenomena**
- **Set up an adequately sized snow-stopping system downhill from the safety line.**

On request, the HBSecurity products for metal sheet roofing can be accompanied by a fastener report signed by a qualified technician.

The fastener proposed has passed the internal verification tests; examples:

CORRUGATED METAL ROOF:

- Support: pre-varnished steel sheet 5/10
Detachment of the safety line end plate at 34 kN (progressive static force 0-34 kN)

FOLDED SEAM METAL ROOF:

- Support: pre-varnished steel sheet 5/10
Force applied: 36 kN (progressive static force 0-36 kN) – NO DETACHMENT FROM SHEET SUPPORT

6. Removal of device at end of work

Removal of the device after use must be carried out following the same precautions applied during its installation. Only the cable, turnbuckle and spring can be removed.

7. Identification

Each HBSecurity **Safety Line** is identifiable via the data engraved on the device itself:
Using the Batch Number, the HBSecurity internal tracing system can trace back to the supply batches of all of the components of the HBSecurity **Safety Line**.

HB Security CE
EN 795 c1 C
Batch No. xxxx/YEAR

8. Ordinary inspections

The annual inspection of the safety devices by qualified personnel is mandatory. The personnel shall log the inspection into this booklet and on the identification tag posted next to the access point. The inspections shall be the ones indicated in the list given further below. After the inspection, the technician shall log the inspection on the

identification tag and shall issue the periodical inspection report.

As regards installations in aggressive locations, the inspection must be anticipated according to the type of environment (every six months or earlier).

Inspections:

- Inspection of the **posts**: corrosion level, absence of deformation, abrasions, wear and tear, breaks, etc.
- **Cable** inspection: corrosion level, absence of incisions, reduction in diameter, breaks in metal wires, abrasions, wear and tear, breaks, etc... Check crimpings and cable clamp kit;
- **Spring** inspection: corrosion level; absence of deformations, abrasions, wear and tear, breaks, etc... Check rubber plugs (to be replaced every 5 years);
- Inspection of the **device**: corrosion level, absence of deformation, abrasions, wear and tear, breaks, etc.
- Inspection of the **waterproofing** of the roof as regards the individual components of the fall arrest system and of the absence of water infiltrations. In the event of infiltrations, check the hold of the device fasteners.
- Inspection of the presence of the **tags** and their correct compilation and preservation.
- Inspection of the **documentation**.

9. Useful life of the device

The device has unlimited life in absence of causes that require its placing out of service, subject to periodical checks being carried out at least once every 12 months starting from the date of installation.

The factors that can shorten the useful life of the device and require its placing out of service are the following:

- Very frequent use;
- Damage to device components;
- Aggressive environment;
- Abrasion, shock, crushing;
- Installation errors;
- Operator's fall;

10. Transportation

Protect the product against the risk of damage. Manual handling of the packages must take

into account the limitations established by Leg. Decree. 81/2008 as amended.

11. Storage

Store the product in a dry place, away from aggressive environments or from any other

possible cause of damage or deterioration.

12. Warranty and warranty limitations

The **HBSecurity Safety Line** guaranteed for 10 years from the date of purchase, subject to the following conditions:

The components of the **HBSecurity Safety Line** are guaranteed against all manufacturing defects. The warranty extends to the replacement of any defective parts.

Warranty conditions:

- 1) The replacement or restoration of any products showing non-structural defects, subject to preliminary notification by the client and verification by the manufacturer, shall occur at the time of the next periodical inspection carried out by personnel enabled by the manufacturer to carry out such inspections.
- 2) Any manufacturing defects that should be observed in time and be capable of generating structural problems to any component of the **HBSecurity Safety Line**, subject to notification by the client and verification by the manufacturer, shall be eliminated as soon as possible, compatibly with the intervention timing, including by replacement of the defective component.
- 3) Any intervention costs shall be charged to the manufacturer, subject to notification of the defect being sent within two years after product installation, after which the manufacturer shall guarantee only the sending of the replacement material. The parts intended for replacement of any defective parts shall be shipped to the local dealer or directly to the authorized installer.
- 4) The warranty shall be null and void if the product or one of its parts is tampered with.
- 5) The environmental conditions of reference are those indicated in ISO 9223 and in EN ISO 14713.

Warranty does not apply to:

- Pieces deteriorated following on-site testing, inappropriate use of the device, lack of periodical inspections, faulty installation, tampering, inappropriate installation carried out by unqualified personnel.
- Use of the product with unsuitable accessories.
- Device intervention following operator's fall.
- Installation in aggressive environments.

13. Liability

HBSecurity or the dealer shall be held harmless with regard to damage, injury or death caused by inappropriate use, tampering, use of non-original products, inappropriate installation, failure of the fastenings or of the installation structure.

It is the user's responsibility to understand and follow the instructions for the correct installation and use of the device, to use the device only for the activities it has been designed for and to apply

all possible safety precautions and procedures. Before using the device, the user must put in place an effective procedure for the handling of any emergencies.

The user shall be held personally responsible for the correct use of the device. Should the user not be in the position to accept this responsibility, THE DEVICE SHOULD NOT BE USED.

14. Installation examples



HBSECURITY SAFETY LINE EN 795 CLASS C



Structural Safety Line



HB-Evoflex Safety Line



HB-LAM Safety Line for
folded seam metal roofs



HB-LAM Safety Line
for corrugated
metal roofs



REVOLVING POINT HBSECURITY EN 795 CLASS A1



Structural Revolving Point



Evoflex Revolving point



Deviation point
Flat Roof



ANCHORING POINTS HBSECURITY EN 795 CLASS A1



HBFlex



Wall hook



Eyebolt point



Undertile hook



Structural anchor



Adjustable
undertile hook

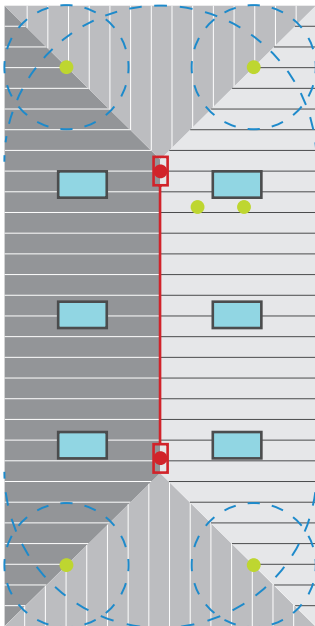


Deviation point
for standing seam
metal roofs

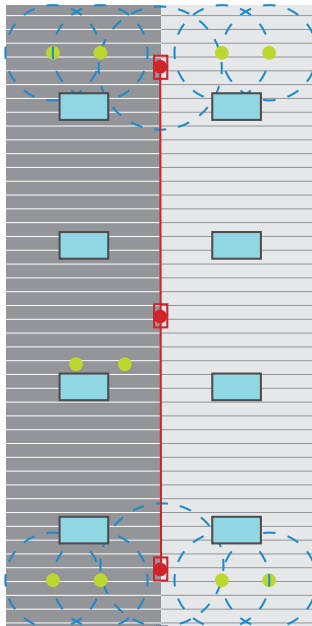


Deviation point
for folded seam
metal roofs

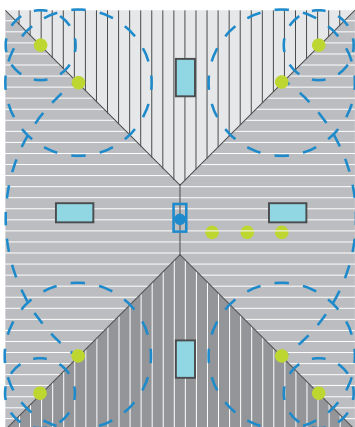
a.



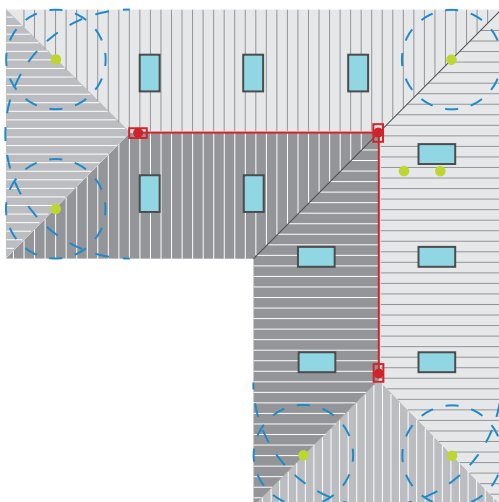
b.



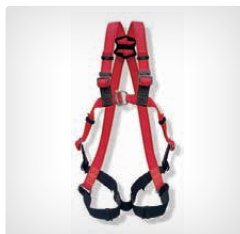
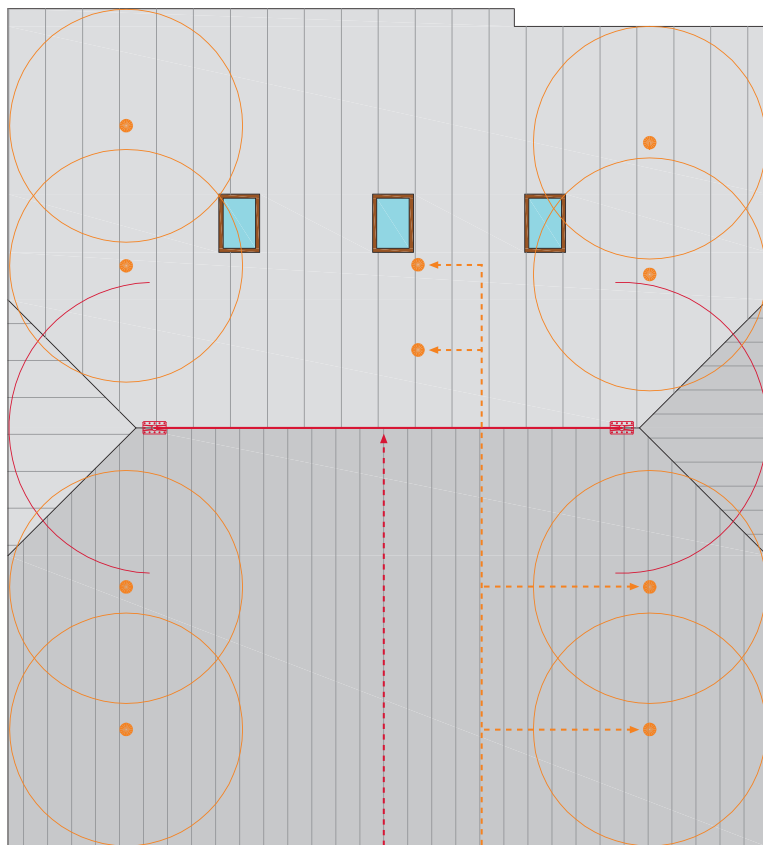
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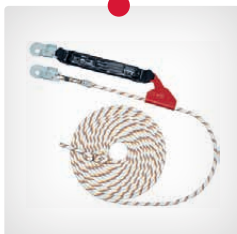
d.



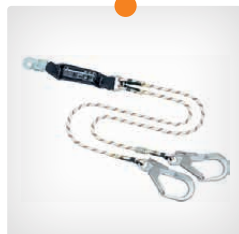
15. Recommended PPE



Harness EN 361



Fall arresters EN 353-2



Twin shock absorber
lanyard EN 354 + EN 355

16. Certificate of conformity

The Manufacturer Harobau Srl

**Hereby declares
that the fall-arresting device**

HBSecurity Safety Line

- Conforms to and has been manufactured in accordance with directive 89/686/EEC and with the national harmonized regulations Legislative Decree 475/1992, Legislative Decree 10/1997 and any amendments thereto;
- Has passed the resistance and performance tests envisaged in EN 795 **Class C**, confirming the declared class. The tests have been carried out at the Veneta Engineering laboratory, ref. Via Lovanio, 8-10, Verona.

Cortaccia [BZ], 11-04-2012
The Legal Representative

Harobau Srl
Sede Legale: Via Nazionale 15, 39044
Laghetti di Egna [BZ], P.IVA 02343410219
Tel +390471818125 - Fax +390471818708
www.hbsecurity.it - info@hbsecurity.it

17. Proper installation statement

The undersigned _____

Installer of the firm:

registered with the Chamber of Commerce of _____ unde No _____

As concerns the installation of anchoring devices on the building located at:

Address _____ No. _____

City of _____ County _____

Hereby declares:

to have installed, to the best of his/her abilities in compliance with the indications of EN 795, the anchoring devices listed as follows:

Quantity	Class	Product designation	Serial numbers

Date _____

Installer's signature _____

18. Periodical inspections register

Date	Inspector's signature	Inspection result	Notes

High technology, maximum reliability

HBSecurity's mission is to meet the safety needs of work at height. Focusing on people by supplying consulting and training services for operators, HBSecurity is a dynamic company engaged in an ongoing search for the most effective and efficient solutions for the safety and peace of mind of rooftop workers.

The logo for HBSecurity, featuring the company name in a bold, white, sans-serif font. The letter 'H' is stylized with a small circular icon above it, resembling a bolt or a screw head. The logo is set against a red rectangular background.

www.hbsecurity.it
Customer service +39 0471818125

Harobau S.r.l.

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