

Specifications and rigging instructions for Fall Arrest Safety Nets

Fully certified to EN1263-1 nets made from 100mm x 5mm knotless netting. All nets come complete with quality 2.5m nylon rope ties and full rigging instructions.

- Performance: high tenacity netting
- Aperture: 100mm
- Diameter: 5mm
- Maximum tensile strength of mesh: 3.20kN
- Colour: Blue, Green
- Material: Polypropylene
- UV Additive: 3 Test strips attached for return testing against UV Degradation.
- Certified: YES - all our Fall arrest safety nets come fully certified and tagged.

Intended Use and Scope

Safety Nets are used to minimise injury from falls for those working at heights. Typically, type S safety nets (used horizontally) are suspended below the worker. In the event of a slip, trip or fall, the worker is contained within the safety net.

There are other types of safety net which are available:

- Type V - For Suspension from gallows;
- Type U - For side attachment to scaffold;
- Type T - For attachment to cantilever framework on the side of a structure.

Standards:

EN1263/1:2002 deals with the manufacture of safety nets. Safety nets complying with this standard should be erected in accordance with the requirements of EN1263/2:2002.

Local standards might also apply.

Fall Height

EN1263/2:2002 Refers to maximum fall height of up to 6m and a maximum fall height of 3m within 2m edge of the net. However, it is good practice to install safety nets as close as possible to the working level (preferably within 2m). This minimises the potential fall distance and thereby reduces the loads impacting the body, the net and the structure to which the net is attached.

Catching Width

It is good practice to extend the netted area further than the point from where the worker is expected to be operating. This eliminates the risk of tripping forward and missing the safety net. The distance in which the worker may travel when tripping forwards is affected by the height at which he is operating.

The following table appears in EN1263/2:2002:-

- Fall Height <1m <3m <6m
- Minimum Catching Width >2m >2.5m >3m

However, it is good practice to extend the netted area to at least one bay forward (no less than 3m). To ensure this is achieved, it is important the installer of nets and the potential user of the nets communicated their anticipated working schedules.

If the safety nets are being used for roofs with a pitch >20 degrees the minimum catching width (CW) shall be at least 3m. The Lowest point should not be less than 3m below the working level.

Parts of an EN1263/1:2002 Type S Safety Net:

- Anchorages/ fixing points
 - Safety Nets must be attaches to a fixing point at least every 2.5m,
- Each fixing point should be capable of withstanding a 6kN loading at 45°.

It is important to consult manufacturer's instructions for those attachment systems which are not dealt with by En1263/1:2002.

Gaps:

Guidance on the horizontal distance between the edge of the net and supporting structure or adjacent net is as follows:-

- It is preferable to rig safety nets with NO gaps.
- Gaps up to 100mm are permitted, in exceptional circumstance; gaps up to 225mm are permitted.

Eaves Bagging

Eaves should be rigged so that the net doesn't waist in and create gaps. In many circumstances there is no suitable structure to achieve this and therefore it is common practice to use a technique called eaves bagging. The eaves boarder rope is tied tightly between adjacent points (with appropriate capability) to form a straight edge. Approx 1.5m of net is gathered into these points to create a bag.

Attachment systems

It is critical that the border rope is always enclosed within the chosen attachment system. There are various means of attachment, however:

- EN1263/2:2002 only refers to the use of tie rope.

Tie Ropes (to EN263/1:2002)

Tie ropes are normally produced from 12mm, 3 strand polyamide

Type L 30kN Type R 15kN

Type M 30kN Type Z 15kN

Rope ends must be protected against unravelling.

Knots

Tie ropes are tied around the boarder rope and selvage of the net and onto the structure (capable of withstanding a loading of 6kN at 45°). There are various knots known to perform satisfactorily in the event of a fall. If skills are unavailable, then training should be sought:-

Net Sag

A Safety net needs to be set at a tension that allows it to perform as designed in the event of a fall. If there is too much pretension in the net, the meshes may not deform at the correct rate, potentially resulting in the net failure. Too little tension will result in increased fall distance and may allow the faller to hit the ground / and or objects below. The correct tension should be 10% of the span (between two adjacent supports)

Net Size

The Net will want to sag when supported between fixed points, thereby pulling in the net perimeter. It is therefore important to always oversize the net by at least 10% on all sides.
(e.g. 10m x 10m hole will need a 11m x 11m net).

Net Deformation and Clearance Distance

The mesh of the safety net is engineered to absorb the load created in a fall by stretching in a controlled manner. This deformation reduces the loads on the faller (thus minimising injury) and the structure to which the net is attached.

The amount the net deforms is dependant on two factors

1. The height of the fall.
2. The span of the net.

A big fall into a big net is likely to result in the net deforming significantly more than a small fall into a small net.

Joining nets

If it is necessary to join safety nets, the following techniques should be employed:-

- Lacing-

8mm dia, polyamide lacing rope with a minimum breaking load of 7.5kN (type O according to EN1263/1:2002) The lacing rope should be fed through every other mesh (picking up both border ropes) so that no gap greater than 100m is presented within the netted area. It is safer to do this on the ground before the nets are rigged. If 8mm rope is not available, then 12mm tie ropes can be used taking care to ensure they overlap. Both ends of the surface should be tied off.

- Overlap

Both nets are simply overlapped. It is critical that the overlap in the middle of the two nets is greater than 2m.

- Pinning

Where it is not possible to achieve a 2m overlap, the top boarder rope of one net is laced to the mesh of the other and repeated on the other side of the overlap. 8mm dia, polyamide lacing rope with a minimum breaking load of 7.5kN (type O according to EN1263/1:2002) should be used or if not available 12mm tie ropes.

Identification

To meet the standard, each safety net must have a unique serial number or tag to aid identification.

A label must also be affixed to the net and contain the following information:

Manufacture or importer, designation, unique identity number, year and month of manufacture, minimum energy absorption capacity of the test mesh and the standard to which the net complies.

Repairs

Safety net can only be repaired by a competent person authorised by the manufacturer.

Note It is good practice to demonstrate an audit trail, from purchase to present e.g. when it was purchased, when it was last examined and repaired (and by whom) and when it was last tested for UV degradation.

Dismantling

It is good practice to identify any damage to the nets prior to dismantling them. Damage should be marked by the rigger to aid future examination. Safety nets should only be dismantled by competent persons, with confirmation from the user that the nets are no longer required. Care must be taken to ensure that any debris is removed carefully and safely.

Loading

Once a safety net has been loaded (with person or object) it should be only be put back into service once it has been inspected by a competent person authorised by the manufacturer.

Storage, Care and Inspection

Safety nets should be; Stored in a dry place, out of direct sunlight, not to be stored in close proximity to heat sources, be kept away from corrosive materials (acids, solvents etc.) It is the riggers responsibility to carry out a visual inspection on any safety net and attachment system. Any damage must be reported before any work commences and appropriate measures taken.

Annual inspection

Safety Nets should be tested every 12 months to ensure they have not deteriorated through UV exposure and potentially fail when used in anger.

One test mesh is removed (simply unthreaded from the net) each year and returned to NETS4YOU LTD

Each test mesh has the nets serial number attached to it for easy identification. If the test mesh passes the tests - NETS4YOU LTD issue a letter confirming the net is fit for use for a further 12 months. We will also supply a pass label which should be affixed adjacent to the label. If the test mesh fails a letter advising you of this will be sent, with instructions for the immediate withdrawal of the net.