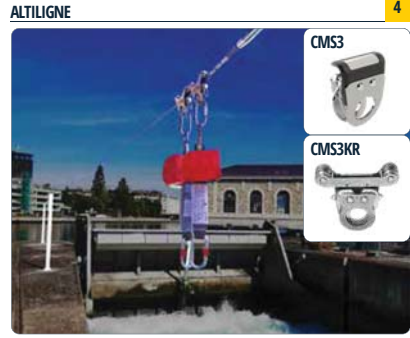


# Fall arrest individual protection

## Permanent systems

Cable systems

### Horizontal fall protection

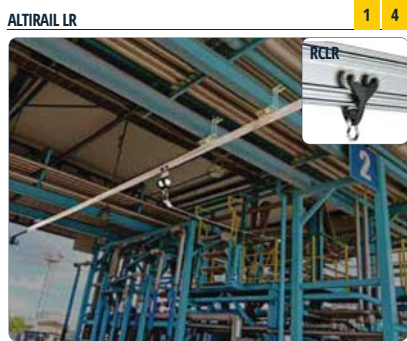
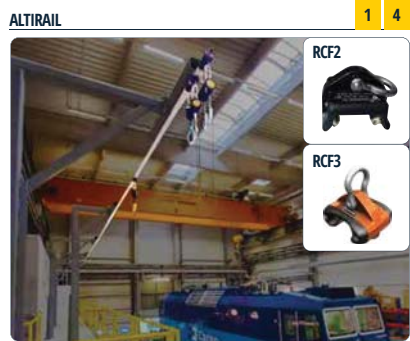


### Vertical fall protection

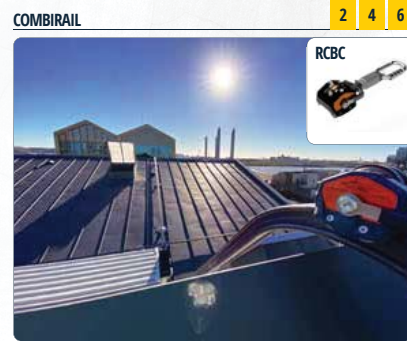


Rail systems

### Horizontal fall protection



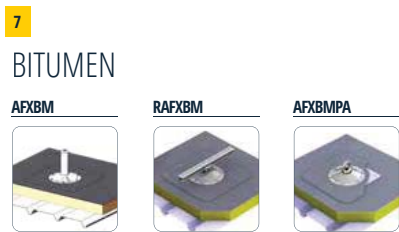
### Inclined fall protection



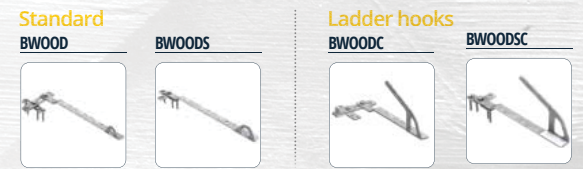
### Vertical fall protection



### Flexible coatings



### Tiled roofing



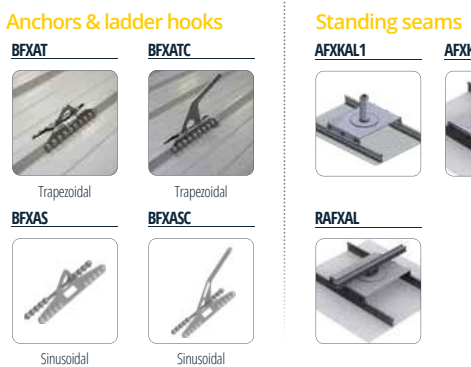
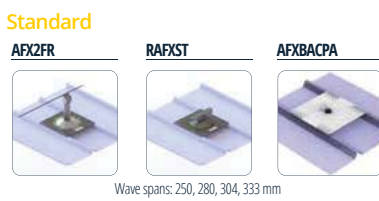
### Metallic sheatings



### Structures



### ALUMINIUM



### FRAMEWORK



### ZINC & COPPER



### CONCRETE



Supports & anchor points




# Accessories


Accessories

Fixations


**Structure**

WATERPROOFING

**SLEEVE**  
  
**FALU1** Aluminium  
**FALUPVC** PVC  
**KEFTUILES** Tiles


**COLLx**  
  
**COLL3** Flange  
**COLL6** plastic  
metal


**CONNECTOR**

**RRO**  
  
Entry & Exit  
bracket for  
runner

**Rail systems**

SWITCHES

**RAIGxD**  
  
Manual  
**RAIG3D** and **RAIG3DM** 3 directions  
**RAIG4D** and **RAIG4DM** 4 directions  
Motorized version: remote control included

**RAIGxDM**  
  
Motorized

**Flexible coatings**

PVC & BITUMEN

**KVBSEx**  
  
Ribs & blocks  
Hollow core slab  
Steel deck  
Isolation ≤ 330 mm

**KVRBAC**  
  
Reinforcement kit

**KV4FIXx**  
  
Perforated steel deck  
Isolation ≤ 330 mm

**ANCRAFX**  
  
Concrete slab  
Floor precast wideslab

**Metallic sheatings**

STEEL

**KVBAC**  
  
Standard  
steel deck

**KV1A**  
  
Folded steel section

**KV1M**  
  
IPN  
or UPN 80

ALUMINIUM

**KVBACALUS**  
  
Sinusoidal

**KVBACALU**  
  
Trapezoidal

ZINC

**KVZN**  
  
Wooden sheating

**Structure**

CONCRETE

**ANCRM12**  
  
Framework

**FIBER-CEMENT**


**KVFC**  
  
Framework

**TILES**


  
Wooden rafters

**Framework**


**KCxP**

  
**Double clipping**  
**KC1P** 80 > 150 mm  
**KC2P** 150 > 250 mm  
**KC3P** 235 > 330 mm


**KCx**

  
**Simple clipping**  
**KC1** 80 > 150 mm  
**KC2** 150 > 250 mm  
**KC3** 235 > 330 mm

**KBxP**

  
**Double clamping**  
**KB1P** 80 > 150 mm  
**KB2P** 150 > 250 mm  
**KB3P** 235 > 330 mm

**KBx**

  
**Simple clamping**  
**KB1** 80 > 150 mm  
**KB2** 150 > 250 mm  
**KB3** 235 > 330 mm

# Normative reminder

**EN 795**

**Anchor devices**

**EN 795**

Defines the requirements and test methods, the user manual and the marking of the anchor devices dedicated exclusively to be used with personal protective equipment against falls from a height.

**Recommendations for anchor devices for use by more than one person simultaneously**

**CEN TS 16415 : 2013**

This technical specification sets out recommendations for requirements, for anchor devices intended for use by more than one user simultaneously.

**EN 353-2**

**Guided type fall arresters including a flexible anchor line**

**EN 353-2**

Defines the requirements, test methods, marking, manufacturer information leaflet, and packaging of the mobile fall arresters including a flexible anchor line that can be attached to an upper anchor.

**EN 353-1**

**Guided type fall arresters including a rigid anchor line**

**EN 353-1**

Defines the requirements for design, material and construction, blocking methods, and requirements for static strength and dynamic performance, corrosion resistance, marking and information.

**EN ISO 14122-2**

**Permanent means of access to machinery: working platforms and walkways**

**EN 14122-2**

Applies to working platforms and walkways that are part of a machine. May also apply to platforms and walkways providing access to parts of the building where the machine is installed, provided that the main function of this part of the building is to provide access to the machine.

**EN ISO 14122-3**

**Permanent means of access to machinery: stairs, stepladders and guardrails**

**EN 14122-3**

Applies to stairs, stepladders and guardrails that are part of a machine. May also apply to stairs, stepladders and guardrails providing access to parts of the building where the machine is installed, provided that the main function of this part of the building is to provide access to the machine.

**EN ISO 14122-4**

**Permanent means of access to machinery: fixed ladders**

**EN 14122-4**

Applies to fixed ladders that are part of a machine. May also apply to fixed ladders providing access to parts of the building where the machine is installed, provided that the main function of this part of the building is to provide access to the machine. Also applies to ladders that are not permanently attached to the machine and can be disassembled, moved or rotated to the side for some operations on the machine.

# FALL ARREST

## INDIVIDUAL PROTECTION

# PERMANENT SYSTEMS



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# Working at height: what you need to know

# Working at height situations

## What do we call "fall factor"?

Fall factor represents the **proportional degree of fall severity**.

Its value lies between 0 and 2 and can be calculated by dividing the height of fall by the rope/lanyard length. There is a danger above a 0.3 fall factor.

There are two solutions to limit fall factor:

- raising the anchor point position
- increasing the braking distance to reduce the force of the fall impact.

### Factor 0: limited free fall

The anchor point is above the user's head and the lanyard is tightened.



### Factor 1: free fall up to one time lanyard/rope system length

The anchor point is at the same level than the user's chest, i.e. at the sternal attachment point.



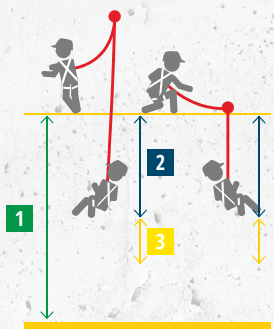
### Factor 2: free fall up to two times lanyard/rope system length

The anchor point is at the same level than the user's feet, i.e. between the sternal attachment point and the ground.



## What do we call "fall clearance"?

Fall clearance represents the distance between the anchor point and the ground. Two different notions of fall clearance must be distinguished: the Fall Clearance Available (F.C.A.) and the Minimum Required Clearance (M.R.C.).



**1 F.C.A.:** represents the distance between the structure on which the user is working and the nearest obstacle (ground, wall,...).

**2 M.R.C.:** represents the minimum required distance, so that the user can fall without any risk of collision with the nearest obstacle.

### KEY

- 1** F.C.A.
- 2** Lanyard length + extension of the energy absorber + user's size
- 3** Safety distance (1m)

## What do we call "swinging effect"?

The swinging effect or pendulum effect represents the **risk of swing if a fall occur**. During the swing and the fall, you may strike the structure you are working on or even an obstacle nearby (wall, ground,...).

It usually occurs when the anchor point is not located exactly above the user while working at height.

To limit the swinging effect, you need to **keep an angle between the P.P.E. and the anchor point below 30°**.

