

# Electrical Load Calculation Residential

## Master Requirement ELE 101

Building Department: 604-990-2480, [building@dnv.org](mailto:building@dnv.org)

Note: For Single Family dwellings or Single Family dwellings with a secondary suite or Single-Family dwelling with a secondary suite with a coach house, all applicable lines must be filled in. For multifamily dwellings, additional information may be requested by your electrical inspector.

### Purpose

Prior to the issuance of an electrical permit where one or more of the following is being installed, a Load Calculation sheet must be completed by the Electrical Contractor and provided to the Electrical Department for approval:

- Air Conditioner
- Heat Pump
- Sauna
- Car Charger
- Hot tub
- Any new kitchen appliance above 20A

### Permit Details

Address: \_\_\_\_\_

Electrical Permit Number: \_\_\_\_\_ Building Permit Number: \_\_\_\_\_

Electrical Contractor: \_\_\_\_\_

### Service Details

**Service Orientation:**    ☐ Overhead    ☐ Underground

**Existing Service Characteristics:** Volts: \_\_\_\_\_ Amps: \_\_\_\_\_ Phase: ☐ 1 ☐ 3

**Upgrading Service**    ☐ Yes    ☐ No    If yes \_\_\_\_\_

**New Service Characteristics:**    Volts \_\_\_\_\_ Amps \_\_\_\_\_

#### Dwelling 1 Unit Size

5000 watts for the first 90 m<sup>2</sup>

1000 watts for each 90 m<sup>2</sup> or portion thereof

Electric space heating loads first 10,000 W at 100%; balance at 75%

Section 1	
1	m <sup>2</sup>
2	W
3	W
4	W

Electric range provided for as follows:

6000 watts for a single range or

Separate cooking equipment taken at 6000 watts plus 40% of any amount that exceeds 12,000 kW.

List cooking equipment \_\_\_\_\_

Air conditioning / Heat Pump (CEC 8-200 (a)(iii)) at 100%

Tankless water heater or electric pool/spa/hot tub water heater at 100%

Electric vehicle charging equipment (CEC 8-200 (a)(vi)) at 100%

Specify Load monitoring used if applicable \_\_\_\_\_

Demand sharing if applicable – specify the priority load \_\_\_\_\_

Any additional loads (CEC 8-200 (a)(vii)), dryers, etc. at 25%

List Loads \_\_\_\_\_

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.

**\*\* (CEC 8-200(1)) Greater of A or B including all electric heat, AC (heat pump) and EV loads TOTAL KW**

**Greater of A or B excluding any EV loads, electric space heating loads and AC loads (heat pumps) to be carried forward for more than one dwelling TOTAL KW**

5	W
6	W
7	W
8	W
9	W
10	
11	W

Section 2

**Dwelling 2 Unit Size 8-200 (2)**

3500 watts for the first 45 m<sup>2</sup>

1500 watts for the second 45 m<sup>2</sup> or portion thereof

1000 watts for each 90 m<sup>2</sup> or portion thereof

Electric space heating loads first 10,000 W at 100%, balance at 75%

Electric range provided for as follows:

6000 watts for a single range or

Separate cooking equipment taken at 6000 watts plus 40% of any amount that exceeds 12,000 kW.

Air conditioning / Heat Pump (CE 8 200 (a)(iii)) at 100%

Any additional loads (CEC 8-200 (a)(vii)), dryers, etc. at 25%

List Loads \_\_\_\_\_

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.

**\*\* (CEC 8-200(1)) Greater of A or B including all electric heat, AC (heat pump) and EV loads TOTAL KW**

**Greater of A or B excluding any EV loads, electric space heating loads and AC loads (heat pumps) to be carried forward for more than one dwelling TOTAL KW**

1	m <sup>2</sup>
2	W
3	W
4	W
5	W
6	W
7	W
8	W
9	W
10	W

**Dwelling 3 (Coach house)**

3500 watts for the first 45 m<sup>2</sup>

1500 watts for the second 45 m<sup>2</sup> or portion thereof

1000 watts for each 90 m<sup>2</sup> or portion thereof

Electric space heating loads first 10,000 W at 100%, balance at 75%

Electric range provided for as follows:

6000 watts for a single range or

Separate cooking equipment taken at 6000 watts plus 40% of any amount that exceeds 12,000 kW.

Air conditioning / Heat Pump (CE 8 200 (a)(iii)) at 100%

Any additional loads (CEC 8-200 (a)(vii)), dryers, etc. at 25%

List Loads \_\_\_\_\_

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.

**\*\* (CEC 8-200(1)) Greater of A or B including all electric heat, AC (heat pump) and EV loads TOTAL KW**

**Greater of A or B excluding any EV loads, electric space heating loads and AC loads (heat pumps) to be carried forward for more than one dwelling TOTAL KW**

Section 3

1	
2	W
3	W
4	W
5	W
6	W
7	W
8	W

Section 4

**100% of the Calculated Load in the Unit Having the Heaviest Load excluding electric heat, AC (heat pump) and EV charging**

**Plus 65% of the Sum of the Calculated Load in the Next Unit excluding electric heat, AC (heat pump) and EV charging**

**Plus 65% of the Sum of the Calculated Load in the Dwelling 3 (coach house) Unit excluding electric heat, AC (heat pump) and EV charging**

Total Electric space heating loads (as permitted in CEC Section 62) from both units. First 10,000 Watts at 100% of electric base board heat (CEC Section 62)

The balance of the connected heating load at 75% (CEC Section 62)

The balance of the AC/Heat Pump and EV charging loads at 100%

**\*\*Total Watts**

**TOTAL AMPS**

1	W
2	W
3	
4	W
5	
6	
7	W
8	

Note:

For buildings where the unit is 80 m sq or more:	For buildings where units are less than 80 m sq
a. 100 amps is the minimum allowed ampacity used in the calculation	a. 60 amps is the minimum allowed ampacity used in the calculation
b. If the calculated load exceeds 100 amps, the calculated load must be used	b. If the calculated load exceeds 60 amps, the calculated must be used.
<b><i>For Heat Pump/AC Units – when interlocking with electric heat be sure to use the higher value in your calculation.</i></b>	

The personal information collected on this form is done so pursuant to the Community Charter and/or the Local Government Act and in accordance with the Freedom of Information and Protection of Privacy Act. The personal information collected herein will be used only for the purpose of processing this application or request and for no other purpose unless its release is authorized by its owner, the information is part of a record series commonly available to the public, or is compelled by a Court or an agent duly authorized under another Act. Further information may be obtained by speaking with The District of North Vancouver's Manager of Administrative Services at 604-990-2207 or at 355 West Queens Road, North Vancouver.