CANADA

BUILDING NOTE

ANALYZED

COMPUTED MAXIMUM SNOW LOADS

by

M.K. Thomas and D.W. Boyd

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The maximum snow load can be defined as the weight per unit area of the heaviest accumulation of precipitation on a horizontal unheated surface that will occur, on the average, once in a given number of years. In practice, this load must be estimated from existing meteorological records. These records for Canada include the daily or weekly depths of snow on the ground since about 1941, and the daily rainfall amounts, but do not at present include any measurements of weights of actual snow on roofs. A survey has been started by the Division of Building Research to measure depths and densities of snow on roofs but usable results will not be available for a few years.

For the time being, therefore, it is assumed that the snow load on a horizontal unheated roof is the same as the load on the ground. The computed maximum snow loads listed in this note are based on the maximum reported depth of snow on the ground in the ten years from 1941 to 1950 whenever these records are available. This snow is assumed to have a specific gravity of 0.2. To the weight of the snow is added the weight of the maximum 24-hour rainfall expected in the two- or three-month period when maximum snow depths are likely.

Complete snow depth and rainfall records are not available for all the stations listed; the missing values have been estimated from whatever records could be obtained. The final computed values have been rounded off to the nearest five pounds per square foot.

A more complete discussion of the computation of snow loads for Canada, and a comparison of the computed loads with those in a number of municipal building codes are included in a paper by Thomas (1). The chart of computed maximum snow loads in Thomas's paper is also published in the National Building Code (2) and in the Climatological Atlas of Canada (3). In some cases it will be found that the values listed in this note do not agree precisely with the chart. Discrepancies arise because it is not always possible to chart local variations, especially in areas where there are great variations in snow loads across short distances.

Records for stations not listed can be obtained by writing to the Secretary, Associate Committee on the National Building Code, National Research Council, Ottawa.

References

(1) Thomas, M.K. A method of computing maximum snow loads. Reprint from Engineering Journal, vol. 38, no. 2, February 1955. National Research Council of Canada, Division of Building Research, NRC 3559, March 1955.

(2) National Research Council of Canada, Associate Committee on the National Building Code. National Building Code of Canada 1953.

(3) Thomas, M.K. Climatological atlas of Canada. Prepared by M.K. Thomas, December 1953. (A joint publication of the Meteorological Division, Department of Transport and the Division of Building Research, National Research Council of Canada), NRC 3151, 253p.

COMPUTED MAXIMUM SNOW LOAD

(lb. per sq. ft.)

BRITISH COLUMBIA

Aldergrove	35	Matsqui	35
Castlegar	60	New Westminster	30
Chilliwack	40	Penticton	40
Comox	45	Prince George	50
Estevan Point	25	Prince Rupert	30
Fort Nelson	40	Swift River	45
Holberg	30	Tofino	25
Hope	50	Vancouver	30
Kamloops	40	Victoria	30
Masset	30	Warfield	50

ALBERTA

Calgary	25	McMurray	25
Claresholm	25	Medicine Hat	25
Cold Lake	30	Namao	25
Edmonton	25	Red Deer	30
Grande Prairie	40	Vegreville	25
Lethbridge	25	Wainwright	30

SASKATCHEWAN

Dundurn	35	Regina	30
Moose Jaw	30	Saskatoon	35
Prince Albert	35	Swift Current	25

MANITOBA

Beausejour	40	Portage la Prairie	35
Brandon	35	Rivers	35
Churchill	55	St. Vital	35
Flin Flon	40	Shilo Camp	35
Gimli	35	The Pas	40
Macdonald	35	Winnipeg	35

ONTARIO

Angus	60	Belleville	50
Armstrong	55	Blind River	50
Aurora	45	Brantford	35
Barrie	60	Camp Borden	60
Barriefield	55	Centralia	50

ONTARIO (Cont'd)

Chatham	30	Pamour	65
Clinton	55	Petawawa	50
Cobourg	45	Peterborough	60
Dona	55	Picton	50
Downsview	35	Port Arthur	55
Edgar	60	Port Maitland	40
Falconbridge	40	Rockcliffe	50
Fort William	55	St. Catherines	35
Foymount	50	St. Thomas	35
Gloucester	50	Sarnia	30
Guelph	40	Sault Ste. Marie	55
Hamilton	35	Simcoe	35
Kapuskasing	60	Sioux Lookout	50
Kingston	55	Stratford	50
Kitchener	40	Sudbury	40
London	40	Timmins	65
Malton	40	Toronto	35
Niagara Falls	35	Trenton	50
North Bay	55	Welland	40
Oshawa	35	Weston	35
Ottawa	50	Windsor	30
Owen Sound	65	Woodstock	40
Pagwa	60		

QUEBEC

Arvida	55	Port Harrison	50
Aylmer	50	Quebec City	50
Bagotville	55	St. Felicien	65
Bouchard	50	St. Hubert	50
Casey	70	St. Johns	50
Clarke City	80	St. Jovite	60
Dorval	50	Senneterre	60
Hull	50	Seven Islands	80
Knob Lake	90	Sherbrooke	55
Lachine	50	Three Rivers	60
Mont Joli	65	Valcartier	60
Montreal	50	Val d'Or	65
Outremont	50	Verdun	50
Parent	70		

NEW BRUNSWICK

Campbellton	75	McGivney	70
Chatham	70	Moncton	60
Fredericton	65	Renous	75
Gagetown	60	Saint John	50

NOVA SCOTIA

Cornwallis	40	Halifax	40
Dartmouth	40	Newport	40
Debert	50	Sydney	40
Digby	40	Windsor	40
Greenwood	40	Yarmouth	35

PRINCE EDWARD ISLAND

Charlottetown	60	Summerside	60

NEWFOUNDLAND

Corner Brook	65	St. John's	50
Gander	45	Torbay	50
Goose	90		

YUKON TERRITORIES

Dawson	50	Whitehorse	35
Snag	50		

NORTHWEST TERRITORIES

Aklavik	35	Frobisher	45
Cambridge Bay	25	Padloping Island	50
Coral Harbour	50	Resolute	25
Fort Norman	50	Yellowknife	35