Maple Ridge

DEVELOPMENT, BUILDINGS AND LICENSING
Electrical Inspections Branch

Electrical Load Calculation for Multi-Family Dwellings with or without Secondary Suites or Lock-Off Units

Parcel Address: _____

Please complete the appropriate table cells and check boxes accordingly. Review the load summary table, footnotes and figure attached to this form. Revised Dec 12, 2024

CE Code Rule 8-200 2)	A	B	C	D
Rule 8-200 1) a)	One-Family Dwelling Principal	Secondary Suite or Lock-off Unit	One-Family Dwelling Principal	Secondary Suite or Lock-off Unit
Rule 8-110, total living area of single dwelling	m²	The total living area and basic load for a one-family dwelling to include secondary suite or lock-off unit	m²	The total living area and basic load for a one-family dwelling to include secondary suite or lock-off unit
i) a basic load of 5000 W for the first 90 m² or less of living area; plus				
ii) 1000 W for each 90 m² or portion thereof; plus				
iii) any electric space-heating loads using the demand factors from Rule 62-118. Baseboard heat: 100% of the first 10kW, plus 75% for any amount over 10 kW. Electric thermal storage heating system, duct heater, or electric furnace: 100%; plus	Baseboard Heaters: Other:	Baseboard Heaters: Other:	Baseboard Heaters: Other:	Baseboard Heaters: Other:
any air-conditioning loads with demand factor of 100%, subject to Rule 8-106 3); or	See footnote (a)	See footnote (a)	See footnote (a)	See footnote (a)
any heat pump motor loads with demand factors as permitted in Section 28; plus				
iv) any electric range load: 6000 W for a single range plus 40% of any amount by which the rating of the range exceeds 12 kW; plus		See load summary table		See load summary table
v) any electric ***tankless*** water heaters or electric water heaters for steamers, swimming pools, hot tubs, or spas with a demand factor of 100%; plus				
vi) except as permitted by Rule 8-106 11), any electric vehicle supply equipment loads with a demand factor of 100%; plus	See footnote (b)	See footnote (b)	See footnote (b)	See footnote (b)
vii) any loads provided for that have a rating in excess of 1500 W, 25% of the rating of each load, if an electric range has been provided for, or 100% of the combined load up to 6000 W, plus 25% of the combined load that exceeds 6000 W, if an electric range has not been provided for.	Dryer: HWT: Other: Total:	Dryer: HWT: Other: Total:	Dryer: HWT: Other: Total:	Dryer: HWT: Other: Total:
Suite or Lock-off loads from column B or D ADDED to column A or C when unmetered	From B	Add total unmetered load below to column A	From D	Add total unmetered load below to column A
Total Calculated Loads Add unmetered suite or Lock-off loads to main units	W	W	W	W
Main Circuit Breaker – Amps (No greater than calculated) See footnote (c)	100 ☐ 125 ☐ 150 ☐ 200 ☐ Other ☐	60 ☐ 100 ☐ See load summary table and footnote (c) Other ☐	100 ☐ 125 ☐ 150 ☐ 200 ☐ Other ☐	60 ☐ 100 ☐ See Load summary table and footnote (c) Other ☐
Type & size of service and/or feeder AWG / kcmil Cu / Al				

Calculated load for the main consumer's service supplying the dwelling units, plus service installation details

Meters	1	100% heaviest load: exclude any electric space heating, air-conditioning/heat pump		
	2	65% next unit load: exclude any electric space heating, air-conditioning/heat pump		
	3	65% next unit load: exclude any electric space heating, air-conditioning/heat pump		
	4	40% next unit load: exclude any electric space heating, air-conditioning/heat pump		
Footnotes		Baseboard heating load, 100% of the first 10kW plus 75% for any amount over 10 kW:		
	(a)	Electric space-heating loads: As per Section 62		
		Air-conditioning loads: Subject to Rule 8-106 3)		
		Heat Pump Motor Loads: Subject to Rule 8-106 3)		
	(b)	EVEMS deduction - as approved by the City Electrician only. Identify specific deducted loads; equal or greater. Submit a detailed proposal.	minus	

Amps: **Total Watts:**

Service Characteristics: Overhead ☐ Underground ☐

Type & Size of service conductors: AWG/kcmil cu/Al

Main Consumer's Service: 200 A ☐ 400 A ☐ Other: See footnote (d)

Voltage: Phase: # of Electric Meters:

*** FSR to obtain BC Hydro acceptance PRIOR to permit application ***

DECLARATION: I declare that the information contained within this Document is correct. **(Inaccuracies may cause permit delays)**

*** I have confirmed the supply service electrical characteristics, service equipment and pole location with BC Hydro. See footnote (e)

***** I have confirmed above data with BC Hydro acceptance** ☐ **Yes**

This form captures the essence of the CE Code requirements. If deviating from the prescriptive CE Code requirements, select here. If yes, contact the City of Maple Ridge electrical department for variance information at 604-463-9581. ☐ Yes

Electrical Contractor Name & License Number _____ Email _____ Phone Number _____

FSR Name & Registration Number _____ Signature _____ Date _____

Load summary table for the purpose of CE Code Rule 8-200 (2/3/4 electric meters)

<table>
<tr><td rowspan="3">Descriptions</td><td colspan="6">Duplex with Secondary Suites or Lock-Off Units</td></tr>
<tr><td colspan="2">Principal Dwelling</td><td colspan="2">Secondary Suite or Lock-off Unit</td><td colspan="2">Principal Dwelling</td><td colspan="2">Secondary Suite or Lock-off Unit</td></tr>
<tr><td>Metered</td><td>Unmetered</td><td>Metered</td><td>Metered</td><td>Unmetered</td><td>Metered</td></tr>
<tr><td>Basic load</td><td colspan="2">as per 8-200 1) a) i) ii)</td><td>not required</td><td>not required</td><td colspan="2">as per 8-200 1) a) i) ii)</td><td>not required</td><td>not required</td></tr>
<tr><td>EVEMS – service, branch circuit
See footnote (b)</td><td colspan="8">Installation of EVEMS is subject to CMR Electrical Safety Officer approval.</td></tr>
<tr><td>Interlocks - electric space-heating and AC loads - footnote (a)</td><td colspan="8">permitted by 8-106 3)</td></tr>
<tr><td>Interlocks - electric dryers, EVSE, any non-essential loads
See footnote (f)</td><td colspan="8">permitted by 8-106 2)</td></tr>
<tr><td rowspan="4">Electric range</td><td colspan="2">6000 W plus 40% of rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td>use a 25% demand factor for the subsequent range and other loads; as per 8-200 1) a) vii) A)</td><td>6000 W plus 40% rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td colspan="2">6000 W plus 40% of rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td>use a 25% demand factor for the subsequent range and other loads; as per 8-200 1) a) vii) A)</td><td>6000 W plus 40% rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td></tr>
<tr><td colspan="2">no electric range, gas range provided: use a 25% demand factor for each load (i.e. dryer); as per 8-200 1) a) vii) A)</td><td>6000 W plus 40% of rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td rowspan="3">no electric range, gas range provided: any provided loads as per 8-200 1) a) vii) B)</td><td colspan="2">no electric range, gas range provided: use a 25% demand factor for each load (i.e. dryer); as per 8-200 1) a) vii) A)</td><td>6000 W plus 40% of rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td rowspan="3">no electric range, gas range provided: any provided loads as per 8-200 1) a) vii) B)</td></tr>
<tr><td colspan="2">6000 W plus 40% of rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td>no electric range, gas range provided: use a 25% demand factor for each load (i.e. dryer); as per 8-200 1) a) vii) A)</td><td colspan="2">6000 W plus 40% of rating exceeds 12 kW; as per 8-200 1) a) iv); plus vii) A)</td><td>no electric range, gas range provided: use a 25% demand factor for each load (i.e. dryer); as per 8-200 1) a) vii) A)</td></tr>
<tr><td colspan="3">no electric ranges, gas ranges provided: any provided loads (i.e. dryers); as per 8-200 1) a) vii) B).
100% of the combined load up to 6000 W, plus 25% of the combined load that exceeds 6000 W</td><td colspan="3">no electric ranges, gas ranges provided: any provided loads (i.e. dryers); as per 8-200 1) a) vii) B).
100% of the combined load up to 6000 W, plus 25% of the combined load that exceeds 6000 W</td></tr>
<tr><td rowspan="3">Ampere rating of main circuit breaker, panelboard
See footnote (c)</td><td colspan="2">oversized overcurrent device is not permitted</td><td>shall be the greater of the calculated load or 60 A</td><td>shall be the greater of the calculated load or 60 A</td><td colspan="2">oversized overcurrent device is not permitted</td><td>shall be the greater of the calculated load or 60 A</td><td>shall be the greater of the calculated load or 60 A</td></tr>
<tr><td colspan="8">A panelboard shall be installed in every secondary suite or lock off unit.</td></tr>
<tr><td colspan="8">The ampere rating of services, feeders and main circuit breakers must be based on the calculated loads connected to these services, feeders, or main circuit breakers. If the calculated current value does not correspond to a standard rating of circuit breaker, the next higher rating is permitted. Except as permitted by this table, oversized overcurrent devices are not permitted.</td></tr>
</table>

Footnotes: (Also see table above)

(a) CE Code Rule 8-200 1) a) iii) specifies the use of demand factor permitted by Rule 8-106 3), for the purpose of these Rules, interlocks must be installed for the operation of electric space-heating and air-conditioning loads, so that only one can be used at a time, and the load providing the greater demand shall be used to determine the calculated load.

(b) Two or more EV chargers (EVSE loads) may be supplied by the same branch circuit connected to an electric vehicle energy management system (EVEMS) provided that the EVEMS is installed in accordance with Rule 86-300 and Rule 8-500.

It is important to note that

- Rule 8-200 1) a) vi) does not specify requirements where EVSE loads are controlled by an EVEMS in accordance with Rule 8-106 10) or Rule 86-300 2).
- So far, a dedicated certification / product standard does not exist for the electrical equipment comprising EVEMS.

- If the EVEMS is intended to represent a complete system containing pieces of approved equipment, such system standard also does not exist.
- EVEMS must be capable to meet all relevant requirements of Subrule 8-106 10) or Subrule 8-106 11) of the CE Code.

Installation of EVEMS is subject to CMR Electrical Safety Officer approval.

(c) The ampere rating of services, feeders and main circuit breakers must be based on the calculated loads connected to these services, feeders, or main circuit breakers. If the calculated current value does not correspond to a standard rating of circuit breaker, the next higher rating is permitted.
Except as permitted by the table above, oversized overcurrent devices are not permitted.

(d) BC Hydro should be consulted on the number of meters, and the number and location of supply services. (BULLETIN 2020-007-EL)

(e) CE Code Rule 8-200 does not specify the use of demand factor permitted by Rule 8-106 2), for the purpose of these Rules, interlocks must not be installed for any essential loads.

Essential loads	Non-essential loads
electric hot water heater/tank, electric space-heating except as permitted by 8-106 3), any loads as may be prescribed by CMR Electrical Safety Officer	electric range, dryer, sauna heater, water heater for steamer, swimming pool, hot tub, or spa, EVSE, AC