

What must you be aware of?

The area where there is an acute danger of falling is defined as being 2 meters or less from the edge. The edge may be the edge of the roof but could also be a domed rooflight, a smoke and heat extraction system or trip lighting.

Cabling system or anchorage points?

The decision whether to go for an anchorage point or cabling system usually depends on the respective usage:

If one rarely goes on the roof surface which needs to be secured then single anchorage points often suffice.

If one often has to go on the roof surface or if it is slippery (e.g. metal or foil rooves with an inclination of 4-5° or more) then a cabling system is often a sensible - or even essential - solution.

Planning Basics

Anchorage points are arranged around the fall danger zone. Cabling systems can be used to get nearer to the edge. This is due to their permanent nature (please refer to Example 1).

The basic rule is that the most dangerous spots are always the outer corners because this is where free fall is most felt (the length of the diagonal to the corner is greater than the straight stretch to the edge). This means that at the corners the distance from the anchorage point to the edge should never exceed 5 meters. In straight sections the only thing which determines the distance of the anchorage points from the edge is the length of the lanyard. This can be adjusted and shortened to required length. This means that the anchorage points do not necessarily always have to be at the same distance from the edge of the roof/precipitous edge (please refer to Example 2).

This is why one first has to plan how to secure the dangerous corner areas. Each of these spots is secured using one anchorage point. The remaining stretch is divided into sections of max. 7.5 meters.

Also dangerous are areas where the fall distance is fairly small because anyone falling over the edge hits the ground fast. Here is an example:

A person who is 1.80 meters tall falls over an edge attached to 2 meters of loose or suspended rope. This results in the lanyard fall absorber being stretched 1 meter with the complete fall arrest system being stretched yet another.

As a result the total possible fall distance has already reached 5.80 meters. It is vitally important to take this into account!

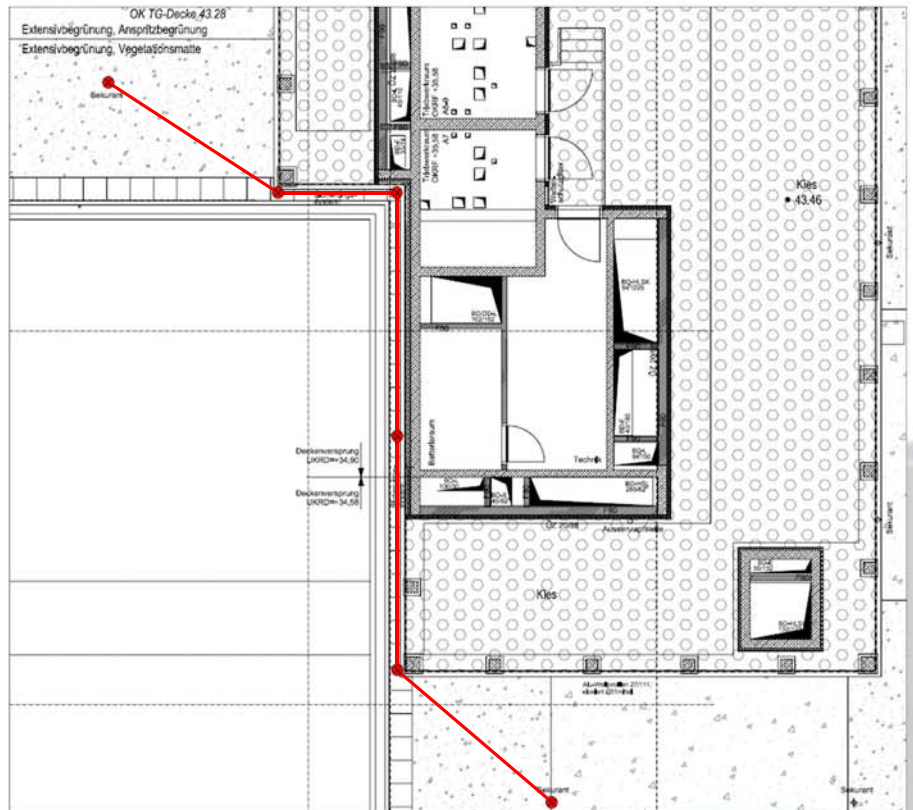
This is why fall arrest systems with a fall distance less than 6 meters are always designed as retention systems. That means that safety is achieved by setting up the system parallel to the edge (please refer to Examples 3+4).

Easiest to plan are round roof surfaces where one central point suffices.

Example 1

Cabling system along the edge of the building frontage with safe access via. an anchorage point on the roof surface.

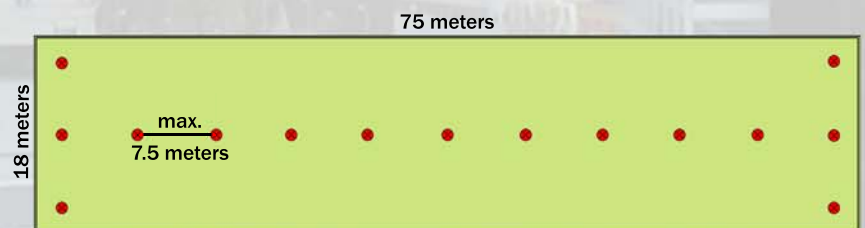
Alternatively, the cable can be run further along the building frontage to the secure zone.



Example 2

Anchorage points secure the corners and reduce the fall distance in the case of a fall.

The straight area is secured by a centrally-located line of anchorage points.

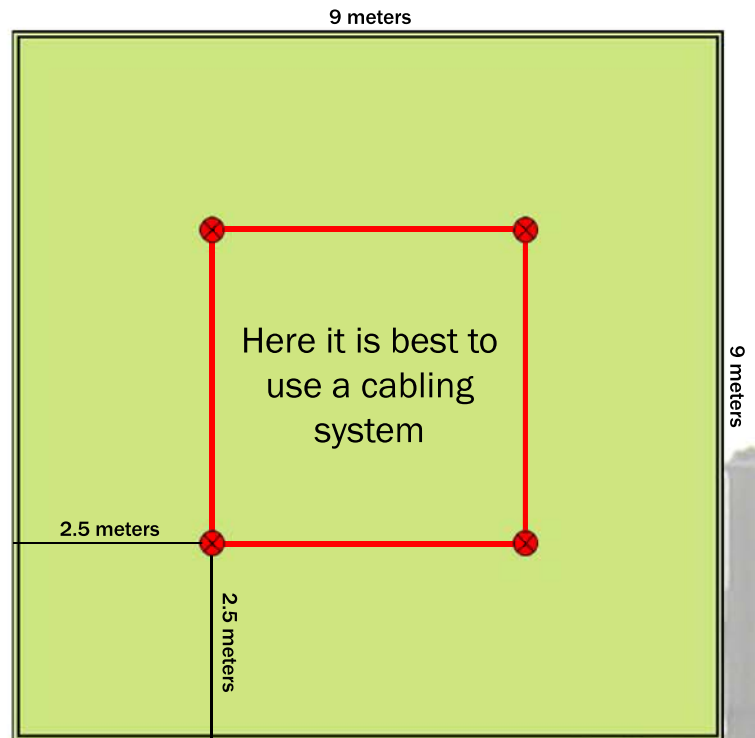


Example 3

Building height = 4 meters

In this case mounting a cabling system is the best solution. The cable prevents falls. This is described as a fall retention system.

It is possible to use both temporary and permanent cabling systems.



Example 4

The same building as above but the building height = 10 meters

The distance to the edge of the roof is 4.5 meters. If a fall occurs at the corner the maximum fall distance amounts to 1.86 meters. Even when the length of the body and the stretched lanyard fall absorber are added to this there is still enough room left to catch the fall.

