Climatic and Seismic Values for Building Design in Burnaby

The purpose of this information guide is to advise that the climatic and seismic data for the design of buildings, structures or part thereof in the City of Burnaby shall be those listed on Page 3 or Page 4 of this information guide.

"The information contained within this guide is for convenience only and does not serve to substitute or supersede applicable City Bylaws, governing Provincial / Federal Codes, and laws. Any references to Bylaws, Codes and laws pertain to those effective at the time of this guide's creation or revision. If the date on this guide exceeds three (3) years, the information contained may be outdated- in such circumstance, refer to the current Bylaws, Codes and laws. Building Owners are responsible for ensuring that any existing or proposed construction, and other works, comply with all applicable Bylaws, Codes and laws."

Other Information Related to this Topic

- In-Stream Protection for Seismic Design and Adaptable Unit Provisions

Application

The climatic and seismic values listed in Division B, Appendix C of the BC Building Code (BCBC) apply generally to the design of all buildings in the City of Burnaby. Based on Ministerial Order No. BA 2023 10, Division B Subsection 4.1.8. (earthquake load and effects), Section 9.23 (wood-frame construction), and Appendix C (climatic and seismic information) shall comply with the:

- 2018 BCBC or 2024 BCBC for building permit applications made prior to March 10, 2025, or
- 2024 BCBC for building permit applications made on or after March 10, 2025.

More information can be found on Building and Safety Standards Branch's Technical Bulletin webpage (Relevant bulletins: B24-01-R, B24-02-R, B24-10-R). Also refer to our "In-Stream Protection for Seismic Design and Adaptable Unit Provisions" information guide for more clarification regarding the "in-stream protection" process.

Climatic Data

One set of the data collected from an observing site located near Simon Fraser University (SFU) at an elevation of 330 m can be applied to the SFU area. The other set of data collected from another observing site located at Burnaby Mountain Terminal at an elevation of 137 m can be applied to all areas of Burnaby other than the SFU area.

When Storm Water Management is a requirement of development approval, the City's Engineering Department **may** require different rainfall duration and intensity criteria than those listed below.

Site specific climatic design data can be obtained by contacting the Atmospheric Environmental Service, Environment Canada at (416) 739-4365. The information on seismic hazard can also be obtained at
http://www.earthquakescanada.nrcan.gc.ca/index-en.php

Appendix C Climatic and Seismic Values from 2024 BCBC

	CLIMATIC and SEISMIC VALUES	SFU Elev:330 m	General Elev:137 m
1.	2.5% January Design Temperature	-7 °C	-7 °C
2.	1% January Design Temperature	-9 °C	-9°C
3.	2.5% July Design Dry-Bulb Temperature	25°C	25°C
4.	2.5% July Design Wet-Bulb Temperature	17 °C	17°C
5.	Annual Total Degree Days Below 18 °C	3100	2735
6.	15 Min. Rainfall	10 mm	10 mm
7.	One Day Rainfall (1/50)	150 mm	140 mm
8.	Annual Rain	1850 mm	1840 mm
9.	Moisture Index	1.9	1.92
10.	Annual Total Precipitation	1950 mm	1900 mm
11.	Driving Rain & Wind Pressure (1/5)	160 Pa (3.4 psf)	160 Pa (3.4 psf)
12.	Ground Snow Load, Ss (1/50)	2.9 kPa (60.6 psf)	2.7 kPa (56.4 psf)
13.	Associate Rain Load, Sr (1/50)	0.7 kPa (14.6 psf)	0.4 kPa (8.4 psf)
14.	Hourly Wind Pressures: Probability 1/10…… Probability 1/50……	 0.35 kPa (7.3 psf) 0.47 kPa (9.8 psf)	 0.36 kPa (7.5 psf) 0.47 kPa (9.8 psf)
15.	For Part 4 Obtain the seismic hazard values from the 2020 NBCC Seismic Hazard Tool: https://www.earthquakescanada.nrcan.gc.ca/hazard-alea/interpolat/nbc2020-cnb2020-en.php		
16.	For Part 9 Seismic Design Parameter, S_{max} According to Site Class: Site Class A…… Site Class B…… Site Class C…… Site Class D…… Site Class E or Unknown Site Class……	 0.416 0.513 0.806 1.108 1.14	

Appendix C Climatic and Seismic Values from 2018 BCBC

	CLIMATIC and SEISMIC VALUES	SFU Elev:330 m	General Elev:137 m
1.	2.5% January Design Temperature	-7 °C	-7 °C
2.	1% January Design Temperature	-9 °C	-9°C
3.	2.5% July Design Dry-Bulb Temperature	25°C	25°C
4.	2.5% July Design Wet-Bulb Temperature	17 °C	17°C
5.	Annual Total Degree Days Below 18 °C	3100	2735
6.	15 Min. Rainfall	10 mm	10 mm
7.	One Day Rainfall (1/50)	150 mm	140 mm
8.	Annual Rain	1850 mm	1840 mm
9.	Moisture Index	1.93	1.92
10.	Annual Total Precipitation	1950 mm	1900 mm
11.	Driving Rain & Wind Pressure (1/5)	160 Pa (3.4 psf)	160 Pa (3.4 psf)
12.	Ground Snow Load, Ss (1/50)	2.9 kPa (60.6 psf)	2.7 kPa (56.4 psf)
13.	Associate Rain Load, Sr (1/50)	0.7 kPa (14.6 psf)	0.4 kPa (8.4 psf)
14.	Hourly Wind Pressures: Probability 1/10…… Probability 1/50……	 0.36 kPa (7.5 psf) 0.47 kPa (9.8 psf)	 0.36 kPa (7.5 psf) 0.47 kPa (9.8 psf)
15.	Seismic Values: Sa (0.2) …… Sa (0.5) …… Sa (1.0) …… Sa (2.0) …… Sa (5.0) …… Sa (10.0) …… PGA…… PGV……	 <u>0.768</u> <u>0.673</u> <u>0.386</u> <u>0.236</u> <u>0.076</u> <u>0.027</u> <u>0.333</u> <u>0.500</u>	 <u>0.768</u> <u>0.673</u> <u>0.386</u> <u>0.236</u> <u>0.076</u> <u>0.027</u> <u>0.333</u> <u>0.500</u>

For More Information

If you have any question, please contact the Building Division at 604-294-7130 or permits@burnaby.ca.