

From time to time, the City and Borough of Juneau is asked whether current snow conditions warrant removal of snow from roofs to avoid structural collapse.

FACTORS: There are a number of variables which make a borough-wide declaration of snow hazard impossible. Each individual building, building location and part of a building has slightly different conditions that may be totally different from its next-door neighbor. Due to such variations, the City does not attempt to collect or keep records on snowfall or advise people when they should remove snow.

Some of the factors affecting the snow load on your roof are pitch of roof, roofing material (metal roofing often sheds snow), amount of heat loss (which can result in partial melting of snow), micro- climates, recent rainfall and wind which can either cause additional snow build-up or blow the snow away. Snow depth is not a good indication of weight due to variations in the moisture content of falling snow and differences in density of fallen snow caused by varying air temperatures. The moisture content of snow can range from about 1% to about 33% so snow can weigh from about 1 pound per cubic foot to over 21 pounds per cubic foot.

CODES: Recent construction following current building code requirements has been designed to carry 50 pounds per square foot (lb/sf) snow load while previous building codes before 1991 allowed 40 lb/sf. Many older buildings (constructed before 1960) were built before there was a building code adopted in Juneau. An active inspection program was not in place until about 1980. Remember, if you have an older home, it has probably withstood many years of relatively high snow loads and should continue to do so unless it has lost some of its structural capacity. Mobile home snow loads are federally regulated and may be as low as 20 lb/sf. Accessory buildings and open decks are sometimes allowed to be built without building permits and may have very low snow load resistance.

Building code design requirements include a “factor of safety” which means that, if built to building code standards, your structure should be able to withstand more weight than the 40 or 50 lb/sf it was designed for. Also, wood construction is notably flexible and tends to deflect considerably before failing. A good indication that you have extra load on your roof is when you experience difficulty opening doors and windows.

LOAD: The only truly accurate way to determine your snow load is to dig out a one foot square column of snow from the roof deck to the top of the snow at the area in question, put it in a plastic bag and weigh it. This is often not practical or recommended (see DANGERS below). An estimate can be made by using similar depth snow from the ground or a deck. A roof will generally have less snow accumulation due to melting, sliding, or blowing.

DANGERS: Please be aware of the potential dangers of shoveling or raking snow from a roof. Besides the potential damage to the roofing materials and structure, there are such factors as a person sliding off the roof, falling off a ladder, overexerting themselves, or injury from snow sliding on top of them.

SUMMARY: In summary, the City and Borough of Juneau does not make recommendations on when to remove snow from roofs. It is up to the individual property owner to consider the benefits and dangers of snow removal and decide their own course of action. Remember that, as a rule of thumb, saturated snow weighs about 20 pounds per cubic foot and then consider the depth and relative moisture content of your snow and the capacity of your roof structure in making your decision to remove snow or not.