

## Appendix I Symbols and Abbreviations

Symbol	Term	Units
BB	Boardblock test	categorical
CT	Compression test	categorical
D#	Avalanche size – destructive force	categorical
E	Grain size	mm
F	Grain form	categorical
f	Fall height of the hammer, ram penetrometer	cm
H	Vertical coordinate (line of plumb)	cm, m
H	Mass of hammer, ram penetrometer	kg
H2D/H2DW	Twice per day snow accumulation/water equivalent	cm/mm
HIN/HINW	Interval snow height/water equivalent	cm/mm
HN24/HN24W	Height of 24-hour snow accumulation/water equivalent	cm/mm
HN/HNW	Height of new snow layer/water equivalent	cm/mm
HS/HSW	Height of snowpack/total water equivalent	cm/mm
HST/HSTW	Storm snow height/water equivalent	cm/mm
HW	Water equivalent of a layer	mm
L	Layer thickness (measured vertically)	mm,cm,m
n	Number of blows of the hammer, ram penetrometer	dimensionless
P	Penetrability	cm
p	Increment of penetration for n blows, ram penetrometer	cm
PF	Depth of foot penetration	cm
PR	Depth of penetration by standard ramsonde	cm
PS	Depth of ski penetration	cm
Q	Shear quality	categorical
R	Hand hardness index	categorical
R#	Avalanche size – relative to path	categorical
RB	Rutschblock test	categorical
RH	Relative humidity	%
RN	Ram number	kg

Symbol	Term	Units
RR	Ram resistance	N
SB	Stuffblock test	categorical
SR	Stability ratio	dimensionless
ST	Shovel shear test	categorical
T	Temperature of snow	°C
T	Mass of tubes, ram penetrometer	kg
Ta	Air temperature	°C
Tg	Ground temperature	°C
Ts	Temperature of snow surface	°C
T20	Temperature of snow 20 cm below the surface	°C
$\alpha$	Alpha angle	degree
$\alpha_i$	Alpha angle of an individual avalanche	degree
$\alpha_e$	Alpha angle of an extreme event. Smallest angle observed in a specific avalanche path	degree
$\Delta$ (Delta)	Change in penetration	cm
$\varepsilon$ (epsilon)	Strain	dimensionless (m/m)
$\theta$ (theta)	Liquid water content	% (by volume)
$\rho$ (rho)	Density	kg/m <sup>3</sup>
$\sigma$ (sigma)	Normal stress	Pa
$\Sigma$ (Sigma)	Normal strength	Pa
$\tau$ (tau)	Shear stress	Pa
T(Tau)	Shear strength	Pa
$T_\infty$	Frame independent shear strength	Pa
T <sub>100</sub>	Shear strength measured with 100 cm <sup>2</sup> shear frame	Pa
T <sub>250</sub>	Shear strength measured with 250 cm <sup>2</sup> shear frame	Pa
$\psi$ (psi)	Slope angle	degree

# Snow Profile

Reference: \_\_\_\_\_

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Observers: \_\_\_\_\_

Location: \_\_\_\_\_

Elev: \_\_\_\_\_ Aspect: \_\_\_\_\_ Slope Angle: \_\_\_\_\_ Precip: \_\_\_\_\_ Sky: \_\_\_\_\_ Wind Dir: \_\_\_\_\_ Speed: \_\_\_\_\_ G

Wind Loading? Y N PREV Ski Pen: \_\_\_\_\_ cm in Boot Pen: \_\_\_\_\_ cm in Profile Type:

Snow Layer Temperature (°C)										Depth <i>H</i>	Moist <i>θ</i>	Form <i>F</i>	Size <i>E</i>	Density <i>ρ</i>	Test Results and Comments
-18°	-16°	-14°	-12°	-10°	-8°	-6°	-4°	-2°	(mm)						
										200					
										190					
										180					
										170					
										160					
										150					
										140					
										130					
										120					
										110					
										100					
										90					
										80					
										70					
										60					
										50					
										40					
										30					
										20					
										10					
										0					

I                      K    P                      1F              4F      F



## Temperate Conversion Chart

°C	°F
-40	-40
-39	-38.2
-38	-36.4
-37	-34.6
-36	-32.8
-35	-31
-34	-29.2
-33	-27.4
-32	-25.6
-31	-23.8
-30	-22
-29	-20.2
-28	-18.4
-27	-16.6
-26	-14.8
-25	-13
-24	-11.2
-23	-9.4
-22	-7.6
-21	-5.8
-20	-4
-19	-2.2
-18	-0.4
-17	1.4
-16	3.2
-15	5
-14	6.8
-13	8.6
-12	10.4
-11	12.2
-10	14
-9	15.8
-8	17.6
-7	19.4
-6	21.2
-5	23
-4	24.8
-3	26.6
-2	28.4
-1	30.2
0	32

°C	°F
0	32
1	33.8
2	35.6
3	37.4
4	39.2
5	41
6	42.8
7	44.6
8	46.4
9	48.2
10	50
11	51.8
12	53.6
13	55.4
14	57.2
15	59
16	60.8
17	62.6
18	64.4
19	66.2
20	68
21	69.8
22	71.6
23	73.4
24	75.2
25	77
26	78.8
27	80.6
28	82.4
29	84.2
30	86
31	87.8
32	89.6
33	91.4
34	93.2
35	95
36	96.8
37	98.6
38	100.4
39	102.2
40	104

## Wind Speed Conversion Chart

mi/hr	m/s	kt	km/hr
1	0.4	0.9	1.6
2	0.9	1.7	3.2
3	1.3	2.6	4.8
4	1.8	3.5	6.4
5	2.2	4.3	8.0
10	4.5	8.7	16.1
15	6.7	13.0	24.1
20	8.9	17.4	32.2
25	11.2	21.7	40.2
30	13.4	26.1	48.3
35	15.6	30.4	56.3
40	17.9	34.8	64.4
45	20.1	39.1	72.4
50	22.4	43.4	80.5
55	24.6	47.8	88.5
60	26.8	52.1	96.6
65	29.1	56.5	104.6
70	31.3	60.8	112.7
75	33.5	65.2	120.7
80	35.8	69.5	128.7
85	38.0	73.9	136.8
90	40.2	78.2	144.8
95	42.5	82.6	152.9
100	44.7	86.9	160.9
105	46.9	91.2	169.0
110	49.2	95.6	177.0
115	51.4	99.9	185.1
120	53.6	104.3	193.1
125	55.9	108.6	201.2
130	58.1	113.0	209.2
135	60.4	117.3	217.3
140	62.6	121.7	225.3
145	64.8	126.0	233.4
150	67.1	130.3	241.4