

# STEINBACH ALPIN



Olympic experience and piste grooming for the World Cup & Europa Cup worldwide with the injection bar invented by Christian Steinbach

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## Water

our most important source of life

Glaciers hold 68 % of all fresh water

Every snowflake is different ... and ... there is an infinite number of ice crystals on Earth





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Preparation with Injection Bar  
and  
Measuring Instruments



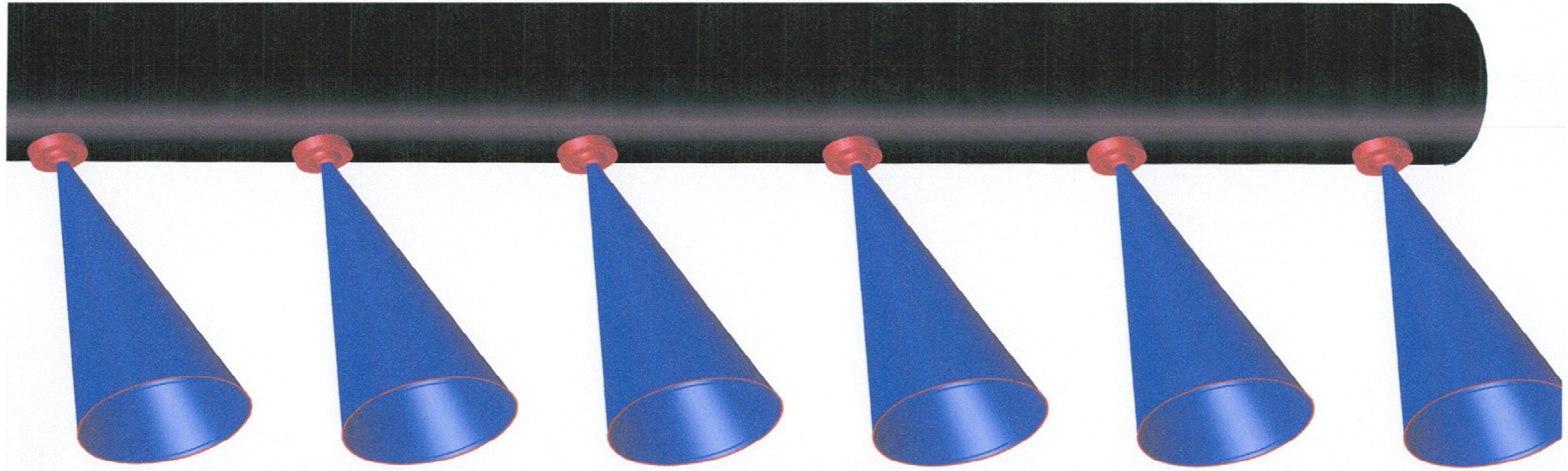
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With the help of the injection bar water is gunned into the snow through special nozzles. This makes the heat disappear through thousands of holes in the prepared snow cover. The cold caused by evaporation is able to stabilize the slope to the preferred hardness without producing ice.



With the injection bar slopes also can be prepared at temperatures above freezing level in the same way. The snow surface remains widely waterless. Using this technique makes it possible to abstain from chemical snow hardener.

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The water is gunned into the snow with special rotation nozzles and spreads cone-shaped. All snow crystals are coated with water by capillary action. This creates a very large surface through which the cold caused by evaporation cools the snow cover top to bottom. The slope gets the hardest at the lower end of the cone. This guarantees a long-lasting high quality of the slope.



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**Snow Section**

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## The benefits:

1. The surface does not ice over
2. Consistent snow density
3. 30 m slope in one operation
4. Temperature resistance
5. High level of resilience
6. The piste does not break up
7. Safer and fair for all racers
8. Cost minimising



**The injection bar is used worldwide**

**Winter Olympic Games:** From 1998 to Turin and Vancouver and finally Sochi 2014

**World Championships:** 2011 in Garmisch and 2013 in Schladming

**World Cup:** from A as in Adelboden and Alta Badia to Val d'Isère and Wengen

**Europa Cup:** e.g. Formigal, Obereggen, Soldeu

More than 1,600 races are held in Europe annually:

World Cup, Europa Cup, FIS Races

80 % of all teams and ski clubs prepare their pistes using the injection bar

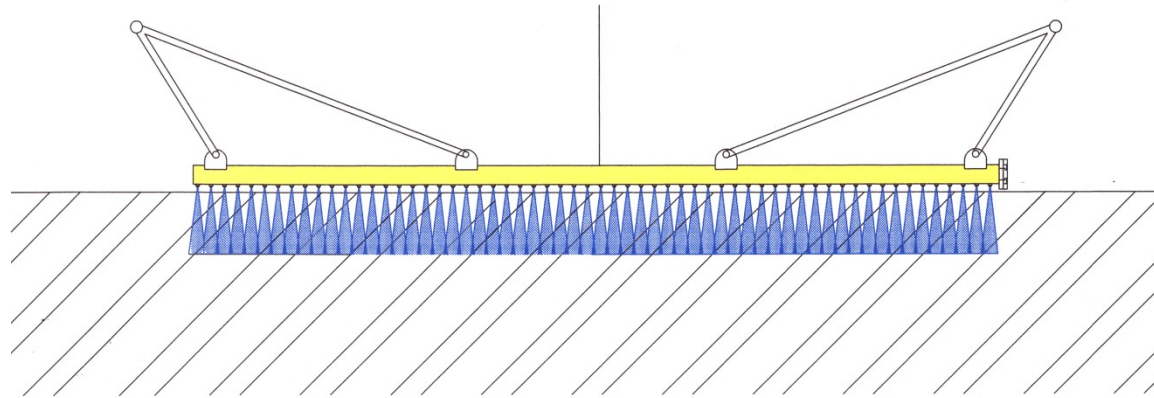


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With the injection system, the pistes compacted to precisely meet the hardness requirements for each discipline. For example, for the different requirements of biathlon, freestyle, snowboard or alpine skiing.

| Snow weight per m <sup>3</sup> |                             |
|--------------------------------|-----------------------------|
| Natural snow                   | 70 - 200 kg/m <sup>3</sup>  |
| Artificial snow                | 350 - 400 kg/m <sup>3</sup> |
| Ice                            | 900 kg/m <sup>3</sup>       |
| Water                          | 1,000 kg/m <sup>3</sup>     |
| Giant Slalom ladies            | 500 kg/m <sup>3</sup>       |
| Slalom men                     | 650 kg/m <sup>3</sup>       |

# **STEINBACH ALPIN**



**Your innovative partner for snow and piste preparation since more than 20 years**



# **STEINBACH ALPIN**

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