

6th Section

4500 Ski Cross

After a timed qualification run, a group of competitors' compete against each other on a specially prepared Ski Cross course that includes different types of turns, jumps, waves and other freestyle terrain features.

4501 Ski Cross Technical Data

4501.1 Vertical Drop

4501.1.1 Courses for all competitions must be a minimum of 130 vertical meters to

a maximum 250 vertical meters. The same course may be used for men and ladies. Average slope should be between 12° to 22°.

4501.1.2 The total skiing time for a course shall be between 35 – 60 seconds.

4501.1.3 The following additional criteria shall apply to course specifications;

4501.1.3.1 World Cup, World Championships and Olympic Winter Games

Length: 1050m ± 150m (900m to 1200m)

Vertical Drop: 215m ± 35m (180m to 250m)

4501.1.3.2 Continental Cup

Length: minimum 750m

Vertical Drop: minimum 165m

4501.1.3.3 National Championships / FIS

Length: minimum 650m

Vertical Drop: minimum 130m

4501.2 Gates and Poles

4501.2.1 Type of Poles to be used

A Ski Cross gate consists of a triangular gate panel attached to one nonbreakaway

outside pole and one stubby pole on the inside of the gate flag.

4501.2.2 Color of Gates

Consecutive gates must alternate in color (except banana's). The slalom poles must carry triangular gates matching the color of the pole.

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4501.2.3 Size of Triangular Gates

Triangular gates must be used in Ski Cross. The size of the gate is:

Base Long side Short side

130cm 110cm 40cm

The turning pole must be a stubby pole (45 cm long)

4501.2.4 Placement of the Triangular Gates

4501.2.4.1 The gates must be set so that the competitors can distinguish them clearly

and quickly even at high speeds. The gate should be set at right angles to the competition line. In certain circumstances, competitors may be required to pass between two gates of the same color (for example: corridors).

4501.2.5 Correct Passage across the Gate Line

A gate has been passed correctly when both the competitors' ski tips and both feet have passed across the gate line. If a competitor loses a ski, without committing a fault, e.g. not straddling a gate, then the tip of the remaining ski and both feet must have passed the gate line.

The gate line is the imaginary shortest line between the two turning poles.
(See ICR Alpine 661.4)

4502 The Ski Cross Course

4502.1 General characteristics of the courses.

The slope should preferably be of a medium pitch (ideally 12°-22°) with varied terrain with an average slope of 15°. The Ski Cross slope must be a minimum of 30 meters wide.

The Ski Cross track width for 4 to 6 competitors, shall be no less than 5 meters in width.

Under certain conditions for short sections (50 meters or less) the course width may be a minimum of 20 meters.

4502.2 Ski Cross Features

The ideal Ski Cross course will allow for the construction of all or some of the following terrain features:

Banks (crescent shaped), Double Banks, Single, Double or Triple Jumps Rollers, Offset Rollers - (Single, double, triple, etc.), Step-up jumps, spines and double spines, Pro style jumps, Hip jumps, Table top jumps and medium or long GS type turns (when building a feature is not possible).

Other terrain features can be built but safety considerations must always be a priority. Gap jumps will not be permitted under any circumstances.

The features should be designed so that competitors are attempting to gain speed and not having to break before each one.

4502.3 Course Preparation

The track should be closed to the public at least 24 hours before the training. Terrain features and jumps must be built with sufficient time so that

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the snow has been compacted to insure that they can be properly maintained during training and competition. The use of artificial means is permitted (salt, water, etc.).

4502.4 Course Design

The total number of terrain features and jumps should be at the discretion of the course designer but will incorporate as many different possibilities as is practical. Blind jumps or terrain features where a competitor is unable to see the landing from the take-off should be avoided. The course should be designed to separate the competitors as quickly as possible after the start (i.e. 3-5 rolls or other terrain features between the start and the first turn). These terrain features should be placed in a straight line from the start to the first turn. Minimum distance of the straight section of the course between the start and the first turn should be no less than 60 meters. The arc of the first turn shall be no less than a 100 degrees change in direction (i.e. the degrees difference between the entrance and the exit of the turn.

The first turn is usually the largest turn of the course, wide enough to accommodate

all competitors at once. The Start should be designed in such a way the competitors can gain the speed with out using their ski poles or skating.

4503 Course Setting

4503.1 Setting of the Gates

The setting of the gates must be done before the official inspection and should incorporate the skillful use of the terrain with the integration of terrain features and jumps into the setting. Minor adjustments in the setting may be necessary during the training to adjust the course for a smooth race line. Any changes made during training should be announced in the start area so all competitors and Team Captains are aware of such changes.

4503.2 Gate Setters

The course setting shall be performed by the Connection Coach together with the Chief of Course in consultation with the Jury and the Competitor Advisory Committee.

4504 Inspection/Training

The competitors are allowed to inspect the course by slowly sliding down through or alongside the course. Inspection times are at the discretion of the Jury but should be a minimum of 15 minutes. All competitors are required to complete at least one inspection run prior to training.

Competitors must visibly wear their bibs and their helmets.

At least one Official training run prior to the actual competition is mandatory for each competition – normally the training runs should be 1 – 2 hours in length and should be held the day before the actual competition takes place (under certain mitigating circumstances the Jury may decide other possibilities)

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4505 Execution of Ski Cross

4505.1 Number of Competitors per Competition

Finals are based on either 32 or 16 ladies and men with 4 competitors per heat or either 48 or 24 ladies and men with 6 competitors per heat.

4505.2 Qualification and Final Format

Ski Cross will be run according to a single knockout format. Timed runs are used to qualify competitors for the Ski Cross Final.

4505.3 Seeding for the Qualification

4505.3.1 Seeding for Major Competitions

For World Cup, World Championships and Olympic Games, the best 16 Ski Cross competitors present will be drawn according to their highest ranking on the WC points list or FIS points list (published several times a year). If the competitors are tied, the higher points in the second category will decide their position. If they are still tied their position will be decided by a draw.

4505.3.2 The Ski Cross Draw

The first group will be randomly drawn. The remaining competitors will be ranked according to their higher ranking on the World Cup points list or the FIS points list.

4505.3.3 Seeding for other Competitions

For other FIS Competitions, the best 16 Ski Cross competitors present will be drawn according to their highest ranking on the FIS points list. The remaining competitors will ranked according to their FIS Point ranking.

The non-ranked competitors are assigned bibs based upon a random draw.

4505.4 Number of Qualification Rounds

4505.4.1 Number of Qualification Runs:

Qualification with one run – all competitors have 1 timed run
Qualification with two runs – all competitors have 2 timed runs
the better of two runs determines the qualification-ranking list (same start list for both runs).

4505.4.2 Tie Breaking

In the Qualification, if two or more competitors have the same time (tied), then the competitor that started later in the qualification will win the tie.

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4505.5 Competitors Advancing to next Round

The 2 competitors (4 competitors per heat) or 3 competitors (6 competitors per heat) advance from round to round as determined by their rank of finish in each heat.

4505.6 Determination of Rank

Ranking in each Heat is determined by the first part of the body that crosses the finish line.

4505.6.1 Finish Line Camera

Whenever, possible, a finish line camera (video or photo finish) should be available. In case of a tie (between the 2nd and 3rd / 3rd or 4th place competitors in the heat only), the competitor with the lowest qualification rank will advance.

4505.6.2 Ranking of Competitors that Do Not Finish

In a case where more than one competitor does not complete the course nor cross the finish line, the rankings in that heat will be based on the location where the competitor(s) have completed the course. The competitor that has made it further down the course will receive the higher rank.

4506 Ski Cross Finals Pairings

Pairings for the Finals will be according to the following:

4506.1 Ranking for 8 heats / 4 per heat with 32 Ladies or Men

Heat # 1st position 2nd position 3rd position 4th position

1 1 16 24 32

2 8 9 17 25

3 6 11 19 27

4 4 13 21 29

5 3 14 22 30

6 5 12 20 28

7 7 10 18 26

8 2 15 23 31

4506.2 Ranking for 4 heats / 4 per heat with 16 Ladies or Men

Heat # 1st position 2nd position 3rd position 4th position

1 1 8 12 16

2 4 5 9 13

3 3 6 10 14

4 2 7 11 15

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4506.3 Ranking for 8 heats / 6 per heat with 48 Ladies or Men

Heat 1st position 2nd position 3rd position 4th position 5th position 6th position

1 1 16 24 32 40 48

2 8 9 17 25 33 41

3 6 11 19 27 35 43

4 4 13 21 29 37 45

5 3 14 22 30 38 46

6 5 12 20 28 36 44

7 7 10 18 26 34 42

8 2 15 23 31 39 47

4506.4 Ranking for 4 heats / 6 per heat with 24 Ladies or Men

Heat 1st position 2nd position 3rd position 4th position 5th position 6th position

1 1 8 12 16 20 24

2 4 5 9 13 17 21

3 3 6 10 14 18 22

4 2 7 11 15 19 23

4507 The Start

4507.1 Bibs

Qualification Bibs are numbered on front and back for better visibility by the course judges.

4507.2 Bib Colors for the Finals

For the Final, the main 4 colors of the bibs will be Red, Green, Blue and Yellow. White and Black will be used additionally if a 6-person format is used.

4507.3 Bib Assignment for the Final

Assignment of the bibs in each heat is based upon the competitors qualification ranking. The highest ranked competitor in the qualification is assigned the red bib and can choose the lane first. The second ranked competitor is assigned the green bib, the third ranked is assigned the blue bib and the fourth ranked is assigned the yellow bib.

4507.4 Ready for Start

It is the competitors' responsibility to arrive at the start gate in time.

A missed start is a DNS. (Did Not Start)

4507.5 Start Interval for Final Round

During the Team Captains' Meeting before the final round, a start interval will be announced by the Jury.

4507.6 Start Gate Lanes and Start Positions

Each starting position is identified by the Lane of the Start Gate.

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Looking up the course to the Start Gate the positions are set from left to right:

For a 4 competitor Ski Cross, Position 1 is to the far left and Position 4 to far right.

For a six competitor Ski Cross, Position 1 is to the far left Position 6 is to the far right.

4507.7 Start Command

“We are ready for next Heat, proceed to the Start Gate”

“Enter the Start Gate” (30 seconds before the start command)

“Skiers Ready!”, then **“Attention!”** followed by the Starter opening the gate.

4507.8 Ski Cross Start Ramp and Start Device

4507.8.1 The Start Ramp

The Start Ramp shall be prepared in such a way that the competitors can stand relaxed in the starting device and can quickly reach full speed after leaving the start.

4507.8.2 Placement of the Start Gate

The start gates are to be placed in the center of the courses. The gates have to open simultaneously and it must be impossible for a competitor to open the gates themselves or block the opening of the gate by applying force to the gate.

4507.8.3 Ski Cross Start Gate Standards

Hinged gates, each 100 cm wide and 40 cm in height.

There shall be 60 cm between the outside edges of each gate section.

The height of the handles shall be 95 cm above the snow level and set parallel to the hinged gate. The size of each handle shall be 10 cm long with a width between 3 cm to 4 cm. The width between the ends of each handle needs to be between 80 cm to 90 cm. Different positions for the handles should be available for children and junior competitors.

The starting surface of the gate must be covered with a protection for the skis. The gate must have sufficient weight to operate properly.

The locking system should operate in such a way that the gates open outward, as least past 45 degrees, on operation of a single control mechanism.

Mechanical controls are all preferred over electrical ones, for reasons of reliability and portability.

4507.8.4 Approval of Start Device

All Start Device for FIS World Cup, FIS World Championships and Olympic Winter Games need to be approved by the FIS.

4508 Contact

4508.1 Definition of Contact and Blocking

Intentional contact by pushing, pulling or holding another competitors' arm, leg or pole or other means, which causes another competitor to slow down, fall or exit the course is not allowed and is an automatic disqualification. A competitor is not allowed to bring their arm or ski pole in front of another competitors' body to avoid being passed. Blocking, by intentional movements of the body or leaving the natural skiing line is not allowed.

The “natural skiing line” is defined as the fastest way between the features and around the gates. All contact infractions will be at the discretion of the course judges and the Jury.

4508.2 Disqualification for Intentional Contact

If a competitor is disqualified based upon an infraction of the rules regarding contact, he/she will not be classified in the competition.

4508.2.1 The competitors shall be ranked as they finish. Re-runs will only be given

pursuant to the applicable provisions of Rule 3057.

4508.2.2 Re-runs shall not be granted solely as a result of an incident of intentional contact and all competitors, other than those that receive a DSQ pursuant to Rule 3056.

4509 Protests

DSQ's will be announced and/or posted immediately after each heat at a designated area at the bottom and top of the course.

All protests must be reported to the Chief of Finish before the next heat begins. Protests after this time will not be accepted. Protests need not be in writing but all other ICR rules for protests will apply. The Jury will consist of the TD, Race Director or Chief of Competition and the Referee. The protest fee must be paid at or before the conclusion of the competition.

4510 Final Ranking

4510.1 Four Person Format

Competitors 1 to 4 are ranked according to their place of finish in the final heat. Competitors 5 to 8 are ranked according to their place of finish in the consolation round. All remaining competitors are ranked according to the round they go out in (i.e. quarter finals) and their qualification times within that round. (example: competitors ranked 9 to 16 in the quarterfinal would be ranked according to their qualification times.)

4510.2 Six Person Format

Competitors 1 to 6 are ranked according to their place of finish in the final heat. Competitors 7 to 12 are ranked according to their place of finish in the consolation round. All remaining competitors are ranked according to the round they go out in (i.e. quarter finals) and their qualification times within that round. (example: competitors ranked 13 to 24 in the quarterfinal would be ranked according to their qualification times.)

4511 Equipment

For further definitions, see FIS Equipment Rules Section E.

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4511.1 Thickness of ski boot soles

See FIS Equipment Rules Section E, 4.0.

4511.2 Number of Skis

Each competitor is limited to two pairs of skis on the race day (Qualification and Final). The Organiser will mark the skis.

4511.3 Helmets

The competitors are required to wear helmets.

See FIS Equipment Rules Section E, 6.5.

4511.4 Ski Suits

Ski suits must be two pieces; pants and a separate top. Form-fitting speed or downhill suits are not permitted.

Non-protruding body protection and padding is recommended.

Protection equipment must be worn on the body. No straps, fastening devices or other methods can be used to tighten the suit material closer to the body.

The gap in the material must be a minimum 60mm, measured anywhere

around the circumference of the mid thigh, the knee, the top of the ski boot, on the lower body and around the elbow and the bicep on the upper body.

See FIS Equipment Rules Section E, 6.1.