Forces which act inside a layer of snow and possible detachment points

Domestic characteristics of the detachment zone
- Slope angle
- Orientation with respect to wind direction
- Exposure to sun’s rays
- Altitude
- Morphology
- Presence of trees
- Surface area of slope

The triangle shows snow net produced by Officer Maccaferrì has been designed in the basis of the “Theoretical for the Construction of avalanche prediction works at the detachment’ zone” model 2006 issued by IDT (Italian Institute of Technology) for Study of Snow and Avalanche.

Technical characteristics
It is an elastic and modular structure, consisting of the following main elements:
- a) containment structure consisting of triangular shaped panels made of steel cables. There are two types of triangular mesh panels: one with the horizontal side on the ground and the vertical side at the top; and the other with the vertical side on the ground and the horizontal side at the top. The dimensions of the panels vary for each model and depend on the thickness and the specific weight of the layer of snow;
- b) support structure consisting of steel bollard struts, fixed to the ground at the base by means of a universal ball joint and at the top by means of the triangular mesh panels and the downward braces;
- c) connection structure consisting of steel cables to distribute the loads transmitted by the containment structure and to transfer the loads to the ground by means of the anchoring structure;
- d) anchoring structure and foundations: this transfers to the ground the loads generated by the containment, support and connection structures and depending on the terrain in which the system is installed, consists of a load-bearing and foundation anchors made of double vertical cables or by micro-pile or foundation piles up to the struts.

The design of the snow cover avalanche prediction works is constructed on the conditions,
- The snow net has been designed and tested and maintained in accordance with the quality control requirements of ISO 9001.

Officine Maccaferrì Group Profile

For more than 125 years, Officine Maccaferrì has roomed, designed and developed solutions to solve problems in the Construction Market. The Company is one of the most recognized and high-quality products, including woven metal wire mesh products, geosynthetics, wire - in all the five continents. Officine Maccaferrì worldwide headquarters is located in Bologna, Italy, Europe. The Company has locates the ground operations in about 180 countries worldwide and employees nearly 4,100 people

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Mission
In Mission is to research, design and develop advanced solutions aimed at solving problems (be it those related to soil, water, infrastructure, geographic areas, in the preparation of roads, railway, energy, navigation, landslides, civil protection, civil engineering. This is the challenge of Officine Maccaferrì, an organization planned to be global and act at the same time, with as involvement in the most excellent of project activity from design to installation in materials used in covering the world.

Organizational Structure
Officine Maccaferrì's organizational structure is made up of the Innovation to move across the enterprise and around the world, to integrate the different organizational units and to offer the best technical innovations and solutions, and to add an organization to the global and act at the same time. This may seem like a paradox, but we believe that meeting this challenge is key to our success. Officine Maccaferrì is organized with 25 Subsidiaries that manufacture our products and market our solutions worldwide. Subsidiaries are responsible for spreading solutions/interests innovations across the geographic markets, in addition agencies and distribution are present all over the world to cover the entire territory.
Snow nets

The snow nets are designed in order to stabilize the layer of snow at the potential avalanche detachment zone, thereby preventing triggering of the avalanche.

The snow barrier structures act on the slipping and sliding mechanisms of the layer of snow at the downhill direction, thus reducing the velocity of the avalanche. The deformation of the snow barrier is due to the combination of forces which act on the structure, i.e. the weight of the snow layers acting in the direction of the slope. At the point where there is a reduction of the shear forces and a convergence between the slope and the layer of snow, the snow barriers must be positioned in the area of the potential detachment of the snow. It may be necessary to equip several types of structures, on the upper and lower edges of the slope, in order to prevent the propagation of the entire failure and the resulting movement of the mass of snow.

Mesh snow nets may be easily adapted to ground surface irregularities and therefore replace all existing protection devices in situations where the ground alignment is irregular, where it would be very difficult to adapt these solid structures.

An advantage of mesh snow nets is the reduced environmental impact due to their light weight, both during the winter and summer.

These barriers consist of a low component with main and auxiliary trusses, which are further subdivided into sections. These sections are connected one to another using umbilical ropes as well as and point anchors in order to stabilize the system.