

Practice Note: Snow Load Removal from Existing Roofs

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Because there have recently been incidents of damage and/or collapse of existing roofs in Manitoba attributable to improper practices in the removal of snow from roofs, the Association's Safety Committee provides the following background information and some considerations to be taken into account when professional engineers are providing services related to the snow load removal from existing roofs.

Background

Building codes prescribe minimum roof design snow loads which are based on a probability of occurrence. In some years, such as the winter of 1996-97, snow accumulations can result in loadings which exceed the code requirements. Additionally, recent research has shown that large roofs, and roofs adjacent to large roofs, are prone to snow load accumulations greater than previously contemplated in earlier editions of the National Building Code of Canada (NBC). The 1995 edition of the NBC now incorporates increased snow accumulation factors.

Building owners often undertake removal of snow from roofs but do not routinely engage professional engineer services to plan and advise on the removal operations. When the professional engineer is engaged to provide such services there are considerations to be taken into account.

Some considerations to be taken into account:

- When equipment is to be used in the snow removal process, the loading effects of the equipment including workers must be considered.
- Snow load should be removed in a fashion to prevent overloading supporting members and damaging roof membranes.
- The capacity of existing roof structure to withstand the current and additionally imposed loads should be investigated.
- Care must be taken to ensure that the removal process does not result in unacceptable accumulations in other areas of the roof.
- Depending upon the ability of roof to withstand the accumulated snow load and additional loads imposed during the removal process, a recommendation to limit occupancy may be required. If there is a recommendation to restrict

the use of all or part of the building, the Building Authority Having Jurisdiction and Workplace Health and Safety should be notified.

- In instances, where loading is judged to be excessive, or the capacity of the roof is inadequate, the installation of temporary shoring and/or permanent reinforcing may be required. (The building code states that it is not acceptable to rely on snow load removal to justify the adequacy of a substandard roof.)
- The professional engineer should ensure that the person in charge of the removal of the snow understands the specified removal procedure. Monitoring of the removal operations may also be appropriate.