



ALPINE CANADA

ALPINE CANADA ALPIN
Gulf Canada Square
153, 401 - 9th Avenue SW
Calgary, AB T2P 3C5
T 403.777.3200
E info@alpinecanada.org
www.alpinecanada.org

SKI CROSS COURSE GUIDELINE

Overview

Alpine Canada Alpin's goal and mission is to provide host clubs and resorts the tools to execute Ski Cross events successfully and safely. This includes training each host club or resort in course build best practices and event execution. These guidelines are 'Best Practices' when building a Ski Cross course. It is still recommended to consult with a Course Builder/Designer before starting your construction phase to ensure your site and design are appropriate for the level of competition you will be hosting and/ or the level of Skiers that will be using the course.

Furthermore, Alpine Canada Alpin will be providing hands on assistance through the national event director to help execute events while training the local organizing committees and resort build staff.

Canadian Course Rating

Alpine Canada Alpin has developed a series of course levels specific to event types to help ensure development of the sport and ensure the safest environment possible for the participants.



Canadian and Provincial Ski Cross Series/ Development Events

Ski Cross style start, bank turns, large and small rollers combined with GS style turns. Focus is on racing within traffic and learning the basic elements of ski cross while experiencing some general ski cross terrain. Courses can be built by resort staff with some direction from experienced Ski Cross coaches or Staff. Coaches must have CSCF EL certified certification and the Alpine Canada Alpin Coaching and Safety module. **SMALL** level courses are intended for the Gliding Start through Learn to Train phases of the LTSD.



Canadian Ski Cross Series Events / Nor-Am (detuned)

Ski Cross style start, bank turns, large and small rollers, and introduction of technical features and small air features. Focus is on racing within traffic and learning the basic elements of ski cross while experiencing some general ski cross features, terrain and some low level air time. Courses can be built by resort staff with some direction from experienced Ski Cross coaches or Staff. Coaches must have CSCF EL certified certification and the Alpine Canada Alpin Coaching and Safety module. **MEDIUM** level courses are intended for the Learn to Train through Learn to Race phases of the LTSD.



Nor-Am / Europa / World Events

Full use of terrain and features found in a Nor-Am or World Cup level but in a toned down version. Course needs to be built by an experienced Ski-Cross course builder and meet all FIS safety regulations. **LARGE** level courses are intended for the Learn to Race through Train to Race phases of the LTSD



World Cup / Olympic Events/ XGames or Specialty Events

Full World Cup and Olympic level courses built by an experienced Ski-Cross course builder and meet all FIS Safety regulations. Other unsanctioned event courses are built with no specific guidelines and built for specialty events. **EXTRA LARGE** level courses are intended for the Train to Race through Train to Win phases of the LTSD.

Rules and Recommendations Surrounding Course Building Best Practices

Currently there is no homologation for Ski Cross courses built for FIS sanctioned races. It is the responsibility of the Chief of Course and the Course Builder/designer and Technical Delegate to ensure that the course and its features are safe for the competitor's level of skiing.

When building a course for FIS Sanctioned Ski Cross, part of your goal must be to maintain good flow and speed control with a focus on smooth takeoff and landing based on the length, trajectory and height of the features.

FIS Hill Requirements

- 650 to 1200 meters long ,depending event level <WC
- 130 to 250 meters vertical drop
- 30 meter course width minimum, 40-50 meters is recommended where at all possible
- Slope average of 15 degrees , ideally 12-22 degrees of varied terrain
- Race lane width can be no less that 5 meters wide and should safely accommodate 4 skiers
- A Drop Down Start Gate is used, refer to FIS specifications FS ICR 4507.8.3
- Course is a series of 'features and direction changes'
- 50% turns of varying size, radius and speeds between the features
- 25% straight running, traversing and absorption, bumps and rollers
- 25% in the air or airtime off of different air features
- The Start stretch should be no less than 60 meters to the first corner/turn
- The first turn/direction change must be no less than 100 degrees
- Also see FS ICR Sec 4501.0

General Characteristics

- Course design should follow the flow of the ski hill & incorporate as many different features as the course builder desires
- Avoid blind take offs and landings on features
- Combine turns with features to control speed
- Separate skiers as quickly as possible after the start with multiple features before the first turn
Use of 3-5 rollers of different sizes or other features immediately after the start placed in straight line ,these features should be designed so skiers can gain speed without using poles
- Minimum 60m to 1st turn, longer is better as long as it does not promote constant unsafe acceleration
- Arc of the first turn should be no less than 100 degrees in change of direction
The first turn is the largest on course to accommodate all skiers entering at the same time
- Link each section with direction changes. These direction changes can be a flat or banked turns
- Last feature prior to finish line should be directly in line with finish (i.e. no turns, skiers should be on a flat ski before the finish line)
- Flat space prior to Finish Line to ensure skiers are on the snow when timing is used
- Finish line must be at least 8m wide and marked clearly
- Technical installations must be safely protected
- Finish area must be a safe length to allow skiers to stop from full speed. The width must accommodate 4 skiers stopping at the same time. A minimum of 15 meters wide is recommended. Flat and completely fenced in.



There are no official guidelines for non FIS level courses; however FIS recommendations for length, pitch, width and size are good best practices to review when choosing a site for your course. Difficulty of features should be scaled appropriately for the level of skiers who will be using it. When building a **SMALL** course your focus should be to promote dynamic movement, line choice, with as many features as possible in a fun and safe environment that allows all four competitors to successfully finish the course. Simple guidelines may be implemented during your construction process so you keep to your intended target.

- Insure that a Cat /Groomer can groom the course (race lane) from top to bottom easily with the tiller down. This includes all features on the course. Your goal will be to groom your course (race lane) top to bottom in 2-3 passes.
- Use your terrain to control speed. When you speed up the skier you must slow them down with features.(rollers, direction changes, Burms etc)

- Build your course from top to bottom in sections. With a capable skier, test each section for speed, flow and safety before moving on to the next. Overlap your testing from one section to another, ensure sections flow together in a safe controlled manner.
- When testing sections during your build process insure you can let your skis glide without breaking before your features. A skier should be able to maintain a good balanced body position over their skis throughout the whole course.
- The features and order of the features chosen should be designed so that the skiers are attempting to gain speed and not having to break before each one.

See **SMALL** course feature guide for recommended features and designs



Follow the same simple guidelines suggested for building a small course. A **MEDIUM** course should also promote dynamic movement. The introduction of small air features at this level will promote the unweighting of the body and some long ,low trajectory flight. The dynamic motion can also be amplified by increasing the size of smaller features like rollers,single or combinations. When adding small air features ensure both the takeoff and landings are level allowing the skier to maintain a flat ski. All jumps must be proportional to the landings. A skier must land in the top half of the landing when gliding off the feature. Use an experienced Skier in the testing phase to calculate your jump angles.

See **MEDIUM** course feature guide for recommended features and designs



A **LARGE** Ski Cross course is usually built from scratch for a specific competition. It is also possible to add features or alter a lower level course to bring it up to a higher level for competition. This level of course should be built under the recommendations, design and supervision of a course Builder/Designer. It will also be subject to inspection by qualified competition officials prior to the competition day. Consulting or hiring a Builder/Designer will ensure there are no unnecessary changes needed at the last minute prior to competition. This level of course needs close attention paid to every aspect as feature size and speed is increased dramatically over lower level courses.

A **LARGE** course is not for public use.



Full World Cup and Olympic level courses are built by an experienced Ski-Cross course builder and meet all FIS Safety regulations. Specialty courses are designed and built by private contractors or event companies for specialty events and have no guidelines ,they also hold different insurance considerations.

Gates and Poles

A [Ski Cross](#) gate consists of a [triangular gate panel](#) attached to one non-breakaway non-hinged, static or fixed base, outside pole and on the inside or turning side a hinged, or breakaway, 45 cm long rubber stubby pole ([turning pole](#)).

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 rubber stubby pole (45 cm long)



Safety Net and Installations

Insure all spill zones and dangerous areas are netted correctly according to the manufactures instructions of the product used.

B-net is best used in all cases. All Banked corners must be lined with B-net on the top from entrance to exit. Place net at least 50cm back from the edge of the bank, slightly angled inwards toward the race lane. B-net on burms must be pulled tight.

Use Crash padding for additional protection where applicable.



ACA Contacts

David Ellis – Director, Sport (Ski Cross)

JF Rapatel – National Athletic Director

Philippe Bernier – Director, National Competitions

Jen Duggan – Manager, National Services

Travis Firth – Coordinator, Ski Cross competitions

Jim Sidorchuk – SX Officials Chair

More information on courses, features and explanations can be found on the FIS wiki site at http://wiki.fissski.com/index.php/Ski_Cross_Courses