



## Product features and benefits



### 1. General features of the EVOLUTION lifeline:

EVOLUTION is a horizontal lifeline anchored permanently to the structure.

#### Overall safety:

EVOLUTION has been put through tests according to the criteria of Europe, North American, Canadian and Australian standards by a notified and independent organization. This guarantees you get optimum safety verified by a competent and independent authority. It makes EVOLUTION products suitable for installation in almost any country.

#### The peace of mind of a compliant installation:

EVOLUTION is installed only by professional installers who have been approved and trained specifically for lifeline installation work. They guarantee you with the professional installation of a reliable product conforming to highest safety standards.

#### Greater confidence and performance:

Thanks to a suitably-dimensioned system compliant with standards, and installed by professionals, EVOLUTION procures a real feeling of safety, boosting the confidence of users. This enables them to concentrate on getting the job done, in total confidence.

#### Deformability:

Its design includes deformability technology designed to absorb energy in case of fall. Energy is absorbed by the components of the line in order to protect the structure on which it is installed.

#### Compatibility with existing systems:

The EVOLUTION shuttle is compatible with the existing ARIANA and SAYFGLIDA lifelines. This makes it possible to maintain the existing installations and complete them in case of extension.

#### Multiple installation: Floor, wall, roof, ridge, terrace, overhead with respect to users:

The small number of components avoids making assembly errors. EVOLUTION lifelines can be installed in any configuration thus meeting the demands of any work and installation situations.

#### Continuous safety:

The EVOLUTION lifeline can be used equally well on straight lines as on curves and for obstacle avoidance. The innovative concept of the shuttle and the intermediate brackets enables users to move freely along the lifeline without needing to detach at any time.





### Reduced number of components and maximum range:

EVOLUTION comprises standard components that can be used in many different configurations. In addition, most of the existing structures offer relay points every 10 to 15 m. On this basis and also with respect to the number of users, the maximum center distance allowed by EVOLUTION can be increased or decreased according to various parameters (structure loading, lifeline pretension, number of people on the lifeline, authorized cable sagging, etc).

### Multi-user access:

Generally speaking, it is frequent for two or three people to work on a lifeline at the same time. With EVOLUTION, the number of people may even be increased according to various parameters (load on structure, lifeline pretension, center distance, etc).

### Widened working area and improved working performance:

It is possible to pass intermediate relay points automatically, even at a distance. This enables the user to concentrate on the work in hand without having to think about changing the shuttle position on the line.

### Durability:

The EVOLUTION lifeline components are based on stainless steel or on other materials having excellent resistance to corrosion.

### Reduced maintenance:

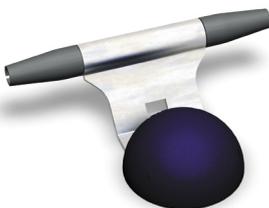
EVOLUTION uses materials not requiring any specific maintenance. Only regulatory inspection is necessary to monitor and check the optimum performance of the system.

### After-sales service and training:

SALA and its installers offer you services for the inspection of your lifelines. Through its training centers, SALA offers you the opportunity to have your personnel trained to wear and use personal protection equipment, and to use the lifeline properly.

### Esthetics:

The EVOLUTION lifeline is designed to blend in completely with the modern architectural landscape. With compact and discrete components in consistent color schemes, EVOLUTION is esthetic but continues to be discreet.





## 2 - Technical properties

### Optimized forces and cable deflection in case of fall:

EVOLUTION incorporates energy absorption elements to allow the use of different types of cables having different mechanical properties (strength and elongation) thus optimizing forces on the cable and its deflection.

By reducing the forces, it is possible to preserve the structure on which the lifeline is installed and reduce even more the efforts bearing on personnel in case of fall.

Reducing cable deflection will avoid collision with any obstacles in the path of falling personnel.

### Use of swaged line terminations:

The line ends are swaged. This guarantees the use of professional machines and avoids any risks of incorrect assembly or inadvertent disassembly.

### 2.1. The EVOLUTION shuttle:



#### Use at both side of the line:

Because of the shape and innovative design of the EVOLUTION shuttle, it can be used at both side of the line without any need to detach. It passes the intermediate attaching points automatically, even at a distance, without any particular of additional action being needed.

#### Spherical shape:

Its shape makes it easy to handle and gives it the flexibility needed to easily pass the intermediate attaching points. The polymer surface materials improve grip.

#### Compactness:

Using tough and long-lasting materials (aluminum and stainless steel), the shuttle is light and compact for the performance it offers.

#### Maneuverable and easily handled:

Its secure opening mechanism allows one-handed opening of the device and its free-rotating handle allows it to slide easily over the cable.

#### Secure opening and closing:

A double action is necessary to open the shuttle, whereas closing is by a simple click, which automatically locks the shuttle.

#### Connection flexibility and compatibility:

The wide opening of the shuttle handle allows it to be used with most of the karabiners on the market (compliant fall-arrest connections) making it particularly flexible in use.





## 2.2. EVOLUTION energy absorbers:

### L.E.A.P. "Linear Energy Absorption Product" technology:

With this technology, the line is able to offer linear energy absorption in case of fall. No matter how many people on the line fall (within the authorized limit) the forces will not exceed the absorption threshold set on the absorber.

There is another absorber version offering an additional energy absorption capability when the line is used over long distances or when a great deal of energy has to be absorbed.

### Direct tension reading:

A graduated rule indicates directly the line tension value.

### Tension adjustment:

The line tension adjusting system in the front part of the absorber is set to optimize the line tension and sag.

### Fall indicator:

In case of fall, the EVOLUTION absorber indicates that there has been a fall on the line by liberating all or part of its absorption capacity.

### Line termination:

The absorber is used as a terminal part on the lifeline. The cabling system is particularly unique, passing entirely through the absorber before being swaged and cut, then incorporated into the absorber.

### No more cutting errors:

The cable is only cut once it has been swaged on the line, avoiding any errors in length measurement.





## 2.3. Intermediate bracket:

### Monobloc and mono-attachment:

The EVOLUTION intermediate bracket, consist of a single part of stainless steel fixed by a single attachment.

### Mechanical protection and esthetics:

The intermediate brackets include covers having three different functions:

- Mechanical protection of the hardware.
- Protection from any "inadvertent" action on the line.
- Esthetic integration of the line into its environment.

### Patented deformable technology:

The EVOLUTION intermediate brackets are able to deform under the effort of a fall, absorbing part of the energy while maintaining excellent mechanical strength.

### Flexible cable guide:

The intermediate brackets cable guides are of high strength polymer, whilst maintaining some flexibility.

This ensures the correct orientation of the intermediate bracket guide with respect to the cable for open curves (<15°).

### Integration on post:

There is a specific intermediate bracket used for posts, ensuring total integration into the SALA range of posts, in order to form a "single" element.

### Over head application and automatic retractable fall arresters:

There is also a reinforced intermediate bracket for line applications situated above the workers. The reinforcement guarantees better intermediate bracket strength with respect to natural forces that are greater for these applications. This intermediate bracket also allows the use of a retractable fall arrester on the EVOLUTION lifeline.





## 2.4. EVOLUTION curves:

### Smooth and flexible from 0° to 90°:

EVOLUTION curves can be used to form any angle between 0° and 45° or between 45° and 90° depending on the curve thanks to the highly flexible yet strong polymer cable guide.

### Deformable technology:

Based on the same technology as the intermediate brackets, they are capable of absorbing energy while deforming under the effect of a fall.

### Integration on post and use in overhead application with retractable fall arrester:

In the same way as the intermediate brackets, curves can be incorporated seamlessly into the SALA range of posts so as to form a «whole» and permit the use of automatic fall arresters.

### 1 or 2 anchorage points:

For curves between 0° and 45°, all it takes is one anchorage point and only 2 anchorage points for curves of between 45° and 90°. This small number of anchorage points makes for flexible, easy and fast installation.



## 2.5. Cables:

EVOLUTION can be used with SALA cables having different mechanical properties (resistance to breakage, elongation under effort) with the same diameter (8mm).

### Optimization of force and sag :

The cable will be chosen to reduce the forces generated in the event of a fall, or to reduce the elongation of the cable in such a case, using the calculation software.





## 2.6. Posts:

### Force limiting tilting post:

The tilting of the post under a given level of tension will decrease the pulling away forces at the base.

### Absorbing Post (L.E.A.P. system):

The EVOLUTION absorbing posts also incorporate the L.E.A.P technology so as to absorb energy in case of fall and be suitable for installation on any type of structure. These posts also allow for a decrease in the leverage forces by tilting under a given force.

### Separate standard base:

It only requires two post bases to ensure attachment to most standard steel pan roofs. With bases delivered separately from the post, it facilitates transport, storage and movement around the site.

### “General-purpose” base:

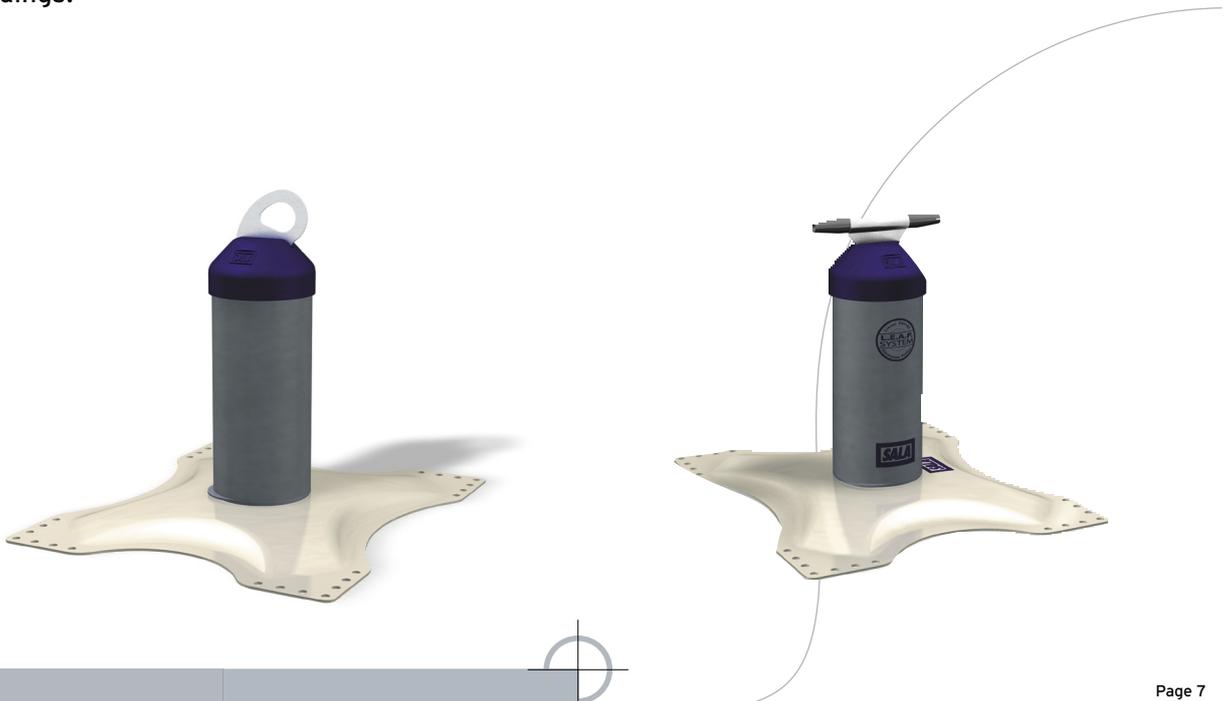
The same bases can be used on a trapezium steel pan roof as on a rolled pan roof; only the attachments differ.

### Easier installation:

During installation, the manipulation of the bases on their own is simpler, as the posts will be simply screwed into the bases afterwards.

### Architectural integration:

The post and base have shapes and colors designed to match perfectly modern architectural buildings.





## 2.7. Calculation software:

### Calculation of forces and sag:

The EVOLUTION calculation software is used for calculating the forces and sagging of a line at all points along the line.

### Forces in the curves:

The calculation software is also capable of determining forces at the curves, this is essential to know because they are often greater than at the ends.

### Calculation with integration of absorbing posts:

The EVOLUTION calculation software takes into consideration the SALA absorbing and tilting posts in the calculation of forces and sag.

### Construction:

The software can be used for constructing every type of line (straight lines, curves, long lengths).

### Simplicity and speed:

Lines can be constructed and simulated quickly and easily using a "fast entry" screen, even for complex lines, saving on design time.

### Project and database recording:

Any simulations can be saved as a project and assigned to a customer.

### Printout of design data and technical file:

The software can be used for generating a complete technical file related to a specific lifeline with design data, the list of parts to be used, and the associated technical data sheets.

### Positioning and optimization:

The design software can also be used for positioning the lifeline in the real environment so as to check the compatibility of the existing clearance.

### Measurement and language compatibility:

The EVOLUTION software makes its calculations in metric and imperial sizes and is translated into five languages: French, English, Spanish, German and Italian.

### Protection, administration:

The software is protected by secure access and the various access levels make it possible to limit access according to the requirements of the administrator.

