

Nets

Personal safety nets, also known as fall arrest nets, personnel safety netting or simply 'safety nets', are a form of collective protection against falls.

You may have seen these horizontally slung nets that are designed to catch people if they fall from an elevated location where they are working.

European standard EN 1263-1 gives details of the usage and requirements that personal safety nets must comply with.

- **EN 1263-1 type S**, placed horizontally to arrest the fall of a person from an elevated workflow. Requirements include: mesh size 45 mm or 60 mm or 100 mm. with 11 mm edging cord.
- **EN 1263-1 type U**, sidewall nets; these are fitted vertically on the edge of the workflow.
- **EN 1263-1 type T**, placed horizontally under the edge of the floor.
- **EN 1263-1 type V** is a type rarely seen in Belgium: a combination of a horizontal and vertical net suspended underneath the workflow.

Type U safety nets

Personnel safety netting must, of course, also be correctly positioned and fitted to guarantee proper protection against a fall. The details are set out in EN 1263-2. Some of the points include:

Nets may be attached all the way round with rope attached to fixed suspension points. The maximum distance between these suspension points is 2.50 m. Rope to standard EN 1263-1 type O.

The suspension points must be sufficiently sturdy, calculated to hold a load of at least 6 kN at an angle α of 45°.

The suspension itself is achieved by tying the edge cord of the net to the suspension point. If you are using a single rope, it must have a minimum breaking strength of 30 kN. With a double rope, 15 kN is sufficient.

If the net is too large, you can shorten it by winding it up with the edge cord.

When tying to the suspension point, always include the thicker edge cord and not just the mesh of the net.

If means of attachment other than rope are being used (e.g. carabiner clips), the manufacturer's instructions must be adhered to. EN 1263-2 does not say anything about this.

Nor does EN 1263-2 describe the maximum gap between the edge of the net and the wall or support structure. Try to tension the net so that any gap is no larger than 10 cm. At difficult locations, such as around columns or pipes, a gap of up to 22.5 cm is allowed.

Sometimes, the area to be protected is too large for just one net. Safety nets can be linked to each other using the connecting rope with a minimum breaking strength of 7.5 kN. This connecting rope is braided to the edge cord of both nets, mesh by mesh. The ends of the connecting rope are then tied to the corner meshes. Instead of linking the nets, they can also be slung across each other, although then they must overlap by at least 2 metres.

Ideally, the net should be suspended as close as possible to the workplace to be protected. That way, the danger of sustaining an injury is the lowest.

The fall height is the distance between the workplace and the location of impact into the net.

Maximum 2 metres fall height for nets smaller than 35 m².

Maximum 2 metres fall height if the width spanned by the net is smaller than 5 metres.

Maximum 3 metres fall height at the edges of the net, and up to 2 metres from the edge.

Maximum 6 metres in all other cases.

When a person falls into a net, the net will distort in shape and sag. So there is a danger that the person falling may be injured on obstacles located underneath the net.

For this reason, it is extremely important to take the situation below the net(s) into consideration.

The amount the net sags depends on the span of the net (this being the shortest side of the net) and the fall height. This table contains a number of values.



Type U sidewall nets

These nets ensure that workers are kept back from the edge and so are unable to fall.

Sidewall nets do not have an edge cord as such, but have a thicker hem rope all around the net.

Sidewall nets must be attached vertically, for example to scaffolding or some other sufficient sturdy structure. This can be done in 3 ways:

The net should be pushed mesh over mesh over the horizontal handrail tube.

Attach the net to the handrail tube using buckle straps or lashing cords with toggle fastening, each 75 cm.

Braid the net mesh over mesh over the handrail tube. The rope to be used for this must have a breaking strength of at least 7.5 kN.

Inspections and approval

Every net becomes weaker when it is exposed to the elements. UV radiation in particular tends to age the fibres.

The annual inspection is designed to check whether the net is still strong enough.

3 labelled test meshes are attached to every safety net. To inspect them, one of these test meshes should be detached and sent to the manufacturer. A tensile strength test will then be carried out in the lab. If the result is positive, you will receive an inspection/approval label indicating the next inspection date. If the result is negative, the net may no longer be used as fall protection.

Nets for catching falling equipment

There are no standards for this.

A common solution is to attach a fine-meshed cloth on top of a personal safety net.

