

1. Location

Note on the Test Record the location of the Snow Profile and estimate or measure:

Aspect (the direction the slope faces) **Angle** (the steepness of the slope) and **Altitude**

2. Current weather

Make a note of the current weather by estimating or measuring:

- Precipitation (rain or snow; light, heavy, etc.)
- Wind (direction and strength)
- Air Temperature (in the shade and preferably 1m above the snow)
- Cloud cover (amount of sky covered by cloud)

3. Snow Profile

- 3.1 Dig a snow pit about 1m wide to ground level or 1.8m deep. The back wall of the pit should be vertical and smooth. Measure the height of the snow pit and note on the Test Record.
- 3.2 Measure the temperature at ground level and the snow temperature every 10 or 20cm up to the top of the snow profile, and the snow surface temperature. Plot the temperatures on the Test Record.
- 3.3 Use the crystal screen or another piece of plastic to cut down through the back wall to feel if there are any changes in resistance and for the presence of different layers. Note the height from the ground of each layer and mark them on the Test Record.
- 3.4 Use the penetration test (1= fist, 2= 4 fingers, 3= 1 finger, 4= pencil, and 5= knife) to categorise the layers and mark them on the Test Record.
- 3.5 Examine the grains of snow at ground level and in each layer. Look for any signs of crystal growth and rounding or bonding between the snow grains. Note grain size. Make comments on the Test Record.
- 3.6 Assess and note on the Test Record any moisture in each snow layer by making a snowball. 1= dry (no snowball), 2= moist (dry glove), 3= wet (wet glove), 4= very wet (water drops), 5= slush (flooded).

4. Shovel Test 1 (shear)

- 4.1 In the pit isolate a column 30cm x 30cm, and around 70cm deep (the tail of the skis and ski poles are useful for digging around the sides). Put the shovel at the back of the column and with an even pressure pull forwards (do not lever) until there is a shear failure. Examine the failure layer.
- 4.2 Note on the Test Record the level or layer that sheared, and if it was easy or difficult to pull.

5. Shovel Test 2 (compression)

- 5.1 Isolate another column 30cm x 30cm, and down to ground level or 1.2m deep. Taking care not to disturb any layers near the surface place the blade of the shovel on the top of the column.
- 5.2 Carry out the three sets of taps (see below) and note the point of any collapse or sheering on the Test Record.
 - Tap 10 times – *using tips of fingers and moving hand only from the wrist*
 - Tap 10 times – *using palm of hand and moving the hand and lower arm only from elbow*
 - Tap 10 times – *using the fist and moving hand and whole arm from the shoulder*

6. Ski or Board Test

- 6.1 Now isolate a block that is wide enough to stand on with skis or a board, 1.5m wide from front to back and 2m wide from left to right (i.e. wide and long enough to stand on with skis or board).
- 6.2 Apply a load to the isolated block by following the steps below and note the point of any collapse or sheering on the Test Record
 1. Fails whilst isolating the block extremely unstable
 2. Fails whilst approaching or stepping onto the block extremely unstable
 3. Fails with down sink onto skis or board very unstable
 4. Fails with a jump unstable
 5. Fails with a 2nd jump unstable
 6. Fails after repeated jumps without skis or board relatively stable
 7. No failure stable