

Quick Planning Guide

How to correctly position your fall arrest system

Planning Basics

Normally, anchorage points are arranged around the fall danger zone. However, a lifeline system allows the user to get nearer to the edge as it provides uninterrupted protection (please refer to Example 1).

Generally, the most dangerous spots are always the outer corners of the fall danger zone. This is where a fall results in the strongest swinging motion because the distance from the anchorage point to the corner is greater than the shortest stretch to the edge. The distance from the anchorage point to the outermost corners should, therefore, never exceed 5 meters - assuming that the potential fall distance is at least 8 meters. If it is less than this, we recommend observing a maximum span of around 2.50 meters to the each corner.

In straight sections, the length of the lanyard is what determines how far the anchorage points should be positioned from the edge. The lanyard can be accordingly adjusted and shortened to the required length. This means that the anchorage points do not necessarily always have to be positioned the same distance from the edge of the roof/precipitous edge (Example 2).

The first thing to do when planning a fall arrest system is, therefore, to ensure that the dangerous corners are equipped with suitable anchorage devices. Each of these corner areas is secured using a single anchorage point. The remaining stretch is then divided into sections of max. 7.5 meters.

Areas with a relatively small fall distance also pose a danger because anyone falling over the edge hits the ground fast. Example:

A person who is 1.80 meters tall falls over an edge attached to 2 meters of loose or suspended rope. The lanyard fall absorber stretches 1 meter - with the complete fall arrest system stretching yet another.

We are now talking about a total possible fall distance of 5.80 meters!

To avoid the risk of hitting the ground in cases where the fall distance is very short, a fall retention system needs to be installed where the distance to the ground is less than 6 meters. This implies installing the safety system parallel to the edge (Examples 3+4).

Easiest to secure are round (roof) surfaces. Normally, only one central anchorage point is required.

What must you be aware of?

The fall danger zone is defined as being 2 meters or less from the edge. The edge may be the edge of the roof, along the sides of a domed rooflight, a smoke and heat extraction system or strip lighting.



Priority: collective protection!

The lawmakers and employers' liability insurance associations have decreed that fall arrest systems should provide collective protection wherever possible, e.g. through the use of guard rails. However, in practice this often proves extremely difficult to realize - a good example being when the roof parapet needs to be worked on. In such cases, individual fall arrest systems using lifelines and anchorage points often provide a much better solution.

Lifeline or anchorage point?

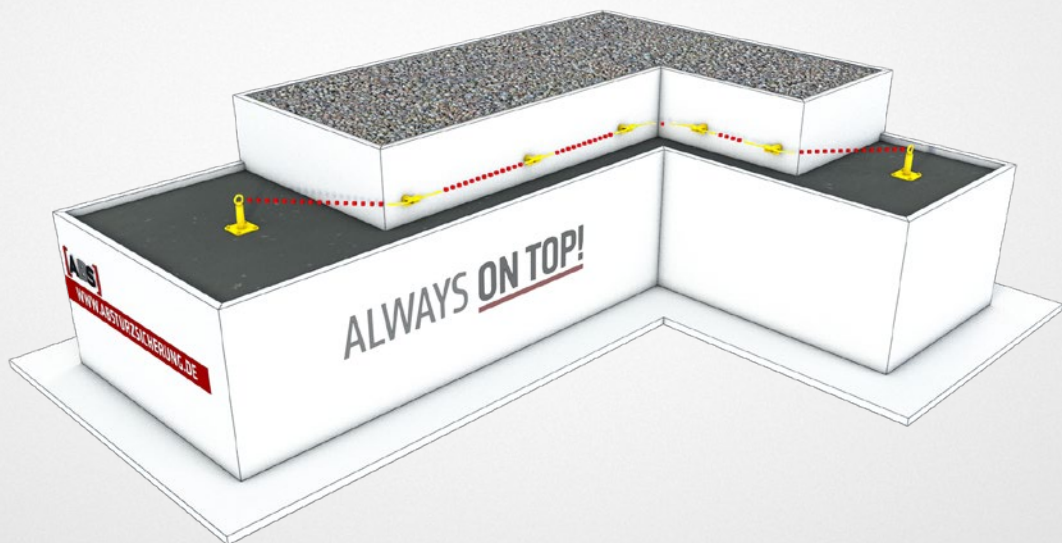
The decision whether to opt for a lifeline or an anchorage point system usually depends on the application and how often it is likely to be used: If it is rarely necessary to access the roof, single anchorage points often suffice. On the other hand, if regular roof access is required - or the roof surface is slippery (e.g. metal or foil rooves with a pitch of $\geq 4-5^\circ$), a lifeline is often the most sensible - or even an imperative - solution.



Example 1 - Advantage of a ABS Safety lifeline system

The lifeline system runs along the edge of the building facade - with safe access via an anchorage point installed on the roof surface.

Alternatively, the lifeline system can be run further along the building facade to the secure zone.



Example 2 - Anchorage points should be positioned in the high-danger corner areas

4 anchorage points secure the corners - reducing the swing in the case of a fall.

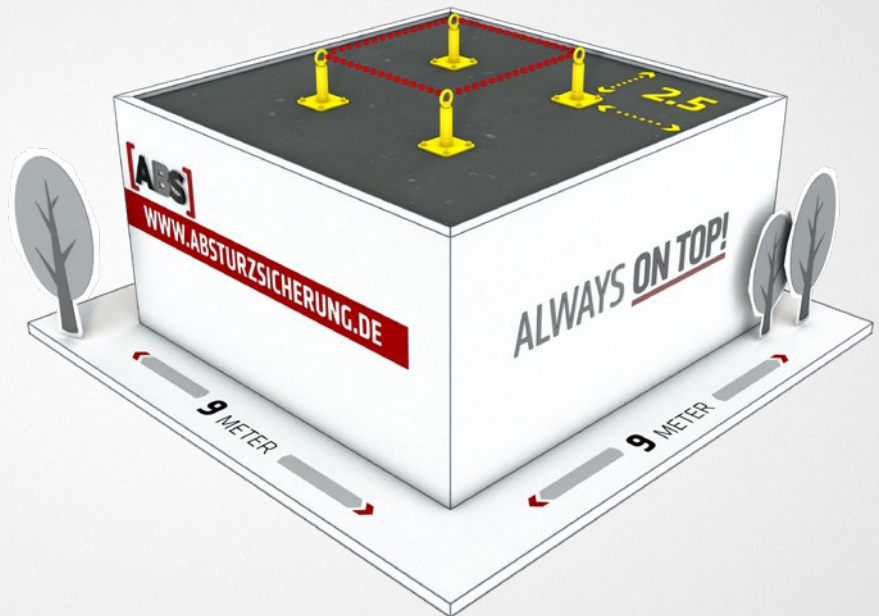
The central area is secured by a line of anchorage points installed parallel to the edge.



Example 3 - Flat roof 4 meters up - optimally secured using a lifeline system

In this example, the lifeline system is installed as a retention system. It is not merely intended to arrest possible falls but to prevent them from happening in the first place. A correctly adjusted lanyard prevents the user from accidentally stepping over the edge.

Our ABS Safety lifeline systems offer you a broad selection of temporary and permanent solutions.



Example 4 - Building height 10 meters - central anchorage point serving as a fall arrest system



In the illustrated example, a single ABS-Lock anchorage point is located 4.5 meters from the edge of the roof.

A user standing at one of the corners will swing a maximum of 1.86 meters if he/she falls. Even when allowing for different body sizes and how much the energy absorber stretches in the case of a fall, the remaining distance to the ground is more than adequate, i.e. the free fall distance is sufficient to prevent an impact.

