

“LISKI” B-NET Protection System

1) INTRODUCTION

Liski, thanks to its fifty years experience in the agonistic and touristic ski field, is an Italian Company active on the national and international market, with a full range of products for preparation of race slopes for alpine skiing, cross-country and snowboard, and also with signs systems and security equipment for every type of ski slope and ski resort.

Liski main priority is the research for high-performance and safe materials, thanks to lead technologies and collaboration with World Cup circuit teams and ski resort experts.

Starting from the beginning of its activity, the strict synergy between Universities and specialized Experimental Search Laboratories ensured the preparation of safety materials, that are subjected to the laboratory crash tests, along with the extensive testing on the field.

LISKI B-NET is a safety net system conforms to the classification for ski racing at World Cup ski events. Liski is a supplier of most important national ski teams and also for very important ski events worldwide like Olympic Games and World Championships.

Every year many hundreds of kilometers of this system are installed in many ski resorts in the World and these nets save the life of hundreds of people; we continually receive numerous positive feedback from installation crews, race organizer committees, technical delegates, coaches, and everyone involved in making ski racing.

Design, manufacturing and assembly of LISKI B-NET system are made in Italy, synonymous of quality and professionalism; these systems are very easy and fast to use and to assemble; technical specifications, and fully documented testing reports can be requested to info@liski.it.

2) MATERIALS

NET

- Material: Polyethylene (PE).
- Dimensions: Length 15 m, height 2 m, plait \varnothing 3,5 and mesh 50x50 mm (for competitions) or 70x70 mm.
- Weight: 380 g per linear meter (mesh 70X70 mm), 560 g per linear meter (mesh 50X50 mm).
- Properties: high resistance to abrasion and atmospheric agents (including UV rays).

SUPPORT POLES

- Material: Polycarbonate (PC).
- Dimensions: Height 2,5 m and \varnothing 35 mm suggested by F.I.S.
- Quantity: variable from 11 to 9 poles per net, depending by the specific situations

Note: For protections in competition, it is recommended to mount the poles with a distance of 1,50 mt (See examples 1 and 2 of set-up models)

- Properties: Atmospheric agents resistance (including UV rays)
Ease and speed in replacement.

HOOKS

- Material: Nylon (PA) and polycarbonate (PC).
- Dimensions: \varnothing 35 mm with clip.
- Quantity: 2 hooks per support pole (up and down).
The pole must pass between net meshes, maximum every 3 meshes for Competitions (as in the picture), while could be only one time in the middle of the net for tourist ski area.
- Properties: Atmospheric agents resistance (including UV rays)
Ease and speed in replacement.



Warning: for safety reason, standing inside the track, support poles must be always behind the net

3) BEFORE USE

These installation guidelines apply exclusively to factory assembled integrated LISKI B-NET systems. Use of individual components outside of factory assembled integrated LISKI B-NET systems, and/or any substitution or modification of any components may cause serious injury or death.

Ski racing are potentially dangerous sports and LISKI B-NET system must be installed in conformity with these installation guidelines as a second choice should A-NET systems not be available or practical. If installation is effected (in whole or in part) outside of installation guidelines, the efficacy of LISKI B-NET system may be seriously compromised. Any installation effected outside of recommended parameters should be recorded, detailed and be conducted under the supervision of a qualified authority.

LISKI recommends that B-NET systems be installed during training and with the same standard of care and concern as would be given during a race. Risk of a skier fall may be greater during training as more runs are performed and often new equipment and techniques are tested during training.

The installation of LISKI B-NET systems must only be carried out by personnel who have received and reviewed all of the information contained in the present document.

Each installation must be documented and a listing of the personnel who participated in the installation, including their names, telephone numbers and level of competence must be kept and made available to the LISKI representative on demand. Installation situations which are not described in these pages must be avoided wherever possible and resolved and corrected only by a qualified authority. Detailed records of any non-manual installations (including measurements and sketches of installations) should be prepared and conserved until successful termination of the event.

4) PREPARATION

Inspect equipment before use. Do not use if you have any doubts about the installation of this product or if you suspect that the materials may be damaged or unfit for use.

Identify potential obstacles to the trail (snow gun, trees, tower, etc.). Both sides of the entire race course should be protected by LISKI B-NET systems for all training and race events as the skier's probable spill zones may not be accurately predicted. In addition, where appropriate, follow the security recommendations provided in the course homologation report.

5) INSTALLATION

To put the poles into the snow, ice or ground, LISKI suggest to use a \varnothing 32 or 35 mm drill bit, depending on the snow conditions.

A minimum of 30 cm of snow is requested for pole stability.

Normally these nets are assembled at the distance of about 10mt from the area to protect.

For the assembling of protection system, before to fix the net to the hooks, the poles must pass between net meshes, maximum every 3 meshes for Competitions, while could be only one time in the middle of the net for tourist ski area.

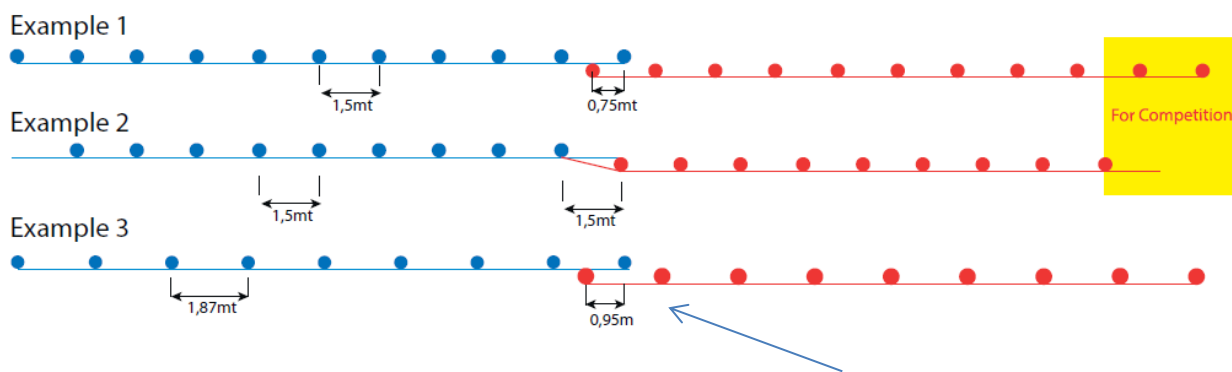
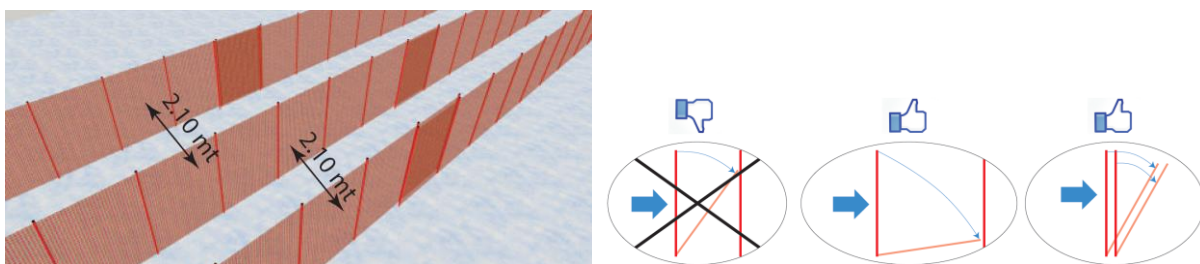
The hooks should be all at the same height (1 in the top, 1 in the lower part of pole); the lower hook should be forward down, the others forward up.

The groups of net, all of the same kind, should be attached and the “uphill” group should surmount the “downhill” group, to avoid that the fallen skier can impact and pass through the only opening of the net, at the joint by two net groups; do not align joints of net sections in the same direction of impact of the skier.

The number of rows that must be placed depends by situation and by danger level; LISKI B-NET can be placed in 1,2,3 or more rows; install the second row of net parallel to the first net, the distance between the nets should be as described in the set-up model.

Note: "Liski" B-net protection system can remain assembled on the track throughout the season, without storing it after each single use; the system must in any case be constantly checked before and after each use by the personnel in charge of the work, especially in the event of heavy snowfall and significant atmospheric events

EXAMPLES OF “LISKI” B-NET PROTECTION SYSTEM SET-UP MODEL



IMPACT DIRECTION

The “Uphill” group (red) should surmount at the “Downhill” one (blue), to avoid that the fallen skier can impact and pass through the only opening of the net, at the joint by two net groups.

EXAMPLE 1 DESCRIPTION

PROTECTION SYSTEM TYPE “B” ON SLOPE IN COMPETITION

nr. 3 or more rows made with :

- nr. 2 or more groups of 15m x height 2 m of braided net, plait \varnothing 3,5mm and mesh 50x50mm
- nr. 22 polycarbonate poles \varnothing 35 x h 2500mm, with 2 net hooks each at the top and low position; the poles must pass between net meshes, maximum every 3 (nr. 11 poles for each group)

Note: the quantity of poles per group may change to fit protection requirements. I.e. : to protect SX bends, 2 rows of protection may be assembled with 31 poles into a 15mt net (distance between poles 0,5 m)

Advertising : It’s possible to attach advertising banners on B net but they must be in windproof light material and connected by non-metal hooks.



PROTECION SYSTEM TYPE “B” FOR SINGLE OBSTACLES

Nr.1 Group of 15 mt. x height 2m of braided net, plait \varnothing 3,5 mm and mesh 50x50mm (for races) or 70x70mm.

Nr.11 polycarbonate poles \varnothing 35 x h 2500mm, with 2 net hooks each at the top and low position;

The pole must pass between net meshes, maximum every 3 meshes for Competitions, while could be only one time in the middle of the net for tourist ski area.

Warning: for safety reason, placing inside the track, support poles must be always behind the net

6) AFTER USE

The inspection of LISKI B-NET systems must be carried out before and after each use by personnel who have received and reviewed all of the information contained in the present document.

Maintain an updated logbook of the frequency of use of this product.

At the end of each season, remove snow/ice from nets and support poles, align net to be re-wound in a straight line, rotate the first support pole along the net to create a bundle and place the nets in the appropriate transport/storage cradles.

Nets should be stored clean, dry and out of direct sunlight, and away from extreme heat and in a well-ventilated warehouse. Nets should be kept off the floor and stored upright, on racks, to provide ventilation underneath. It is better to store the nets vertically to allow drainage and prevent contact of the fiber with the ground. Never store directly on a concrete, metal or dirt floor, and under no circumstances should nets and/or acid and/or alkalis be kept in the same building. Product life will be shortened by chemical and corrosive products or excessive temperatures.