

## Instructions for the Construction of Plastic Covered Jumping Hills

**These instructions are valid for new jumping hill projects as from 2010.  
For existing hill constructions a re-evaluation is required for a valid homologation**

The construction requirements in respect to longitude and latitude profiles are the same for plastic covered jumping hills as for normal snow covered hills.

The plastic surfaces and the support for these surfaces must be equally constructed from the foot of the take-off to the end of the plastic covered surface in the outrun. Subconstruction can be different in upper part and lower part of landing area, but must have same stability.

The following is valid as guidelines for length of mats requirement in the outrun from the U-point and outwards.

|                      |           |      |   |           |
|----------------------|-----------|------|---|-----------|
| <b>Hill size HS:</b> | up to     | 49 m | = | 10 meters |
|                      | 50 m to   | 84 m | = | 15 meters |
|                      | more than | 85 m | = | 20 meters |

An approval from the Sub-Committee for Jumping Hills is required for all types of plastic mats /in-run-tracks to be used.

The following instructions for plastic mats, base construction, as well as construction of supports in inrun, outrun, and landing area must be satisfied.

### LANDING AREA AND OUTFRUN

The plastic mats, which are applied, must have a gliding quality similar to a well snow-prepared jumping hill.

The plastic mats must be able to withstand weather strain. There must be no deformation of the joining or fibers within the mats as an influence of sunshine or frost.

An optimum directional ski tracking has to be secured.

The subconstruction and the securing of plastic elements to this construction has to be mounted on to a safety plate all the distance from the take-off to the end of the plastic covered surface in the outrun. The upper fibrejoints of one mat must have an overlap of at least 17 cm by the next mat mounted above. In landing area, from K minus 20% until K plus 20% on normal- and large hills, corresponding overlap has to be 22 cm.

The plastic mats must have a thickness of at least 10 mm measured immediately next to the fibre joint.

The plastic fibres must not be longer than 48 cm measured from the fibre joint.

The separate fibres must have a slight wavy shape in the length direction.

The maximum fibre width must not exceed 2,7 mm and the corresponding thickness not more than 1,6 mm.

The material used to fasten the fibres at the joints must be corrosion resistant.

An elastic moisture resistant damper material must be installed between the base surface and the plastic mat construction. The thickness of this damper material must be at least 20 mm.

The plastic mat fasteners must be stable and corrosion resistant.

The sub-construction securing the mats must be corrosion resistant. The proposal is to use an elastic, but stable net with square masks of nylon or equal material. This net upon the elastic dampening material must be solid connected to the base construction. Every anchoring device, such as screws, hooks, etc. must be corrosion resistant. The fasteners must not protrude the dampening material and thus cause any possible harm.

The stability of the basic hill construction onto which the whole system is mounted, must be such that frost, frequent usage, falls, etc., will have no effect on the hill profile. It must be guaranteed that the mat attachments are unaffected by wear and tear.

The proposal is to construct the basic profile of concrete or of stable impregnated wood. This total sub-construction must securely be anchored into the ground.

A net of rope or similar trelliswork has to be applied over the mats to prevent snow from sliding. These applications must be securely attached to stable foundations made for this purpose.

## **INRUN**

Irrespective of what type of material applied in the inrun track, it must have a gliding surface corresponding to a normal snow track.

Each individual in-run track incl. sidewise tracking guidance, can be made of ice, ceramics, steel, artificial material, glass, etc. The width of track have for normal- and large hills has to be at least 13 cm, but not exceed 13,5 cm.

Distance between both centre of tracks for Jumping hills with w over 75 m: 30 – 33 cm

Width of track: 13.0 – 13.5 cm

Depth of track: at least 3 cm for normal, large and flying hills.

The guidance surfaces must be smooth and must not in any way protrude into the track. Due to the safety of the jumpers it is necessary to secure sufficient drainage of sprinkle water in the transition profile and on the take-off table.

The track - elements must in the entire length be mounted straight with left and right track elements at the same elevation and must exact correspond to approved in-run transition profile.

For jumping hills with **HS** larger than 85 m, the distance between left and right track centre-axis must not be less than 30 cm and no more than 33 cm. There must be a safety zone of damping mats, short-cut grass / artificial grass or carpet on both sides of the track as well as between more tracks at the same level.

The width of these safety zones are governed by the minimum requirements for artificial surfacing stated in ICR 411.4

For jumping in summertime, irrigation of the artificial in-run tracks is done with water.

The irrigation elements, such as tubing and sprinklers, have to be installed in a concealed way so that safety is not exposed.

Artificial tracks which are used in during winter must be heated.

## **HOMOLOGATION of PLASTIC HILLS**

Jumping hills with plastic mats being used for international competitions are required to have, in addition to the normal profile certificate, also a certificate for the artificial surfacing.

The owner of jumping hills must prior to the installation of artificial surfacing, through their respective National Ski Association, issue plans for the mat installation, sub-construction, and working procedures to the chairman for FIS Sub-Committee for Jumping Hills.

The working descriptions must contain information on type of plastic mats, type of anchoring of these mats, sub-construction, the base construction, and inrun tracks.

The proposed mat- and in-run material, as well as the sub-construction, must have a prior acceptance from the FIS Sub-Committee for Jumping Hills before the intended work can begin.

When more than one inrun track is installed, the space between the respective centre axes must be indicated as well as the distance from the outer track axis to the side boards.

The working plans must be issued in the scale 1: 500. The measurements of the mat coverage, widths and lengths, must be clearly indicated. The plans must be issued in 3 copies.

The Sub-Committee chairman can in his own power approve the plans when working procedures and construction requirements for artificial surfacing are fulfilled.

In cases where deviations from stated construction requirements are requested, the decision has to be decided by the Sub-Committee in a formal meeting.

The hill owner should apply to the Sub-Committee chairman for a formal acceptance when the construction work is completed. The chairman will then appoint a member of the Sub-Committee to perform the actual inspection.

The chairman will issue a certificate when the inspection is successful and the construction works are in accordance with the required directions and accepted working plans. This certificate has normally a validity of 5 years. The hill has to be inspected again when the certificate expires. This inspection will decide if the mats and sub-construction satisfy the requirements and a new certificate can be issued.