GENESI
ITALIA

EASY SOLUTION lifeline kit

Manufacturer's Assembly, Operation and Maintenance Instructions

Contents.

1. Introduction.

Preventive and protective measures must be adopted in places where workers are exposed to the risk of falling from heights, thereby enabling them to perform maintenance jobs and move with confidence over the work area. Besides being safe, these protection devices must also be ergonomic, i.e. “convenient” for the operator to use. In addition, they must be mentioned in the Technical File of the Roof prepared by the Safety Coordinator during the Design Phase, in agreement with the design engineer, and an integral part both of the project and technical file of the works. The various documents forming the Technical File are the responsibility of different parties, i.e.:

- **Coordinator/technician**: plans indicating the routes and accesses to the roof, technical report illustrating the design solutions adopted, calculations for the bearing structures and fastenings.
- **Manufacturer**: certification of the product, Manufacturer's assembly, operation and maintenance instructions.
- **Installer**: declaration of conformity of the work performed.

From designer to user 1.1

With a policy based on compliance with the principles outlined above, **Genesi Italia** aims to create direct links among system designer, manufacturer, installer and end user by:

- designing the line using software with a user-friendly graphic interface that feeds back suggestions for the components forming the system (as an alternative to the advisory service provided by our technical office);
- supply of the components required to make the entire by **Genesi Italia** itself or by the chain of authorized partners and retailers;
- using easy procedures to install the systems, as indicated in the Manufacturer's Instructions, and pert formed by installers trained by **Genesi Italia** (subject of this document);
- supplying information in the Manufacturer's Instructions allowing the system to be correctly used and serviced.

2. Technical information.

Description of product 2.1

The EASY SOLUTION ™ lifeline conforms to the safety requirements established by standard EN 795:2012 for type C anchor devices, i.e. horizontal flexible anchor lines with maximum 15° incline. The device also conforms to the safety requirements established by technical specification CEN/TS16415:2013, which defines the tests and requirements for devices used by several persons simultaneously.

The lifeline consists of a metal cable stretching between two or more anchor points fixed to adequately sized supports, with an energy absorber installed at the end of the line to absorb the force created should the operator fall. As required by the principle of ergonomics established by Legistrative Decree D.Lgs 81/2008, the operator passes over intermediate brackets by means of a simple, convenient curving movement without having to release from the line.

The device can be installed in a straight line or with corner elements and covers 15, 30 and 45 linear metres. 15 m is the maximum distance allowed between the elements forming the line, while the minimum span is 3 m.

The lifeline supports are sized by a qualified engineer to bear the load transmitted by the lifeline if a person should fall. They can be installed either straight onto beams made of reinforced concrete, timber or steel, or using the purpose-made steel plates. This means that the beams must also be able to withstand the aforementioned loads and this strength requirement must be guaranteed at design time or by means of tests on site.

This type of system is certified for use simultaneously by 2 persons who, if they fall, generate maximum 13.2 KN force on the end anchor points and 2.35 m maximum sag with lines appropriately 45 m in length. The person who uses this system must wear body harness conforming to standard EN 361 and a double lanyard conforming to EN 354 equipped with energy absorber in accordance with EN 355.

If distances exceeding 2 m (the lanyard's limit) must be covered, retractable devices conforming to EN 360 can be used with guided type fall-arrester and a flexible anchor line according to EN 353-2, as indicated in the operation and maintenance manual. Connection to the line must always take place with a connector conforming to standard EN 362.

In any case, the user must always be a person who has been trained to use these systems and the relative personal protection equipment, as testified by a relative certificate. The choice of the most suitable device to use in conjunction with the lifeline must be made by the design engineer after having assessed vertical clearance and the pendulum effect.

The components are made of AISI 304 stainless steel, with the exception of certain inserts, the protective casing on the absorber and the standard supports in aluminium.

Manufacturer 2.2

F.I.S.A. SRL
Via Donizetti 109/111,
24030 Brembate di Sopra (BG) – Italy
Tel. 035 620380 - Fax 035 6220438
e-mail: acquisti@fisa.it

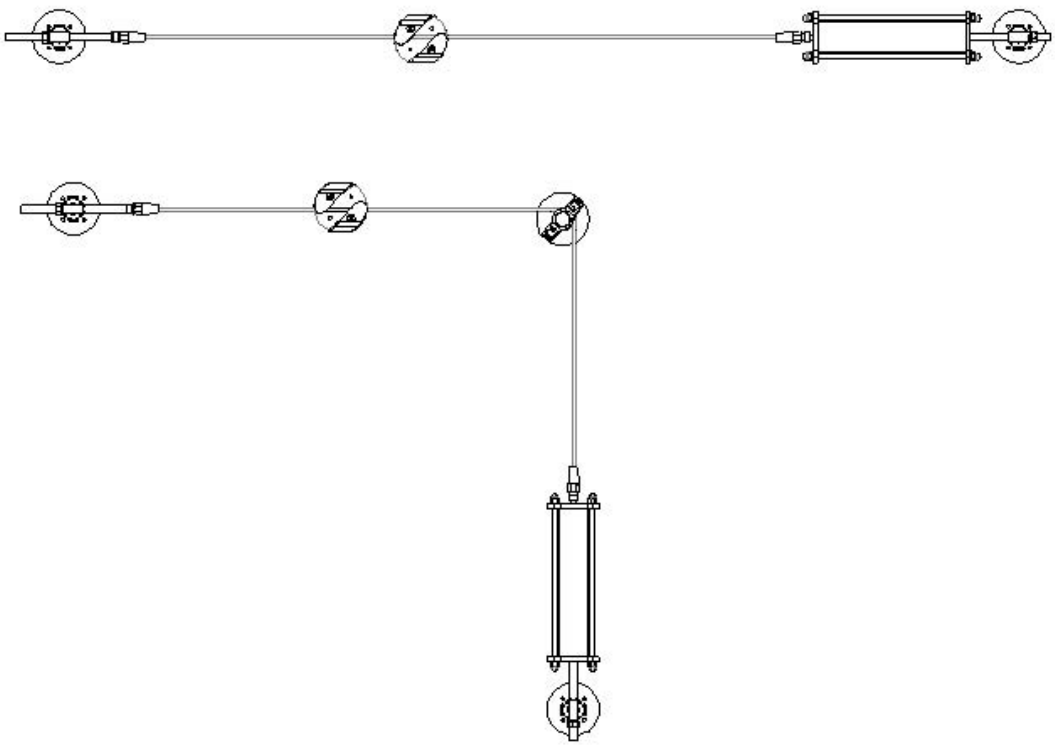
Type approval 2.3

The anchor device has been tested and approved by:

APAVE SUDEUROPE SAS (N°0082)
CS60193
13322 MARSEILLE CEDEX 16 – France

All components are subjected to the tests required by standard EN795:2012 for type C devices and to the additional tests established by technical specification CEN/TS 16415:2013 for several users.

Functional diagram 2.4



EASY SOLUTION 15 kit 2.5

- 2 positionable end brackets art. ES15 (with relative nuts and bolts);
- 15 m of Ø 8mm st. steel cable; 7 x 19 composition;
- 1 energy absorber/tensioner unit art. ES10;
- 1 tensioner art. ES3;
- 2 cable clamp systems art. ES21;
- 1 mandatory sign art. CA00;
- 1 identifier seal art. C35.

EASY SOLUTION 30 kit 2.6

- 2 positionable end brackets art. ES15 (with relative nuts and bolts);
- 1 fixed intermediate bracket art. ES4 (with relative nuts and bolts);
- 30 m of Ø 8mm st. steel cable; 7 x 19 composition;
- 1 energy absorber/tensioner unit art. ES10;
- 1 tensioner art. ES3;
- 2 cable clamp systems art. ES21;
- 1 mandatory sign art. ES0;
- 1 identifier seal art. C35.

EASY SOLUTION 45 kit 2.7

- 2 positionable end brackets art. ES15 (with relative nuts and bolts);
- 2 fixed intermediate brackets art. ES4 (with relative nuts and bolts);
- 45 m of Ø 8mm st. steel cable; 7 x 19 composition;
- 1 energy absorber/tensioner unit art. ES10;
- 1 tensioner art. ES3;
- 2 cable clamp systems art. ES21;
- 1 mandatory sign art. ES0;
- 1 identifier seal art. C35.

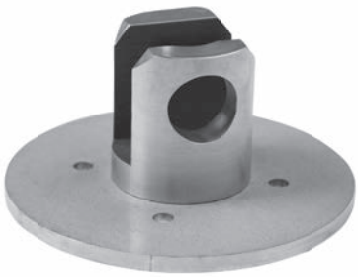
Additional components 2.8

- anchor points to allow landing on roof and/or to prevent the pendulum effect;
- positionable corner elements art. ES6 if the flexible line has a corner turn;

3. Description of components.

End bracket art. ES15

The end bracket creates the starting and end points of the lifeline and must be fixed to dedicated standard or special supports. The articulated head accompanies the deformed geometry of the cable if a fall occurs. This freedom of movement minimizes composite stress in all the elements that form the anchor device.



Material:
AISI 304
Conformation:
125 mm diameter plate; overall height 60 mm
Fastening accessories:
4 (four) 6.3x45 mm self-threading hex screws, flat washers and Ø16 sheath
Description:
4 (four) Ø7 holes in the base plate. The parts forming the central body of the component are assembled by means of the central plug and two circlips that prevent the rotating part and plug from accidentally slipping out of place. The tilting part is fixed to the base plate by an M12x40 countersunk screw tightened by a self-locking nut.

Intermediate bracket art. ES4

The intermediate bracket is used in the 30 and 45 m kits. Installed at a 3 to 15 m centre-distance from the elements before and after it, the intermediate bracket allows the user to pass safely without having to release from the lifeline. ES4 must be fixed to standard or special supports that have been specially sized to withstand the maximum stress generated if the operator falls.

Material:
AISI 304
Conformation:
125x113 mm base; overall height of component 61 mm
Fastening accessories:
4 (four) 6.3x45 mm self-threading hex screws, flat washers and Ø16 sheath
Description:
4 (four) Ø7 holes in the base plate. The holes in the upper parts allow the screw gun socket to pass through

Positionable corner element (additional element) art. ES6

The positionable corner element is an additional component that must be installed in the line whenever the system must turn a corner. Included (on request) in the 15, 30 and 45 m kits, the bracket must be installed not less than 3 and not more than 15 m from the starting/intermediate brackets before/after it. ES6 must be fixed to standard or special supports that have been specially sized to withstand the maximum stress generated if the operator falls.

Material:
AISI 304; central wheel in aluminium alloy
Conformation:
125 mm diameter plate; overall height of element 60 mm
Fastening accessories:
4 (four) 6.3x45 mm self-threading hex screws, flat washers and Ø16 sheath
Description:
4 (four) Ø7 holes in the base plate. The holes in the side part, to prevent the cable from accidentally slipping out of place, allow the screw gun socket to pass through.
The parts that form the element are assembled by means of an M16x80 pan head cap screw with square underhead tightened by an M16 self-locking nut.

NOTE: The cable's maximum horizontal deflection angle through the positionable angle is 45°

6.3x45 mm self-threading screws

These self-threading screws are used to fasten the end, intermediate brackets and positionable corner elements to the supports, as explained previously. The hex screws thread the support material as they are screwed in while the EPDM washer guarantees a watertight finish.

Material:
AISI 304
Conformation:
125x113 mm base; overall height of component 61 mm
Fastening accessories:
4 (four) 6.3x45 mm self-threading hex screws, flat washers and Ø16 sheath
Description:
4 (four) Ø7 holes in the base plate. The holes in the upper parts allow the screw gun socket to pass through

NOTE: The cable's maximum horizontal deflection angle through the intermediate bracket is 30°

Tensioner art. ES3

This component allows pre-tension to be applied to the flexible line.

Material:
AISI 304
Conformation:
turned bar with M16 thread and MA pitch by 250 mm and turned bar with M18 thread and MA pitch by 26 mm in length. Overall bar length 290 mm.
Description:
once the central part of art. ES15 has been positioned, the M16 nut is tightened to prevent the element from slipping out of the central part itself. The cable clamp (art. ES21) is tightened onto the M18 turned end
Hardware supplied:
M16 nut and washer.

Tensioner/energy absorber unit art. ES10

The energy absorber/tensioner unit reduces kinetic energy in the event of a fall and softens the impact. The energy is dissipated by the action of a stainless steel ball which passes through an EPDM cylinder positioned in the protective casing. The rubber cylinder must be immediately replaced after a fall. ES10 also acts as a tensioner and ensures that the cable is positioned correctly. Once it has been inserted into art. ES15, the entirely threaded M16x200 screw acts as a tensioner.

Material:
AISI 304; EPDM
Dimensions:
The absorber measures an overall 650 mm in length and 130 mm across
Net weight:
3200 g
Description:
once the central part of art. ES15 has been positioned, the M16 washer and M16 nut are tightened to prevent the tensioner from slipping out. The cable clamp sleeve and its claws are screwed onto the opposite end.
Hardware supplied:
M16 nut and washer; M18-M16 reducer; fall indicator (section of M12 bar behind M18-M12 reducer painted red)

STELA s.r.l.	CARATTERISTICHE FISICHE COMPOUND CODE: EPDM 80 NERA SPECIFICATION:	DATA 03/12/2013

VULCANIZZAZIONE PROVETTE - CURING						POSTRATTAMENTO - POST-CURING				
placche spessore mm 2	m'	20	a	160	°C		ore	a		°C
placche spessore mm 6	m'		a		°C		ore	a		°C
tomboli spessore mm 12,5 (provino tipo 1)	m'	40	a	160	°C		ore	a		°C
tomboli spessore mm 6 (provino tipo 2)	m'		a		°C		ore	a		°C

Parametri originali	Orginal parameters	Unità di misura unit	Valori richiesti required values	Valori riscontrati tested values	Metodo di prova test method
Durezza	Hardness	Shore A	80±5	84	UNI ISO 7619
Densità	Specific gravity	g/cm³	1,17±0,03	1,19	ISO 2781
Carico di rottura	Tensile strenght	N/mm² (MPa)		11,8	UNI 6065 1
Modulo al 100-300 %	Tensile strenght	N/mm² (MPa)			UNI 6065 1
Allungamento a rottura	Elongation	%		240	UNI 6065 1
Lacerazione	Tear resistence	N/mm		29	DIN 53515
Lacerazione	Tear resistence	N/mm			UNI 4914 C

Compression Set					Valori richiesti required values	Valori riscontrati tested values	Metodo di prova test method
deformazione iniziale del	25 %						
dopo	70	ore a	100	°C	%	30 %	UNI ISO 815 A
dopo		ore a		°C	%	%	UNI ISO 815

Prova ozono	dopo	ore	alla concentrazione di		pphm,	
Ozone test	temperatura	°C;	allungamento		%	UNI 6067
	il provino, analizzato sotto lente di		ingrandimenti,	NON	presenta screpolature	

Prova al freddo	TR-TEST	TR 10%	°C	ASTM D 1329
Low temperature testing	TR-TEST	TR 50%	°C	ASTM D 1329
	BRITTLENESS POINT		°C	UNI 7320 A

VARIAZIONE DELLE CARATTERISTICHE - DELTA PHISICAL AND MECHANICAL PROPERTIES

AMBIENTE CONTACT MEDIA	Metodo prova test method	Tempo Time ore	Temperatura Temperature °C	Durezza hardness-change punti		Carico rottura tensile-change %		Allungamento elongation-change %		Volume volume-change %		Peso weight-change %	
				required	tested	required	tested	required	tested	required	tested	required	tested
ARIA	ASTM D573	70	100		+3		+6		-21		-2,3		

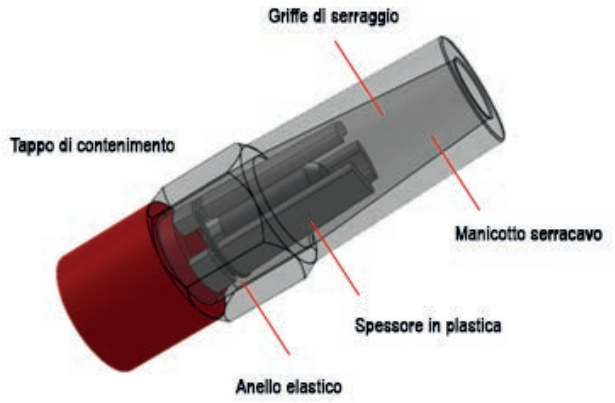
NOTE: _____

Date here indicated were obtain with laboratory samples and standard curing time. Result obtained with different conditions of curing time and different samples could be different

Firma
RISVI _____

Cable clamp system art. ES21

The cable clamp system blocks the ends of the stainless steel cable. The MA pitch M18 female thread allows the “core” of the device to be connected to the tensioner and absorber/ tensioner unit



Material:
AISI 304
Conformation:
hollow truncated cone with hexagonal-topped larger base. Total length of element 60 mm. Hex head for 24 mm open-ring box wrench
Fastening:
the three claws grip the cable, which is unable to slip out of the stainless steel sleeve thanks to the internal conformation of the component itself. Once the cable has been positioned, the MA pitch M18 female thread allows the end brackets of the device to be connected to the steel cable.
Hardware supplied:
3 claws with spring ring to hold them in place; plastic shim to keep the claws in position and allow the cable to easily pass through without having to remove the claws from the sleeve; top plug in polymeric material screwed onto the internal thread, which prevents the three claws from accidentally slipping out of place while keeping them aligned as the cable is inserted. Once the cable has been positioned, the plastic plug and shim can be discarded.

Cable art. ES11

The steel cable allows the operator to anchor to the lifeline.

Material:
stainless steel
Diameter:
8 mm
Net weight:
240 g/m
Strength:
36.4 KN
Composition:
7 strands with 19 wires each, pre-shaped and crossing towards the right

Mandatory identification sign art. CA00

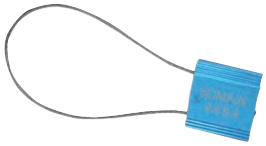
It is obligatory to affix the sign to each access to the zone where safety measures have been implemented.

Material:
screen-printed aluminium
Installation:
on each point of access
Information given:
type of line, serial number, maximum number of persons who can use the lifeline simultaneously in each section, vertical clearance, date on which lifeline began service, instruction to the effect that 3rd category personal protective equipment (PPE) must be worn, the manufacturer's name, the dealer's name, the installer's name.

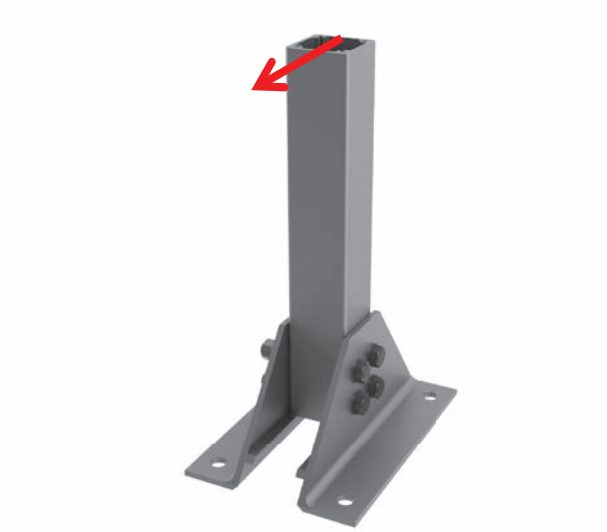
Anti-tampering seal art. 35

The same identification seal is used for each line and must be installed at the end of this latter. The numbering is the same as the sign described above and the certificate supplied with the system.

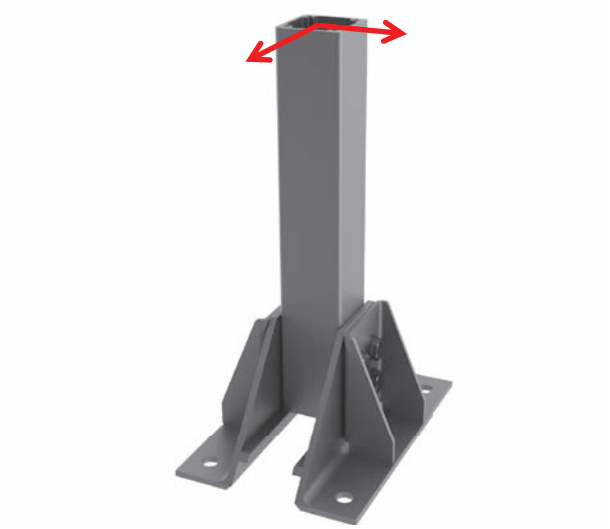
Installation:
at the end of each line
Information given:
serial number



Standard supports



Universal base



Universal base for corner element

Material:
base and uprights in 7003-T6 extruded aluminium; stainless steel reinforcements for ESR-UNIVERSAL support
Conformation:
Upright 70x70x5 mm; base 295 mm x 205 mm; overall height of support 500 mm (height measured at centre of cable); centre distance of fixing holes 250 mm x 154 mm
Fastening method:
directly onto structure with M16 bolts and two-component resin or purpose-made backplates
Hardware supplied:
4 (four) M12 x 100 mm screws with self-locking nuts.

NOTE. Different design engineering requirements can be met by creating any other type of support comprising a stainless steel base onto which the uprights in 7003 alloy can be fitted.

The red arrows show the directions in which the two supports are used

M16 bolt

The M16 bolts anchor the supports to the bearing structure of the roof (in reinforced concrete, timber or steel) on the basis of their conformations. They can be inserted straight into the roof using two-component epoxy resin or backplates.

Composition:
16x175 threaded bar, flat washer and nut (if backplates with double washer and double nut are used)
Material:
A4-70 steel
Tightening torque:
170 Nm

Two-component vinylester resin art. RBS 345 MX

High-performance rapid hardening two-component epoxy resin is used for inserting threaded bars straight into the structure. Refer to the product data sheet for the technical specifications and instructions for use.

Composition:
styrene-free vinylester with benzoyl peroxide as activator
Contents:
345 ml per cartridge

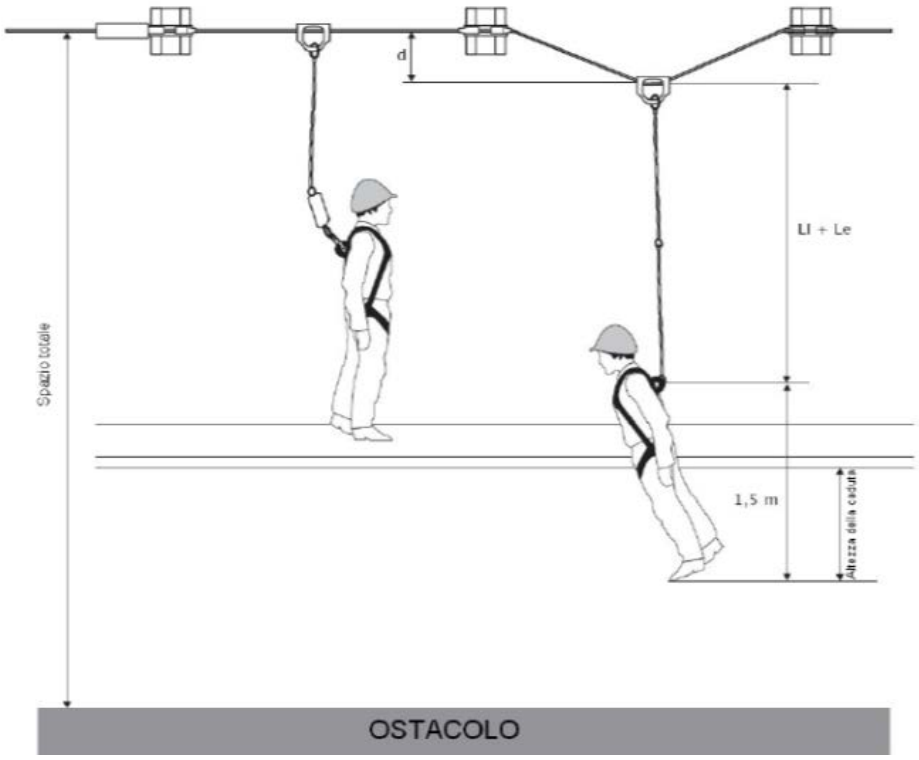
4. Assembly.

Recommendations 4.1

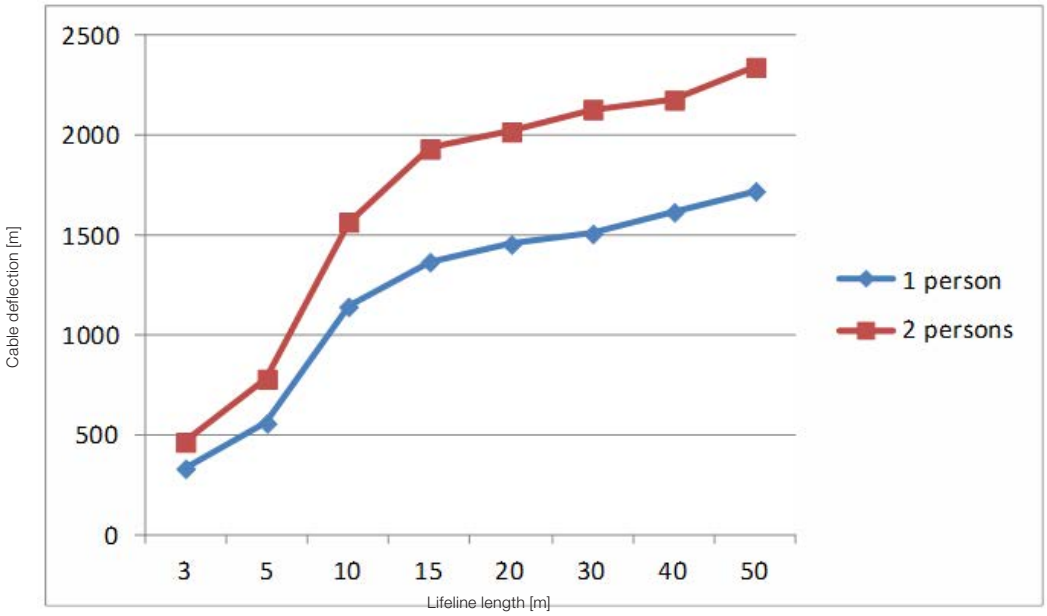
Before the system is assembled, it is advisable to inspect the construction site to assess the real context in which the lifeline will be installed and to make sure that it corresponds to the roof plan showing all the elements of the lifeline.
The lifeline must not be more than 45 m in length and the cable should not form an angle of more than 15° to the horizontal plane.
The lifeline's maximum sag, should two persons fall simultaneously in the same point, is 2.35 m. It is very important to make sure that, under maximum deflection, there is no risk of the cable colliding with sharp-edged objects and being damaged. Always assess vertical clearance before proceeding with any installation.
To prevent the operator from colliding with obstacles underneath, vertical clearance must be less than fall distance. Vertical clearance is calculated by means of the expression below:

Ll + Le + d + 1.5 m +1.0 m < free fall distance

Where:
- «Ll» is the cable length
- «Le» is the stopping distance of the energy absorber
- «d» is cable deflection (provided by the **Genesi Italia** technicians)
- the distance between the harness anchor point and the ends of the lower limbs must be 1.5 m
- there must be at least 1 m free space beneath the operator's feet.



The graph below allows cable deflection to be estimated on the basis of lifeline length and the number of persons connected to the device:



To facilitate the estimation work, an example calculation is described below:

Length of lifeline:	15 m
Number of users:	2
Length of lanyard:	Ll= 2m
Increase in length of absorber in use:	Le= 600 mm
Cable deflection:	d= 1950 mm

Vertical clearance: 2 m + 0.6 m + 1.95 m + 1.5 m +1.0 m =7.05 m

The fall clearance must be 7.05 m more, to prevent the falling person from colliding with obstacles underneath.

To ensure that the lifeline is used in the best possible way, it is advisable to install the cable more than 20 cm from the roof surface.
The system must be assembled in accordance with the accident prevention measures established by Legislative Decree D.lgs 81/2008 - Consolidation Act concerning Safety and with the indications provided by standards EN 795:2012 and UNI CEN/TS16415:2013.

Fitters 4.2

The EASY SOLUTION lifeline should be installed by fitters trained by an in-house technician, to ensure that the proper assembly methods are used. Fitters associated with partners of **Genesi Italia** are obliged to draw up their own Risk Assessment Reports describing the risks involved in assembling the lifeline and the measures adopted to reduce the probability of such risks occurring.

Assembly kit 4.3

The main tools required for correct assembly are listed below:

- Tools for making holes: rotary hammer drill, hole cleaner, blow gun, resin dispenser;
- torque wrench for tightening nuts on threaded bars;
- 24 mm open-ring box wrench or ratchet wrench and 19 mm open-ring box wrench or ratchet wrench
- sensor kit: formed by anchor verification sensor art. SVAN, tension verification sensor art. SVTE, traction verification sensor art. SVTR, all of which can be connected to a purpose-made hand-held computer art. PALM for data reading.
- hand tools (pliers, assorted wrenches).

Handling and storage 4.4

To prevent the risk of corrosion, always take the greatest care when handling and storing all the lifeline components. All components weigh less than 25 kg, which is the maximum weight that single operators are allowed to handle and carry in the manual mode. When components (particularly special supports) weigh more than 25 kg, they must be handled by two operators or by crane. These operations are also an integral part of the Risk Assessment Report.

Steps 4.5

The steps described in this chapter refer to assembly of the sole lifeline in the required position and must be performed in complete safety, thus in compliance with the instructions in the Operational Safety Plan drawn up by the installer and in accordance with the Safety and Coordination Plan drawn up by the Safety Coordinator during the Design Phase or the Safety Coordinator during the Works Execution Phase if these two persons are present. If the zone is not in fully safe conditions, it is obligatory to begin by installing the individual anchor points so that the operators can ascend to the desired zone or use a temporary lifeline.
All operations required to prepare the work area or accede to this are understood as excluded from the installation steps of this lifeline.

Assembly of supports 4.5.1

The EASY SOLUTION device must be installed on the standard supports marketed by **Genesi Italia** or on special supports, sized and designed by the technical office of that enterprise.

The support should be selected from the available range or can be calculated on the basis of the roof on which it will be assembled with the previously mentioned M16 bolts.

Fixing directly to timber or reinforced concrete (for each threaded bar):

- make four Ø18 holes at least 100 mm in depth on the roof using a rotary hammer drill (the depth is indicative for a concrete support surface in strength class C25/30; it is advisable to have the installation depth assessed by a professional if the mechanical characteristics of the support surface are different);
- clean the holes with by turning the hole-cleaner inside them and then use a hand pump to remove all the dust from the sides (repeat this operation several times);
- dispense styrene-free vinylester resin, slowly working from the bottom of the hole and moving upwards, so as to prevent air pockets from forming;
- insert the M16 threaded bar by twisting it while pushing;
- position the support and allow the resin to harden for the time indicated on the package;
- insert the washer and nut on the threaded bar;
- tighten the nut by applying 170 Nm tightening torque.

Fixing directly to hollow flat blocks + screed with electrowelded net (for each threaded bar):

- make a Ø20 hole in the roof using a rotary hammer drill without penetrating the lower side of the flat block;
- clean the hole with by turning the hole-cleaner inside it, then use a hand pump to remove all the dust from the sides (repeat this operation several times);
- insert a pre-shaped net pocket to hold the resin;
- dispense two-component epoxy resin, slowly working from the bottom of the hole and moving upwards, so as to prevent air pockets from forming and too much resin from oozing through the net;
- insert the threaded bar by twisting it while pushing.

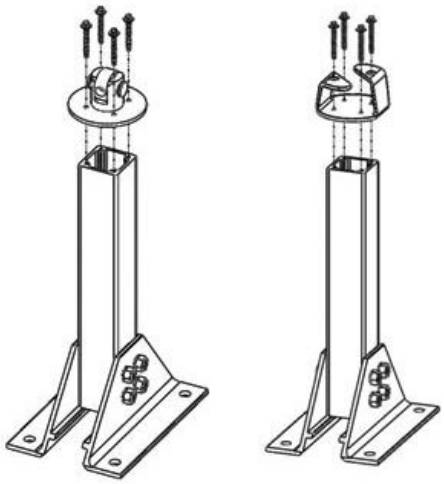
Fixing on steel with backplates (for each threaded bar):

- position the support and relative backplate by clamping into the steel structure;
- insert the M16 threaded bar with grower washer and nuts both at the top and underneath (self-locking nut). Tighten the nut using 170 Nm tightening torque.

NOTE: as specified in standard EN 795, the installer is responsible for making sure that the supports are fastened properly. It is advisable to perform pull-out tests using the purpose-made anchor verification sensor art. SVAN with hand-held computer art. PALM for reading the data.

Installation of fixed end and intermediate brackets 4.5.2

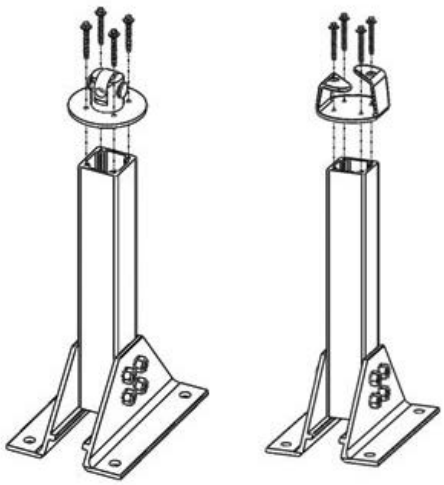
After the supports have been installed, proceed by fixing the end brackets art. ES15 and intermediate brackets art. ES4 to them using the relative self-threading hex screws, as described alongside:



- align the 4 holes in the support with those of the components. Bear in mind that they are symmetrical and can therefore be positioned through 90°
- insert the srews and washers from the top through to end of travel

Installation of positionable corner element 4.5.3

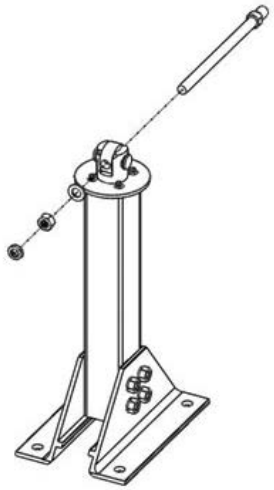
After the supports have been installed, proceed by fixing the positionable corner elements art. ES6 to them using the relative self-threading hex screws, as described alongside:

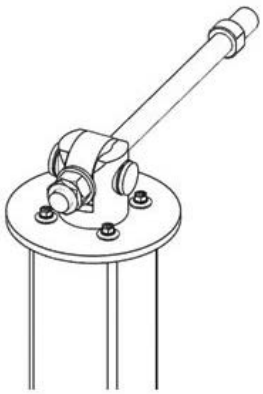


- align the 4 holes in the support with those of the brackets. Remember to position the bracket so that the part that prevents the cable from slipping out does not obstruct the passage of the cable itself
- insert the srews and washers from the top through to end of travel

Tensioner assembly 4.5.4

The tensioner (art. ES3) must be inserted at one end of the line as described:

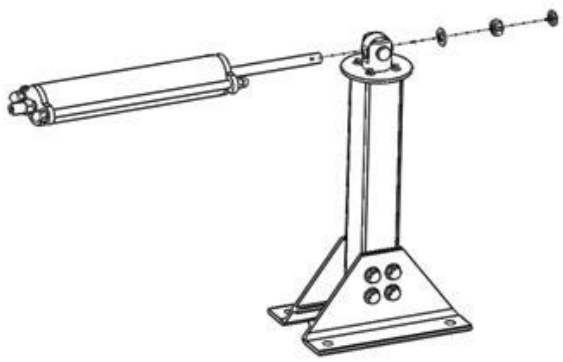


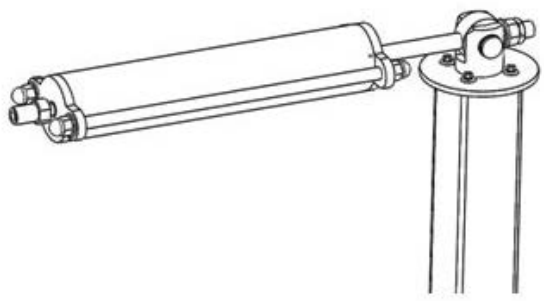


- unscrew the M16 nut, the check nut and washer from the threaded bar, then insert this into the through hole of the central part of art. ES15;
- once the washer has been inserted, re-position the nut and safety check nut on the tensioner; allow the tensioner as much thread as possible.

Assembly of absorber/tensioner unit art. ES10 4.5.5

The energy absorber/tensioner unit art. ES10 must be fitted at the other end of the line, on the end bracket, as described:



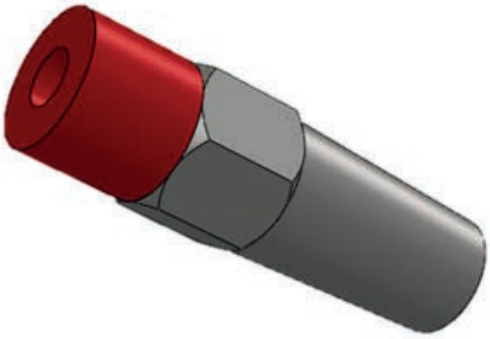


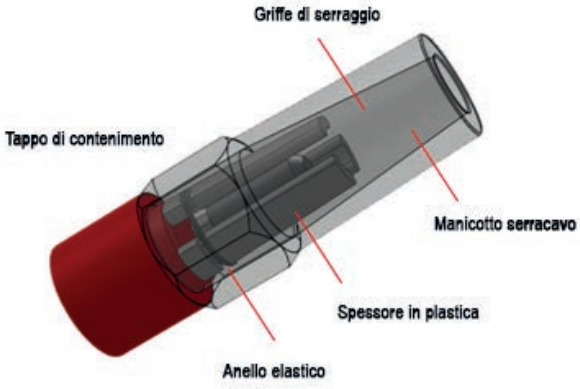
- unscrew the M16 nut, the check nut and washer from the threaded screw, then insert the threaded bar into the through hole of the central part of art. ES15;
- re-position the washer, nut and check nut on the threaded bar. Only turn the nut and check nut thread a couple of times as the screw also acts as a second tensioner on the line.

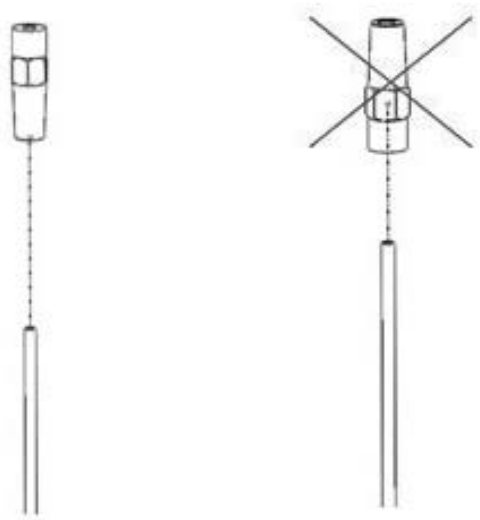
Cable end termination 4.5.6

The kit includes two systems for terminating the cable, as shown in the illustrations below.

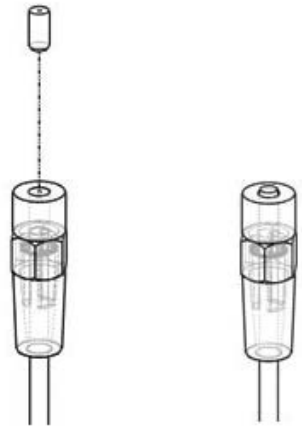
The components of the system illustrated below are followed by a description of the operations required to correctly terminate the ends of the flexible line.



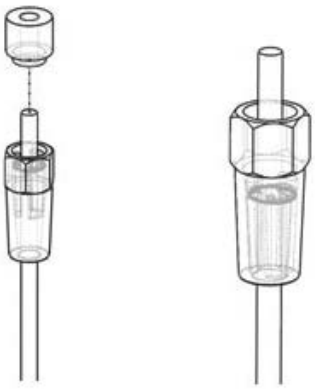




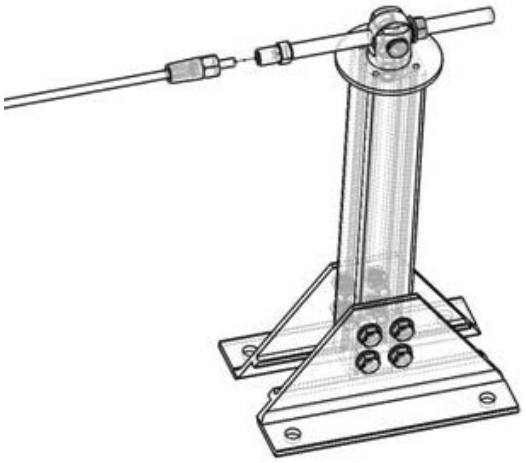
- First fit one of the two ends into one of the two sleeves. The cable must be inserted into the cylindrical top of the sleeve (see illustration below) (if the cable is inserted in the wrong direction, the sleeve will not clamp the cable and you will be unable to connect the flexible line to the absorber and tensioner).



- pass through the cable clamp and make sure that the plastic shim is pushed out during the operation. Once the shim has been pushed out, place your index finger over the plastic plug's through hole and continue to insert the cable until it touches your finger;



- screw on the plastic plug and apply force in the opposite direction. When the cable is slightly pulled, the three claws will bite into it and hold it fast thanks to the progressively narrowing through hole in the sleeve;



- screw the cable clamp sleeve onto the M18 threaded male reducer in the absorber (tensioner).

Cable insertion 4.5.7

The next step is to insert the cable as described below:

- take the free end of the cable and route it through any intermediate brackets and positionable corner elements installed.

NOTE. only assemble the cable clamp sleeve on one of the two ends and fit the cable to one of the end brackets of the device (tensioner). A cable clamp sleeve on both ends of the cable would prevent this latter from being routed through the positionable corner element.

Temination of remaining cable end 4.5.8

After cutting the 15-30-45 m cable to the required length, repeat the operations described in the “CABLE END TERMINATION” section.

NOTE. It is advisable to cut the cable using a shearing machine. Use of an angle grinder would alter the conformation of the cable ends and make them more difficult to fit into the cable clamp sleeve.

Line tensioning 4.5.9

All parts of the lifeline will now have been assembled. The lifeline must now be tensioned as described below:

- apply the cable tension verification sensor art. SVTE, with its purpose-made hand-held computer art. PALM for data reading, to the cable.
- using a 24 mm open-ring box wrench, tighten the nuts on the outside of the end brackets until cable tension is between 600 and 1000 N (pre-tension will depend on the length of the line. The nearer line length is to 45 m, the nearer pre-tension must be to 1000 N; recommended value: 750 N). Tighten the lower check nuts to prevent the line from slackening.

Lead seal application 4.5.10

The identification seal art. C35 must be applied near the absorber.

Assembly of individual anchor points 4.5.11

To ensure that the line is fully usable, individual anchor points must be installed as indicated in the project, to allow the operator to ascend, reach the lifeline and to prevent the pendulum effect. As mentioned previously, these anchor points differ, depending on the structure and shape of the roof: their conformation, use, materials and fastening systems change. Thus:

- comply with the fixing procedure used for the supports

Re-waterproofing 4.5.12

To prevent the supports and anchor points from allowing water to infiltrate, suitable waterproofing must be applied to the support surface at the fitter's discretion and responsibility.

Sign application 4.5.13

The installation operations terminate by application of the mandatory sign bearing the previously described information (art. CA00) on a level with each access point.

Issue of correct installation declaration 4.5.14

Once the installation operations have terminated, the installer must fill out the installation declaration and issue the relative certificate to the owner of the building.
The certificate must be issued together with the project of the system, i.e. a technical report stamped and signed by an authorized technician showing the points of access, ascent route to the real system by means of individual anchor points, the position of the type C EASY SOLUTION system, any non-treadable areas.

The next pages contain fac-similes of the following documents:

- “correct installation declaration”
- a few examples of technical reports that may be of interest to the installed and design engineer.

Dichiarazione di corretta installazione dispositivi anticaduta permanenti

In merito ai lavori di posa di dispositivi di ancoraggio anticaduta installati sull'immobile sito in:

Comune ..... Prov. .....

via/piazza ..... n° .....

Pratica edilizia .....

Il sottoscritto: ....

nome Cognome

Legale rappresentante della Ditta .....

Con sede via/piazza ..... n° .....

Comune ..... Cap ..... Prov. .....

Iscritto alla C.C.I.A.A di ..... n° .....

Dichiara

Che i dispositivi utilizzati

UNI EN 795	**Modello**	**Produttore**
Tipo **A** ☐	.....	.....
Tipo **C** ☒	Easy Solution	Fisa

sono stati correttamente messi in opera secondo le indicazioni del costruttore e alla norma UNI-EN 795

- sono stati posizionati sulla copertura come da progetto allegato redatta da Arch/Ing/Geom. .....
- Secondo le indicazioni fornite nella relazione di calcolo allegata redatta da Arch/Ing/Geom. .....

****

Le caratteristiche dei dispositivi di ancoraggio le istruzioni sul loro corretto utilizzo, le schede di controllo sono state depositate presso:

☐ Il proprietario dell'immobile
☐ L'amministratore

La targhetta di segnalazione per linea di vita è esposta in:

☐ Prossimità di ogni accesso
☐ Sulla linea di vita stessa
☐ .....

Data di messa in esercizio del sistema .....

Data di futura revisione 1 anno

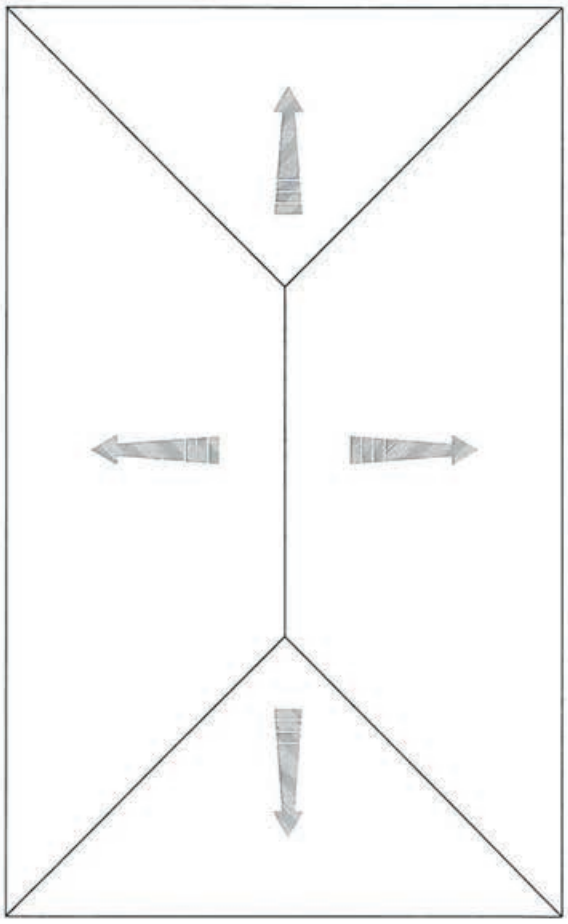
L'installatore *(timbro e firma)*

Data .....

Sarà cura del proprietario dell'immobile mantenere le attrezzature installate in buono stato al fine del mantenimento nel tempo delle necessarie caratteristiche di solidità e resistenza. La manutenzione deve essere affidata a personale qualificato ed eseguita con le modalità e la periodicità indicata del costruttore.

LEGENDA SISTEMI DI ANTICADUTA

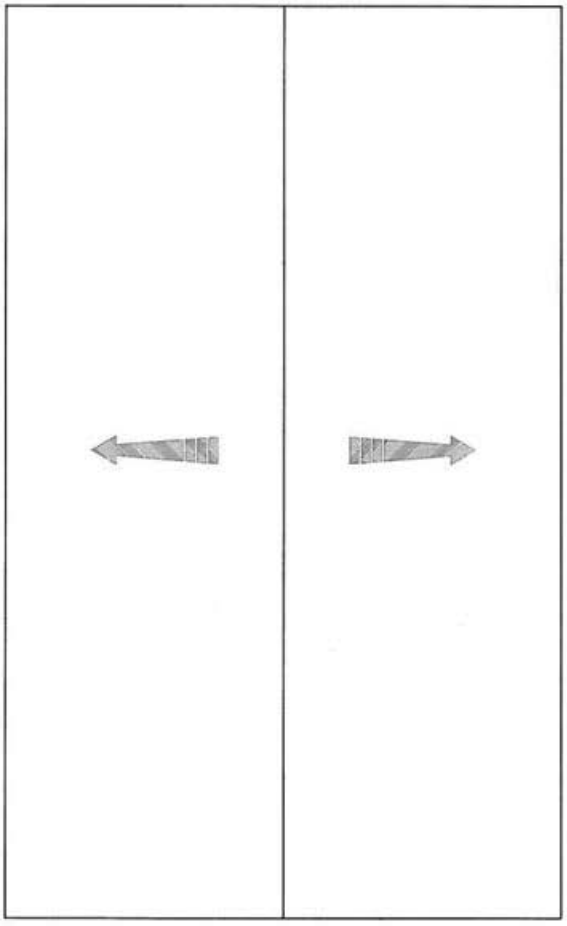
An°	PUNTO DI ACCESSO		LINEA DI ANCORAGGIO ORIZZONTALE (EN 795 clas.C)
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO TERMINALE		LINEA DI PENDENZA DELLA FALDA
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO INTERMEDIO		SCALA A PIOLI O RETRATTILE
	ANCORAGGIO (EN 517/795) (mono-ancoraggi / bi-ancoraggi)	Dc	DISTANZA DI CADUTA



COMMITTENTE	POSATORE	RIVENDITORE ESCLUSIVO
CANTIERE		somain ITALIA
OGGETTO		
DATA		

LEGENDA SISTEMI DI ANTICADUTA

An°	PUNTO DI ACCESSO		LINEA DI ANCORAGGIO ORIZZONTALE (EN 795 clas.C)
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO TERMINALE		LINEA DI PENDENZA DELLA FALDA
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO INTERMEDIO		SCALA A PIOLI O RETRATTILE
	ANCORAGGIO (EN 517/795) (mono-ancoraggi / bi-ancoraggi)	Dc	DISTANZA DI CADUTA



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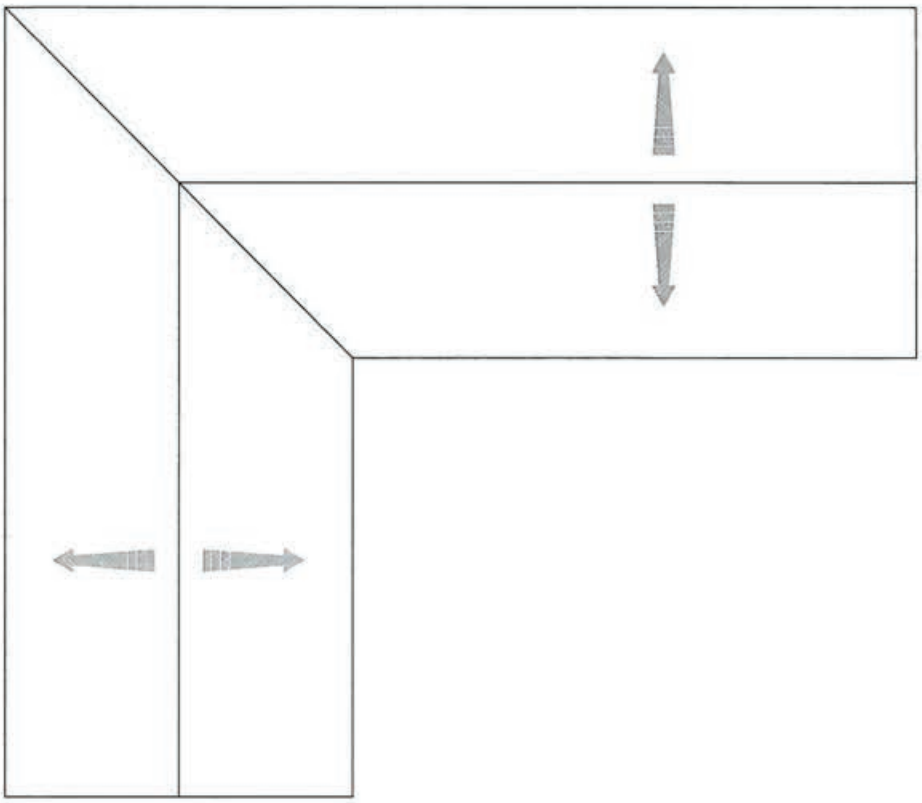
LEGENDA SISTEMI DI ANTICADUTA

An°	PUNTO DI ACCESSO		LINEA DI ANCORAGGIO ORIZZONTALE (EN 795 clas.C)
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO TERMINALE		LINEA DI PENDENZA DELLA FALDA
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO INTERMEDIO		SCALA A PIOLI O RETRATTILE
	ANCORAGGIO (EN 517/795) (mono-ancoraggi / bi-ancoraggi)	Dc	DISTANZA DI CADUTA



COMMITTENTE	POSATORE	RIVENDITORE ESCLUSIVO
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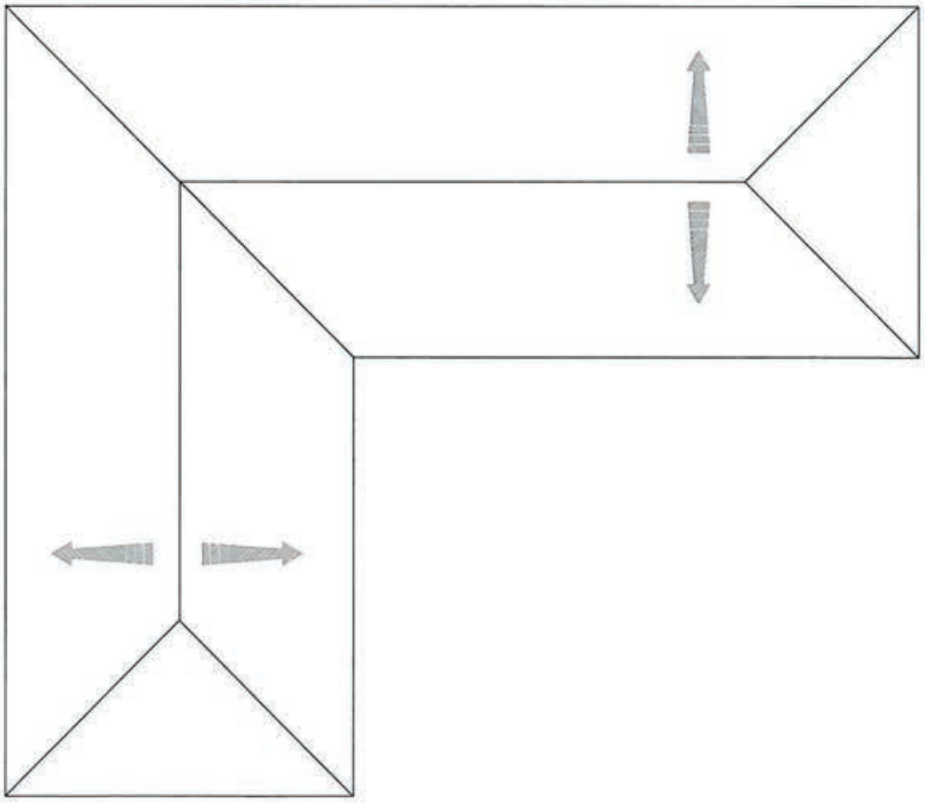
LEGENDA SISTEMI DI ANTICADUTA

An°	PUNTO DI ACCESSO		LINEA DI ANCORAGGIO ORIZZONTALE (EN 795 clas.C)
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO TERMINALE		LINEA DI PENDENZA DELLA FALDA
	ANCORAGGIO STRUTTURALE (palo/supporto) ELEMENTO INTERMEDIO		SCALA A PIOLI O RETRATTILE
	ANCORAGGIO (EN 517/795) (mono-ancoraggi / bi-ancoraggi)	Dc	DISTANZA DI CADUTA



COMMITTENTE	POSATORE	RIVENDITORE ESCLUSIVO
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OGGETTO		
DATA		

5. Operators and their equipment

Users 5.1

The EASY SOLUTION lifeline is certified for use by 2 persons simultaneously. Although it has a deformable energy absorber, this system can be used for rescuing a person hanging from the line. To avoid serious permanent damage, this must be performed within 20/25 minutes.
Since use of category III PPE is required, operators who use this type of system must be specifically trained, as established by Legislative Decree D.lgs 81/2008 - Consolidation Act concerning Safety. Moreover, casualties must only be recovered by specifically trained persons.

Personal Protective Equipment (PPE) 5.2

This system may only be used by an operator equipped with the required Personal Protective equipment (PPE) able to limit to 6 kN the maximum force imposed on the operator's body when a fall is arrested.
Remember that PPE maintenance is established by the manufacturer according to the method and frequency indicated in the user manual, after a form has been filled out with the date on which the device was put into service, the date of successive maintenance work and the expiry date.
Carefully read the PPE User manual supplied.
The choice of PPE best suited to the work required must be assessed for each individual job. Work performed at heights requires the following equipment at least:

Harness

The minimum requirement is:
- equipment conforming to standard EN 361;
- complete with thigh guards and adjustable straps;
- back and/or chest fall-arrest attaching point.

Better, if complete with the following additional equipment:
- padded thigh guards;
- both back and chest fall-arrest attaching points.
- lumbar belt with positioning attachments conforming to EN 358;
- central attachment point conforming to EN 813.

Double lanyard with energy absorber

The maximum length of the lanyard with the absorber compacted should be 2 m, including the connectors. Compliance with the following specifications is also required:

- double elastic lanyard conforming to EN 354 with two connectors for connecting to the line conforming to EN 362
- energy absorber conforming to EN 355 with connectors for connecting to the harness conforming to EN 362.

Connectors

The connectors are a fundamental part of the system, since they are used for the connections between harness and lanyard or dissipator and between these and the life line. You cannot anchor to the flexible line without using the connector. Connectors must comply with the following specifications:

- they must conform to standard EN 362;
- they must be equipped with double intentional operating device (screw fastening, automatic swivel device or double opening system)

Retractable device

If work performed at heights requires a lanyard longer than 2 m, one of the retractable devices that Genesi Italia indicates in the declaration enclosed with this manual can be used in conjunction with or instead of the double lanyard with energy absorber.

Use of any retractable fall arrest device including a guided type fall-arrester (EN353-2), that has not been indicated in the declaration could result in incompatibility among the different devices, prevent vertical clearance from being calculated correctly and falls from being arrested within 2m. For this reason, **Genesi Italia** strongly advises you to use the devices listed in the declaration supplied with this manual.

Use of any retractable device or guided type fall arrester including a flexible anchor line (EN353-2) that is not included in the aforementioned list relieves **Genesi Italia** from all liability.

Before he proceeds with any other action, the operator must always check to make sure that the retractable device:

- conforms to standard EN 360;
- is equipped with internal retractable mechanism, self-locking system and energy dissipator;
- has a steel cable of the required length;
- is equipped with connectors, one for attaching to the line and one for attaching to the harness, conforming to EN 362;
- for use on slopes less than 30%, it is obligatory to use the device in conjunction with a steel lanyard with absorber, or some other device recommended by the manufacturer of the retractable device to allow this to also be used in the horizontal position.

As required by Standard EN 360, the retractable fall arrest device must be subjected to annual inspection by an organization authorized by the manufacturer since it is equipped with a special arresting system that must be checked by competent persons.

6. Operations prior to use/maintenance.

Owner's responsibility 6.1

The owner of the building on which the EASY SOLUTION system is installed is responsible first-hand for all the operations that take place in his property and that involve the use of special safety systems. He is therefore authorized to allow access to this type of system only to persons he considers fit. Thus:

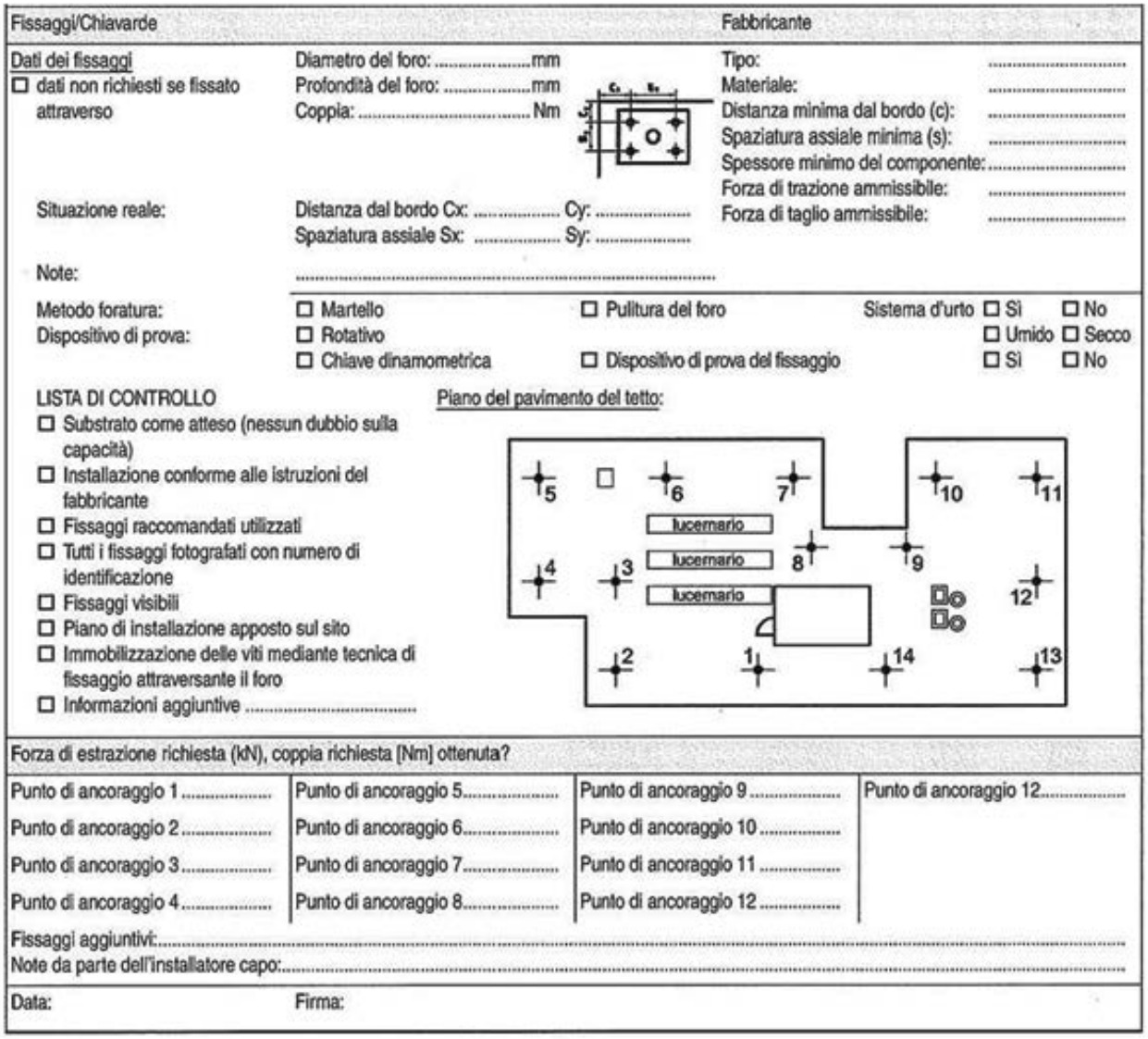
he must keep the certificate supplied with the system. The certificate must indicate:

the name and number of the system: each system has its own identification number. This number allows the composition of the system and certain data to be traced, i.e.:
manufacturer: manufacturer's name and details (FISA);
dealer: name and details of the official dealer (**Genesi Italia**);
retailer: name and details of the retailer (authorized by **Genesi Italia**);
installer: name and details of the company that installs the system, an affiliate of the authorized retailer, which certifies that installation has been performed correctly in accordance with a project and/or as described in the Installation Manual. The correct installation declaration must at least contain information attesting to the fact that:

the device has been installed in compliance with the manufacturer's instructions;
installation has been performed in accordance with the plan;
the device has been provided with photographic information/documentation, especially when the fixing devices and substrate are no longer visible after installation.

A schematic example of an installation plan is illustrated below:

Piano di installazione schematico				
Edificio/Struttura				
	Indirizzo: Note:		N° d'ordine: Tipo di edificio: Forma del tetto: Dispositivo di ancoraggio:	
Cliente				
	Nome: Indirizzo:		Persona di contatto: Telefono:	
Installatore				
	Nome: Indirizzo:		Installatore capo: Telefono:	
Dispositivo di ancoraggio				
	Fabbricante: Identificazione del modello/tipo:			
Componente dell'edificio				
	Componente 1: Componente 2: Materiale dell'edificio:	per esempio soffitto di calcestruzzo per esempio colonna di calcestruzzo per esempio cemento armato	Minimo spessore: Minimo spessore: Qualità:	per esempio 250 mm per esempio 500 mm per esempio min. C25/30



Fissaggi/Chiavarde — Fabbricante

Dati dei fissaggi
☐ dati non richiesti se fissato attraverso

Diametro del foro: .....mm
Profondità del foro: .....mm
Coppia: ..... Nm

Tipo: .....
Materiale: .....
Distanza minima dal bordo (c): .....
Spaziatura assiale minima (s): .....
Spessore minimo del componente: .....
Forza di trazione ammissibile: .....
Forza di taglio ammissibile: .....

Situazione reale:
Distanza dal bordo Cx: ..... Cy: .....
Spaziatura assiale Sx: ..... Sy: .....

Note: .....

Metodo foratura: ☐ Martello ☐ Rotativo ☐ Chiave dinamometrica
☐ Pulitura del foro
Dispositivo di prova: ☐ Dispositivo di prova del fissaggio
Sistema d'urto ☐ Sì ☐ No ☐ Umido ☐ Secco ☐ Sì ☐ No

LISTA DI CONTROLLO
- ☐ Substrato come atteso (nessun dubbio sulla capacità)
- ☐ Installazione conforme alle istruzioni del fabbricante
- ☐ Fissaggi raccomandati utilizzati
- ☐ Tutti i fissaggi fotografati con numero di identificazione
- ☐ Fissaggi visibili
- ☐ Piano di installazione apposto sul sito
- ☐ Immobilizzazione delle viti mediante tecnica di fissaggio attraversante il foro
- ☐ Informazioni aggiuntive .....

Piano del pavimento del tetto:

Forza di estrazione richiesta (kN), coppia richiesta [Nm] ottenuta?

Punto di ancoraggio 1	Punto di ancoraggio 5.....	Punto di ancoraggio 9	Punto di ancoraggio 12.....
Punto di ancoraggio 2	Punto di ancoraggio 6.....	Punto di ancoraggio 10	
Punto di ancoraggio 3	Punto di ancoraggio 7.....	Punto di ancoraggio 11	
Punto di ancoraggio 4	Punto di ancoraggio 8.....	Punto di ancoraggio 12	

Fissaggi aggiuntivi:.....
Note da parte dell'installatore capo:.....

Data: Firma:

design of the system: if dimensioned drawings of the system with respect to the structure on which it is installed, stamped and signed by an authorized technician and showing the points of access, ascent route to the real system by means of individual anchor points, the position of the type C EASY SOLUTION system and any non-treadable areas are required;
certification of the system or the components that form it (certification of the system and not of each individual components adapted to the use in question);

- complete certification must be at the disposal of all users;
- the operator must be able to access this dossier showing the date on which the system was put into service, the successive uses and successive mandatory inspections and maintenance recorded by filling out the Intervention Registration Form
- user fitness must be checked. Users must have frequented dedicated training courses for category III fall arrest personal protective equipment.

Failure of the building owner, even partially, to fulfil the obligations described in this section, endangers the safety of other persons and voids the warranty supplied with the system. If the operator fails to provide proof that he is fit to use fall arrest protection devices, the building owner must forbid him to use the system itself.

User's responsibility 6.2

It is obligatory for persons who must work in a place where the EASY SOLUTION system is installed to be trained on how to use this type of system and to perform the following preliminary operations:

- ask the building owner for this Use and Maintenance Manual showing the date on which the system was put into service, the successive uses and successive mandatory inspections and maintenance recorded by filling out the "Intervention Inspection/Maintenance Registration Form";
- ask the building owner for the certificate of the system formed by the components described in the previous point and especially take note of the project, indicating the point of access;
- prove to the building owner that he is authorized to use the system and be equipped with the necessary PPE, kept in optimum conditions, for use of this system in accordance with any instructions given in the design documents. Should the operator fail to obtain all the items indicated in this point, he must refuse to use the system for any operation whatsoever.

Vertical clearance must also be calculated so as to avoid hitting or colliding with the ground or obstacles.

Vertical clearance can be assessed by means of the relation included the Assembly recommendations.

7. Use.

Arrival near access point 7.1

The first phase is as follows:

- reaching, equipped with the required PPE, the point of access, as indicated in the design documents attached to the certificate. The person responsible for the system must provide the user with the roof plan and certificate of the system along with the Intervention and Maintenance Registration forms;
- examination of the system's identification sign. This is installed near each access point and gives the following information: type of line, serial number, maximum number of persons who can use the lifeline simultaneously in each section, vertical clearance, date on which lifeline began service, instructions to the effect that 3rd category personal protective equipment (PPE) must be worn, the manufacturer's name, the dealer's name, the installer's name. This information must obviously correspond to the details already examined in the certificate.

Inspections 7.2

As soon as the user nears the point of access he must proceed, as far as possible, as described below:

- visually examine the conditions of the lifeline components; especially make sure that there is no sign of rust on the components and that the fixing devices are all present;
- make sure that the lead seal is affixed and that it has not been tampered with;
- check the cable tension by hand.

If in doubt, the user must have an inspection made by the enterprise that installed the system, by an inspection body or by a person from the maintenance service, experienced and authorized to perform this sort of work.

Direct access to the system 7.3

After having reached the point of access and before stepping onto the work area, the user must:

- if a lanyard with absorber is used, connect directly to the lifeline cable using the connector at the free end of the lanyard and connect the end with the absorber to the back fall arrest attaching point of the harness;
- if the retractable device is used, connect directly to the lifeline cable using the connector attached to the casing of the device and connect the free end of the device to the back fall arrest attaching point of the harness.

Access to system by ascending route 7.4

After having reached the point of access and before stepping onto the work area, the user must:

- climb up to the lifeline by means of the individual anchor points installed about 150/200 cm away from each other, using the double lanyard supplied. The user must always remain anchored to at least one anchor point, moving upwards by alternately anchoring and releasing himself until he reaches the lifeline.
- if a lanyard with absorber is used, he must connect directly to the lifeline cable using the connector at the free end of the lanyard and connect the end with the absorber to the back fall arrest attaching point of the harness;
- if the retractable device is used, the user must connect directly to the lifeline cable using the connector attached to the casing of the device and connect the free end of the device to the back fall arrest attaching point of the harness.

How to move along the lifeline 7.5

Upon reaching the lifeline, the user must:

- remain anchored to the lifeline by the lanyard, by one of the retractable systems listed above or by the guided type fall-arrest device; move cautiously along the system parallel to the lifeline cable, until reaching the required point;
- make sure that the PPE accompanies his movements; take care of any obstacles that could prevent a regular fall and create problems or damage the PPE itself.

How to pass intermediate brackets 7.6

If intermediate brackets are installed, remember (as imposed by the ergonomic principles given in Legislative Decree D.lgs 81/2008) that these must be passed by remaining always anchored to the lifeline. Proceed as follows:

- take hold of the connector while holding the lanyard in your hand;
- make a curving movement with the connector so as to pass the intermediate bracket without having to release the connector itself.

How to pass corner elements 7.7

If corner elements are installed, the lifeline could be interrupted. In this case, the corner element can only be passed by using a double lanyard in the following way:

- release one connector with the lanyard and re-connect it after the break in the lifeline;
- once you have attached the first connector, repeat the operation with the second one so that you are always anchored to the lifeline;
- after having re-connected the second snap ring, proceed along the lifeline until you reach your destination.

How to move near the edge (pendulum effect) 7.8

If the zone you need to reach is near the edge of the roof, with the risk of falling sideways and creating a pendulum effect, you need a double anchor, which can be obtained in the following way:

- make sure that there is an anchor point in the zone; it will usually be about 2 m from the edge. Visually check its condition;
- always remaining connected to the main lifeline, anchor the connector of a lanyard to this anchor point. Thanks to this simple operation, the triangulation created with the anchor system avoids the pendulum effect should you fall.

Operations required when work has terminated 7.9

When work on the roof has terminated, never leave any equipment or rubble on the roof, check to make sure that the EASY SOLUTION lifeline is in a perfect condition and fill out the required Registration Form.
If the EASY SOLUTION lifeline has been damaged or subjected to stress, immediately inform the person responsible for the system or the owner so that the lifeline installer can be notified, or inform **Genesi Italia** itself.

8. Limits to use and general recommendations.

- The device must not be used beyond its limits or for purposes differing from those for which it has been designed;
- rescue procedures must be drawn up so that emergency situations that may occur during work can be faced;
- take care when using PPE or any other safety device. You are advised to read the operating instructions of any other safety device used to prevent interference between devices and to perform all the preliminary inspections before using any other device;
- Do not use the device if:
  a – you encounter difficulties during use;
  b - it has already operated owing to a fall and has not been examined by a competent person who has certified its fitness for use;
- The device must be installed on a structure able to withstand the mechanical stress generated by a fall;
- Carefully read the instructions describing how to connect to the device;
- Always check vertical clearance so as to avoid colliding with the ground or any other obstacle;
- the device can be installed at any latitude and its use is not influenced by outdoor temperature. However, it is inadvisable to work on roofs in cold weather: The risk of falling increases if the surface is slippery owing to the presence of ice.
- CE inspection is performed by:

APAVE SUDEUROPE SAS (No. 0082)
CS60193
13322 MARSEILLE CEDEX 16 - France

- If the product is sold beyond the borders of Italy, the seller must provide instructions for use, maintenance, routine inspections and repairs in the language of the destination country;
- The anchor device must only be used to protect against the risk of falling and not as a means for lifting materials and objects;

- The anchor device has an internal fall indicator. each time before using, make sure that the part coloured red does not project from the central bar that houses the energy absorber.

- When the operator reaches the point of access, he must check the date of the last inspection as indicated on the obligatory idebntification notice (art. CA00) and on the "inspection/maintenance registration form". If the last inspection dates back more than 12 months, the device must not be used until it has been inspected by a competent person;
- A complete harness is the only acceptable body retaining device that can be used with this fall arrest system. The operator must always check to make sure that the product markings are legible before use.

9. Maintenance.

The EASY SOLUTION lifeline is entirely made of components in stainless steel, aluminium and comprises an energy absorber made of EPDM, materials that are highly weather resistant and ozone resistant.

However, the flexible anchor line is considered to be Personal Protective Equipment: as such, it must be inspected and serviced by competent persons at least once a year, in any case before being reused if it has not been used for a long period of time.

The following operations are required at least:

- visual and mechanical inspection of the anchor points: make sure that the devices are in a perfect condition. Check tightening torque values with a torque wrench;
- make sure that the lead seals are present and they have not been tampered with;
- make sure that line tension is correct and that the energy absorber is in a perfect condition. Normal cable tension is around 750 N. The test is performed with the purpose-made sensor art. SVTE equipped with hand-held computer art. PALM for the data readings;
- check that the fixed end brackets, the positionable corner element, any intermediate brackets and the cable are in perfect conditions (make sure that there is no permanent deformation or corrosion, assess the condition of the fastenings, make sure that the fall indicator has not operated and that none of the components is faulty).

The device must not be used if defects are discovered. Only after it has been repaired by trained, skilled personnel may the device be used again.

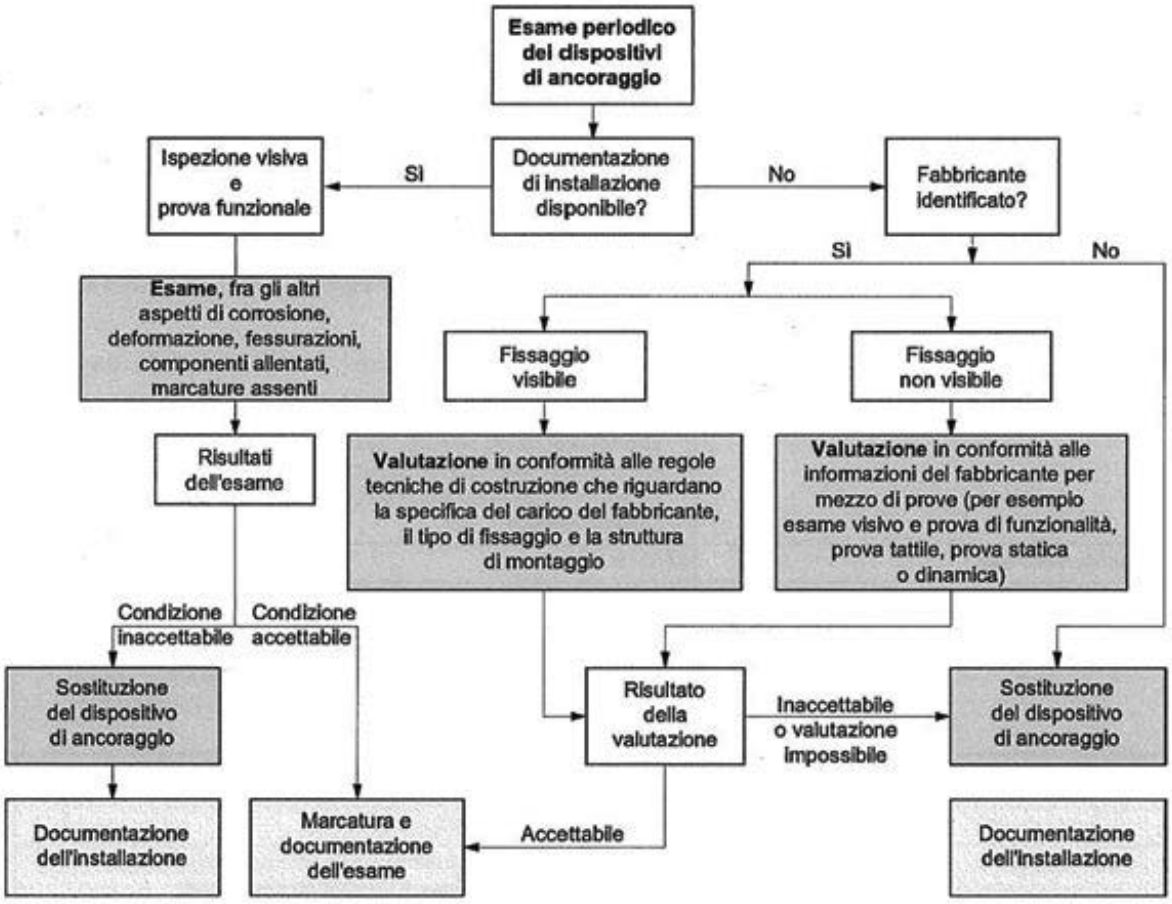
The PPE must be serviced after a fall or even when the device has been operated accidentally. Such servicing must be performed by persons who are familiar with the recommendations and instructions provided by the manufacturer and applicable to the components of the system. The operator must be able to identify and assess the entity of the damage and to implement the corrective action required. None of the line components need to be cleaned before, during or after use. The maximum duration of the system is 20 years and its life cycle runs from the date on which it is put into service.

It is obligatory to record annual maintenance/inspection, supplementary maintenance and uses of the device on the registration form provided here; this to assure future users that the system has been used correctly and periodically serviced.

10. Intervention - Inspection / Maintenance Registration Form

Intervention date	Reason: (Routine inspection/ use/supplementary maintenance)	Result of inspection / maintenance	Defects noted, repairs made and other pertinent information	Name and signature of competent person	Forecast date of next inspection/ maintenance

Routine inspection/assessment guide:



11. Warranties

Duration 11.1

All parts in stainless steel, aluminium and EDPM forming part of our EASY SOLUTION lifelines and our anchor points used to complete them are covered by a 10-year warranty running from the date on the delivery note.

Exclusions 11.2

The warranty will only be provided if:

- the cable for the EASY SOLUTION lifeline has been supplied by **Genesi Italia**;
- the price of the supplied merchandise has been fully paid;
- the product has been installed and used in compliance with the assembly and technical instructions supplied by **Genesi Italia**;
- The warranty will not be provided if:
- our products are made of galvanized or zinc-plated steel;
- our safety products include parts or accessories of out-sourced origin. In this case, the warranty provided will be that of the supplier of such parts.
- The warranty becomes void when defects are caused by:
- interventions or modifications to the original system performed without written authorization from the manufacturer/dealer;
- abnormal use differing from the purpose for which the equipment is intended;
- defective installation that fails to conform to the drawings or has not been performed in a workmanlike manner;
- failure of the customer to notify special conditions (pollution, temperature, number of users, etc.) of use of the equipment;
- breakage of the supporting surface that houses the anchor device;
- by parts produced by the purchaser or obtained from sources other than **Genesi Italia** added to our systems. All lifelines must be obtained from Genesi or from a manufacturer approved by us, on the basis of our projects;
- by unforeseen circumstances(force majeure) or by any event beyond the seller's control, such as warfare, lightning, etc.

Limitations 11.3

In all cases, our warranty merely covers the replacement or repair of parts or equipment formally recognized by our technical service as being defective.
If the repairs are entrusted to third parties, they may only be performed after acceptance by **Genesi Italia** of the cost estimate for the repairs themselves.
Equipment may only be returned after authorization from **Genesi Italia**.
The warranty only applies to returned items and does not cover the cost of removing or re-installating the equipment from/into the system in which it is built.
Repairs, replacements or modifications to parts or equipment during the warranty period may extend the warranty itself

Liability 11.4

Genesi Italia shall be liable, under ordinary-law terms, for material damage caused by its equipment or by its personnel.
Repairs of material damage attributable to the seller are expressly limited to a sum that will not exceed the value of the equipment involved, subject of the order.

The seller and the customer expressly agree to reciprocally refrain from requesting compensation for indirect and non-material damages of any nature, such as loss of business, loss of earnings, delay expenses, reminder fees, removal and re-installation of equipment, loss of future contracts, etc.

12. References.

Regulatory framework 12.1

Technical standards 12.1.1

EN 341:1992
Personal protective equipment (PPE) against falls from a height – Descender devices
(implementation of European standard EN 341:1992)

EN 354:2002
PPE against falls from heights – Lanyards

EN 355:2002
PPE against falls from heights – Energy absorbers

EN 360:2002:
PPE against falls from heights – Retractable fall arresters

EN 361:2002
PPE against falls from heights – Full body harnesses

EN 362:2004
PPE against falls from heights – Connectors

EN 363:2008
PPE against falls from heights – Individual fall arrest systems

EN 364:1992
PPE against falls from heights – Test methods

EN 365:2004
PPE against falls from heights – General requirements for instructions for use, marking, inspection periods, repairs, marking and packaging

EN 795:2012
Personal fall protection – Anchor devices

CEN/TS16415:2013
Personal protective equipment against falls from heights – Anchor devices – Recommendations for anchor devices for use by more than one person simultaneously

National laws 12.1.2

Legislative Decree D.Lgs 81/2008 and successive amendments and integrations
Consolidation Act concerning Safety

Websites 12.2

www.Genesiitalia.it
Dealer's official website

www.uni.com
Website of the Italian Standards Organization (UNI)

13. List of retractable devices compatible with the system.

Description of test with 3m line

Protocol No.: 02/2014 - 001

Title: Behaviour of different retractable devices in conjunction with the “Easy Solution” flexible lifeline

Date: 5 February 2014

Project manager: CE

Description of test

Purpose: assess the fitness for use of different retractable devices with automatic lock in conjunction with the type C Easy Solution anchor device.

The retractable devices listed below were positioned in the centre of a 3 m section of the Easy Solution anchor device with a 100 kg weight attached to the retractable device by means of a connector. 600 mm fall distance was assigned to the weight (with fall factor 1).

Device	Image	Retailer	Manufacturer	Cable Material	Cable Diam.	Cable Length	Arrest mechanism
SOIT080		Genesi Italia	Protekt	Galvanised steel	4 Mm	6 M	Cam device
SOIT081		Genesi Italia	Protekt	Galvanised steel	4 Mm	10 M	Cam device
SOIT082		Genesi Italia	Protekt	Galvanised steel	4 Mm	15 M	Cam device
SOIT012		Genesi Italia	Protekt	Galvanised steel	4 Mm	6 M	Cam device
SOIT017		Genesi Italia	Protekt	Galvanised steel	4 Mm	20 M	Cam device
SOIT018		Genesi Italia	Protekt	Galvanised steel	4 Mm	25 M	Cam device
SOIT036		Genesi Italia	Protekt	Polyamide	strap 47 mm	2.5 m	Cam device

Device	Image	Retailer	Manufacturer	Cable Material	Cable Diam.	Cable Length	Arrest mechanism
SOIT048		Genesi Italia	Protekt	Fabric	6 mm	6 m	Cam device
SOIT202		Genesi Italia	Ikar	Fabric	strap	7 m	Cam device
SOIT203		Genesi Italia	Ikar	Galvanised steel	4.5 mm	12 m	Cam device
SOIT205		Genesi Italia	Ikar	Fabric	strap	2 m	Cam device
SOIT205					strap	2 m	Cam device
SOIT803		Genesi Italia	Kratos	Galvanised steel	4.5 mm	12 m	Cam device
SOIT417		Genesi Italia	Checkmate	Galvanised steel	4.5 mm	40 m	Cam device
PK20		Tractel	Tractel	Galvanised steel	4 mm	20 m	Cam device
FALCON		Miller	Miller	Galvanised steel	4 mm	10 m	Cam device

Remarks

The test results are given below.

Device	Retailer	Manufacturer	No. Rebounds	Elongation of rope before arrest	Notes
SOIT080	Genesi Italia	Protekt	1	67 Cm	
SOIT081	Genesi Italia	Protekt	-	-	
SOIT082	Genesi Italia	Protekt	-	-	
SOIT012	Genesi Italia	Protekt	1	29 Cm	
SOIT017	Genesi Italia	Protekt	-	-	
SOIT018	Genesi Italia	Protekt	1	75 Cm	
SOIT036	Genesi Italia	Protekt	1	16 Cm	7 Cm energy absorber elongation
SOIT048	Genesi Italia	Protekt	1	26 Cm	
SOIT202	Genesi Italia	Ikar	1	48 Cm	
SOIT203	Genesi Italia	Ikar	1	45 Cm	
SOIT205	Genesi Italia	Ikar	1	53 Cm	
			1	51 Cm	
SOIT803	Genesi Italia	Kratos	1	40 cm	
SOIT417	Genesi Italia	Checkmate	1	79 cm	
PK20	Tractel	Tractel	1	55 cm	a
FALCON	Miller	Miller	1	75 cm	a

The weight was held.
The number of rebounds was always less than 2 (thus, there was no springback that would have led to incompatibility between devices used in conjunction with each other)
Fall was always arrested within 90 cm.

Conclusion

The listed devices can be used with the type C “Easy Solution” anchor device.

14. List of retractable devices compatible with the system.

Description of test with 15 m line

Protocol No.: 02/2014 - 002

Title: Behaviour of different retractable devices in conjunction with the “Easy Solution” flexible lifeline

Date: 8 February 2014

Project manager: CE

Description of test

Purpose: assess the fitness for use of different retractable devices with automatic lock in conjunction with the type C Easy Solution anchor device.

The retractable devices listed below were positioned in the centre of a 15 m section of the Easy Solution anchor device with a 100 kg weight attached to the retractable device by means of a connector. 600 mm fall distance was assigned to the weight (with fall factor 1).

Device	Image	Retailer	Manufacturer	Cable Material	Cable Diam.	Cable Length	Arrest mechanism
SOIT080		Genesi Italia	Protekt	Galvanised steel	4 Mm	6 M	Cam device
SOIT081		Genesi Italia	Protekt	Galvanised steel	4 Mm	10 M	Cam device
SOIT082		Genesi Italia	Protekt	Galvanised steel	4 Mm	15 M	Cam device
SOIT012		Genesi Italia	Protekt	Galvanised steel	4 Mm	6 M	Cam device
SOIT017		Genesi Italia	Protekt	Galvanised steel	4 Mm	20 M	Cam device
SOIT018		Genesi Italia	Protekt	Galvanised steel	4 Mm	25 M	Cam device
SOIT036		Genesi Italia	Protekt	Polyamide	Strap 47 Mm	2.5 M	Cam device

Device	Image	Retailer	Manufacturer	Cable Material	Cable Diam.	Cable Length	Arrest mechanism
SOIT048		Genesi Italia	Protekt	Fabric	6 mm	6 m	cam device
SOIT202		Genesi Italia	Ikar	Fabric	strap	7 m	Cam device
SOIT203		Genesi Italia	Ikar	Galvanised steel	4.5 mm	12 m	Cam device
SOIT205		Genesi Italia	Ikar	Fabric	strap	2 m	Cam device
SOIT205					strap	2 m	Cam device
SOIT803		Genesi Italia	Kratos	Galvanised steel	4.5 mm	12 m	Cam device
SOIT417		Genesi Italia	Checkmate	Galvanised steel	4.5 mm	40 m	Cam device
PK20		Tractel	Tractel	Galvanised steel	4 mm	20 m	Cam device
FALCON		Miller	Miller	Galvanised steel	4 mm	10 m	Cam device

Remarks

The test results are given below.

Device	Retailer	Manufacturer	No. Rebounds	Elongation of rope before arrest	Notes
SOIT080	Genesi Italia	Protekt	1	82 Cm	
SOIT081	Genesi Italia	Protekt	-	-	
SOIT082	Genesi Italia	Protekt	-	-	
SOIT012	Genesi Italia	Protekt	1	50 Cm	
SOIT017	Genesi Italia	Protekt	-	-	
SOIT018	Genesi Italia	Protekt	1	64 Cm	
SOIT036	Genesi Italia	Protekt	1	16 Cm	7 Cm energy absorber elongation
SOIT048	Genesi Italia	Protekt	1	8 Cm	
SOIT202	Genesi Italia	Protekt	1	50 Cm	
SOIT203	Genesi Italia	Ikar	1	46 cm	
SOIT205	Genesi Italia	Ikar	1	50 cm	
			1	49 cm	
SOIT803	Genesi Italia	Kratos	1	35 cm	
SOIT417	Genesi Italia	Checkmate	1	84 cm	
PK20	Tractel	Tractel	1	57 cm	
FALCON	Miller	Miller	1	79 cm	

The weight was held.
The number of rebounds was always less than 2 (thus, there was no springback that would have led to incompatibility between devices used in conjunction with each other)
Fall was always arrested within 90 cm.

Conclusion

The listed devices can be used with the type C “Easy Solution” anchor device.

somafil
Via Donizetti 109/111
Brembate di sopra (BG)
P.IVA 03286280163

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GENESI
ITALIA

Genesi Italia

Via Donizetti, 109/111
24030 Brembate di Sopra
Bergamo - Italy

T. +39 035 0332049
F. +39 035 6220438
info@genesibesafe.com

genesibesafe.com

Genesi Italia, Be **Safe**