301-333 Terminal Avenue, Vancouver, BC Canada V6A 4C1 | t: 604.568.1135 | f: 604.568.1639
| e: info@canadasnowboard.ca | www.canadasnowboard.ca

Helmet Information Sheet for Athletes

Why wear a helmet?

1. Help the head slow down more gradually when you are moving and come to an abrupt stop and hit your head
    - Your brain tries to keep moving—a helmet is designed to minimize this type of acceleration/deceleration injury
2. Spread the impact over a larger surface area
    - Spreads the force of impact over the whole helmet instead of just the point of impact
3. Protect your head and skull
    - Prevents direct impact to the skull
    - Protects your head from cuts and scrapes

Helmets only work if they are worn consistently and correctly!

What certifications exist for ski and snowboard helmets?

Central European Norm: **CEN 1077**

American Society of Testing Materials: **ASTM F2040, or US 2040**

Snell RS-98

FIS requirement: *FIS Snowboard International Snowboard Competition Rules, 2010*

Section 2, Subsection 2010: Competitors' Responsibilities

2010.6 The use of crash helmets is compulsory for all snowboard events. Helmets used in FIS Snowboard events shall be specifically designed and manufactured for the respective discipline and shall bear a CE mark and conform to recognized and appropriate standards such as CEN 1077 or ASTM F2040, US 2040.

Current Canadian safety practice

The safety of ski and snowboard helmets is not currently federally regulated. A proposal for legislative action regarding advertisement, sale, and importation of ski and snowboarding helmets is currently being reviewed and processed, but has not yet been approved. ***In other words: YOU are responsible for ensuring that the helmet you are wearing is safety certified.***

Other certifications you may see inside your helmet

U.S. Consumer Product Safety Council: ***CPSC***

Central European Norm: ***CEN 1078***

➔ Both CPSC and CEN 1078 are bicycle helmet safety standards

Replacing your helmet

Ski and Snowboard helmets are designed for a single-impact. Therefore, when you have a major crash, or even a minor crash and think your helmet has been compromised, it needs to be REPLACED. Helmets should also be replaced at the beginning of each competitive season. As a high-performance sport, the large volume and high intensity of year-round training makes this practice particularly important.

Summary: Snowboard Canada current helmet use and accompanying safety standards

(SBX and PGS) National Team feedback, 2010

****IMPORTANT NOTE: Certifications can vary between models within a helmet brand (i.e. Smith Holt, Smith Maze). Buying a particular brand therefore does NOT necessarily ensure a helmet meets the highest safety standard.**

Discipline	Helmet	Certification			
SBX		EN 1078	CPSC	EN 1077	ASTM F 2040
	Sandbox	□			
	Giro			□	□
	Burton			□ (B)	□
	Smith		□	□ (B)	□
PGS					
	POC			□	
	Uvex			□ (A)	□
	Shred			□ (A)	□
	Smith			□ (B)	□
	Burton			□ (B)	□

**Class B helmets have been designed to allow better ventilation and hearing. Class A helmets have full hardshell ears and no holes for ventilation. Compared to Class B, Class A protects a larger area of the head and offers a higher degree of protection from penetration.*

Most stringent

Least Stringent

Certification	Athletes (SBX and PGS), 2010	Percentage
Snell Certified	**0 of 20**	**0%**
ASTM F2040 and EN 1077	**15 of 20**	**75%**
EN 1077	**3 of 20**	**15%**
EN 1078	**2 of 20**	**10%**

Testing protocols overview

	CEN 1077	ASTM F2040	Snell RS-98
Single drop height (flat anvil impact test)	1.5m	2.0m, with a peak velocity of 6.2 m/s	2.0m
Peak acceleration on headform	→ Peak acceleration to headform must not exceed 250Gs upon impact	→ Peak acceleration to headform must not exceed 300Gs upon impact	→ Peak acceleration to headform cannot exceed 300 Gs upon impact
Other required test drops		Impact test drops onto three kinds of anvils: flat, hemispherical and a solid steel edge anvil	Impact test drops onto three kinds of anvils: flat, hemispherical and a solid steel edge anvil
Impact energy called for	69 Joules	98 Joules	100 Joules
Testing temperature range specified for ski helmets		Low: -22° to -28°C, high: 32° to 38°C testing carried out in cold, hot, and wet conditions	
Penetration test	"Drop-hammer" type test where the helmet and headform is allowed to drop onto a conical metal punch from a height of .75 meters. → failure if the punch makes contact with the headform	No penetration test required	A 3 kg, cone shaped test striker is dropped onto the helmet from a height of 1 meter. For the helmet to pass the striker "must not penetrate to achieve even momentary contact with the test headform." Exclusive to RS-98 is a chin bar test which applies to full face helmets only
Retention system (chin strap) test	"Included"	Dynamic Strength Retention Test - hot, cold, and wet helmets placed in an apparatus allowing a drop weight to slide in a guided free fall, impacting a rigid stop anvil. A pre-loaded 8kg sliding weight (in 'stirrup'='jaw') is dropped from .6 meters, impacting the stop anvil. →retention system must remain intact, and without elongating more than 30 mm A positional stability test (roll-off) is also employed	Far more preload (than ASTM) is applied and a much heavier drop weight is utilized, but the weight mass is dropped in a vertical guided fall a distance of 30 mm, rather than the 600 mm in the ASTM test. A similar roll-off test is employed