AVALANCHES

Snowpack instability phenomena are assessed, which occur in particular snow and weather conditions and may affect anthropised areas, as defined below, pursuant to the Prime Ministerial Decree of 12 August 2019.

An anthropised area is defined as a set of territorial contexts in which significant forms of anthropisation are detectable, such as:

• ordinary public roads (roads where traffic is guaranteed even during periods of snowfall);

• other public transport infrastructure (e.g. railways and cableways);

• urbanised areas (built-up or partially built-up areas, industrial, commercial and tourist settlements) served by ordinary public roads;

• individual permanently inhabited buildings (even if not served by ordinary public roads);

• ski areas as defined in Article 2 of Law No. 363 of 24 December 2003 (areas specifically managed for winter sports and recreational activities) – ski areas include “managed ski areas”, i.e. 'all infrastructure, facilities, slopes (including connecting routes not classified as slopes), with related facilities and other specialised areas that together offer users a comprehensive service for the practice of winter sports/recreational activities on snow-covered terrain'

Actually is not possibile to make detailed avalanches forecast in time and space, as it is difficult to accurately detect the conditions of the snowpack at every point on each slope; the slopes themselves, in fact, are characterised by considerable variability in terms of substrate type and characteristics, steepness and conformation. However, knowledge of the characteristics of the snowpack and weather forecasts, combined with an examination of the phenomena occurring in snow-covered areas, make it possible to determine the large-scale state of avalanche phenomena and thus assess the tendency for them to form and the danger associated with such phenomena.

For these reasons, the colour code assessment for avalanches in the forecast phase is carried out exclusively on the basis of the Meteomont Bulletin forecasts, which describe particularly critical snow conditions on a regional synoptic scale, without going into local details of individual slopes. The assessment is carried out during the periods of the year when the Meteomont Service is active, which, due to the climatic characteristics of our regional territory, is generally from November to April.

The reference for assessing the degree of avalanche danger in the Meteomont Bulletin is the EAWS (European Avalanche Warning Service) scale, which assesses the stability of the snowpack associated with the probability of avalanches, assigning increasing degrees of danger from 1 to 5.

EAWS scale for avalanches

EAWS HAZARD SCALE		SNOWPACK STABILTY	PROBABILITY OF AVALANCHE DETACHMENT
	**1 LOW**	The snowpack is generally well consolidated and stable.	Detachment is generally only possible with heavy overload on very few points on extremely steep terrain. Only small and medium-sized spontaneous avalanches are possible.
	**2 MODERATE**	The snowpack is only moderately consolidated on some steep slopes, but is generally well consolidated elsewhere.	Detachment is possible even with a slight overload, especially on the steep slopes indicated. Occasionally, large spontaneous avalanches are possible and, in individual cases, even very large ones.
	**3 CONSIDERABLE**	The snowpack is moderately to weakly consolidated on many steep slopes.	Detachment is possible even with a slight overload, especially on the steep slopes indicated. Occasionally, large spontaneous avalanches are possible and, in individual cases, even very large ones.
	**4 HIGH**	The snowpack is weakly consolidated on most steep slopes.	Detachment is likely even with a slight overload on many steep slopes. Numerous large and often very large spontaneous avalanches are to be expected at times.
	5 VERY HIGH	The snowpack is generally poorly consolidated and mostly unstable.	Numerous very large spontaneous avalanches and often even avalanches of extreme dimensions are to be expected, even on moderately steep terrain.

The colour coding for avalanches in the forecast phase is carried out for the avalanche warning areas identified in the region. It is divided into four levels from green to red and is based on the degrees of danger predicted in the Meteomont Bulletin, according to a direct association between colour code and degree of danger.

The correspondence between the EAWS danger levels, the colour codes and the related reference event scenarios, with the possible effects and consequent damage, are summarised in the following table.

<table>
<tr><th colspan="4">AVALANCHES</th></tr>
<tr><th>COLOUR CODE</th><th colspan="2">THRESOLDS</th><th>EVENT SCENARIO</th><th>POSSIBLE EFFECTS AND DAMAGE</th></tr>
<tr><td rowspan="3">GREEN</td><td>1
Low</td><td>  </td><td rowspan="3">No significant avalanches in populated areas.

At most, there may be isolated avalanches of low magnitude that are difficult to predict.</td><td rowspan="3">Any specific damage limited to particularly vulnerable contexts.</td></tr>
<tr><td>From Low 1 to Moderate 2</td><td>  </td></tr>
<tr><td>2
Moderate</td><td>  </td></tr>
<tr><td rowspan="2">YELLOW</td><td>From Moderate 2 to Considerable 3</td><td>  </td><td rowspan="2">Avalanches expected in populated areas may affect localised sites that are habitually exposed to avalanche danger.

These are mostly frequent events of medium magnitude and are normally known to the local community.</td><td rowspan="2">Occasional danger to human safety.

The affected assets may suffer minor damage with effects such as:

- temporary interruption of traffic;

- temporary suspension of services.

More significant damage is possible locally in the most vulnerable contexts.</td></tr>
<tr><td>3
Considerable</td><td>  </td></tr>
<tr><td rowspan="2">ORANGE</td><td>From Considerable 3 to High 4</td><td>  </td><td rowspan="2">The expected avalanches may affect populated areas extensively, even in locations not usually exposed to avalanche danger.

These are mostly events of medium or high magnitude.</td><td rowspan="2">Danger to human safety.

The affected property may suffer moderate damage with effects such as:
- damage to buildings;
- temporary isolation of limited areas;
- disruption to traffic;
- temporary restrictions on the use of equipped ski areas as defined in Article 2 of Law No. 363 of 24 December 2003;
- suspension of services.

More significant damage is possible in the most vulnerable contexts.</td></tr>
<tr><td>4 High</td><td>  </td></tr>
</table>

AVALANCHES				
COLOUR CODE	**THRESOLDS**		**EVENT SCENARIO**	**POSSIBLE EFFECTS AND DAMAGE**
RED	**5 Very High**		The expected avalanches may extensively affect populated areas, even in locations not usually exposed to avalanche danger. These are mostly high or very high magnitude events, which may even exceed the maximum historical dimensions.	Serious danger to human safety. Possible extensive damage to property with effects such as: - serious damage to or destruction of buildings; - isolation of even relatively large areas; - prolonged disruption to transport networks; - prolonged restrictions on the use of equipped ski areas as defined in Article 2 of Law No. 363 of 24 December 2003; - prolonged suspension of services; - difficulties for rescue and supply activities.

The event scenarios described in this table refer to possible avalanche risk situations in anthropised areas; the avalanches expected in these areas are those that can be predicted based on the snow conditions in the territory. To assess avalanche danger outside these contexts (typically for excursions in mountainous areas), it is necessary to refer to the Snow and Avalanche Bulletin (Meteomont Bulletin).

Avalanches, even those of small magnitude, can have a serious impact on people's safety, even causing death; the mere occurrence of an avalanche is therefore potentially lethal for those caught up in it, regardless of the magnitude of the avalanche itself.

The term "transition" indicates a change in the degree of danger over time, the transition from one degree to another during the course of the day.