

BULLETIN 2020-001-BU/EL

January 7, 2020

Installation of Panelboards, Circuits and Receptacles in Dwelling Units including Secondary Suites or Lock-off Units (Ancillary Residential Units)

The intent of this bulletin is to clarify:

- 1) installation requirements of panelboards and circuits in the dwelling units with secondary suites or lock-off units (ancillary residential units),
- 2) installation of additional 240 V appliance branch circuits in a newly constructed one-family or two-family dwelling,
- 3) receptacles installed in bar counter areas of a newly constructed one-family or two-family dwelling,
- 4) location of panelboards in dwelling units, and
- 5) installation of panelboards in adaptable dwelling units.

This bulletin supersedes Bulletin 2000-027-EL, Bulletin 2000-042-BU/EL, Bulletin 2004-009-EL and Bulletin 2005-005-EL.

Dwelling unit

The CE Code defines dwelling unit as one or more rooms for the use of one or more persons as a housekeeping unit with cooking, eating, living, and sleeping facilities. For terms not specifically defined in the Canadian Electrical Code, Part I (CE Code), the terms of “ancillary residential unit”, “laneway house”, “lock-off unit”, “micro dwelling”, and “secondary suite”, used in the VBBL, Zoning and Development By-law and Electrical By-Law (VEBL) should be understood to have the meaning of “dwelling unit” as defined by the CE Code.

1) Installation requirements of panelboards and circuits in dwelling units with secondary suites or lock-off units (ancillary residential units).

Summary of regulations - Review the [Electrical By-law No.5563](#)

Explanatory information of panelboards for dwelling units is illustrated in the Figures of this bulletin.

CE Code Rule 26-602 requires that a panelboard be installed in every dwelling unit, and Subrule 1) provides an exception.

In accordance with Subsection 7.3.5 (g)(vi) and (vii) of the VEBL, where an existing dwelling unit is altered to combine an ancillary residential unit within the principal dwelling unit, the general circuit branch wiring may be interconnected between dwelling units, and only one panelboard located in either dwelling unit is permitted, provided it is accessible to all occupants of the building. **(See Figure 2)**

For construction of an ancillary residential unit in a new or existing dwelling unit, a panelboard must be installed in every dwelling unit **except** as permitted by Subsection 7.3.5 (a) of the VEBL, if there is a combination panelboard installed in a common area in the building that is accessible from both dwelling units. **(See Figures 1, 3, 4)**

Notwithstanding the foregoing, a combination panelboard must be installed in a lock-off unit within a residential suite in a new apartment building in accordance with Subsection 7.3.5 (b) of the VEBL.

Direction

- A. Since August 15, 2005, the City Electrician has been allowing installation of an additional 240 V, 40 A branch circuit (for future electric range) in a one-family dwelling under the specific requirements and conditions listed in Bulletin 2005-005-EL "INSTALLATION OF ADDITIONAL 240 V BRANCH CIRCUITS IN DWELLING UNITS"; on May 30, 2016, this bulletin (replaced by this bulletin, see below item 2) was revised to also allow an additional 240 V, 40 A be installed in a two-family dwelling; in which a new requirement was implemented with respect to a separate combination panelboard that must be installed in the portion of the dwelling unit designed to facilitate future development of a secondary suite or lock-off.
- B. From April 19, 2007 until January 11, 2010, Bulletin 2004-006-BU/EL "PANELBOARDS AND CIRCUITS IN DWELLINGS WITH SECONDARY SUITES" (withdrawn) clarified that "A single existing panelboard shall be permitted to supply electrical loads in the principal dwelling and in the secondary suite".

Secondary suites, lock-off units, or other forms of housing ancillary to a primary dwelling, rely upon a single ownership model, for which the owner bears the responsibility for the maintenance and safe function of all the contained units. When the dwelling units have been created by subdivision of a single dwelling that are not individually metered for electrical power consumption, CE Code Rule 26-602 1) does not require an individual panelboard for the branch circuits in each dwelling unit. In conclusion:

- a) Where the panelboard in a dwelling unit supplying an additional 240 V, 40 A branch circuit which was installed under an electrical permit as described in item A above, the location of panelboard in this existing building is deemed to be acceptable for the application of Section 4.9 and Subsection 7.3.5 (g)(vii) of the VEBL.
- b) Where the dwelling existed prior to January 11, 2010 as explained in item B above, a single existing panelboard shall be permitted to supply electrical loads in the principal dwelling unit and ancillary residential unit for the application of Section 4.9 and Subsection 7.3.5 (g)(vii) of the VEBL.
- c) Except as permitted in a) or b) above, where an existing building containing a principal dwelling unit is altered to create an ancillary residential unit, for the application of Subsection 7.3.5 (g)(vii) of the VEBL, the panelboard must be accessible to all occupants of the building. Accessible means - admitting close approach because the equipment is not guarded by locked doors, elevation, or other effective means, or the main combination panelboard be located in a common area in the building that is accessible from both dwelling units. (See Figure 2)

2) Installation of additional 240 V appliance branch circuits, in a newly constructed one-family or two-family dwelling.

In light of a possible development of a secondary suite or lock-off unit in a newly constructed one-family or two-family dwelling, every electrical permit issued for a one-family or two-family dwelling is provided with a term (see below Note) that allows installation of an additional 240 V, 40 A appliance branch circuit (for a future electric range) in a one-family or two-family dwelling provided that the following requirements and conditions are met:

- A. The additional 240 V, 40 A appliance branch circuit is intended only for use that is authorized by the provisions of VBBL or Zoning and Development By-law.
- B. In the portion (the future smaller dwelling unit) of the dwelling unit that is designed to facilitate future development of a secondary suite or lock-off:
 - a) kitchen counter receptacles, refrigerator receptacle and branch circuits must be provided in conformance with Section 26 of the CE Code, and
 - b) notwithstanding Rule 26-602 1), a separate combination panelboard must be installed, and branch circuits connected to outlets or electrical equipment in this portion of the dwelling unit must be supplied by this panelboard; for the purpose of Rule 26-654 a).
- C. A minimum load of 6 kilowatts in accordance with CE Code Rule 8-200 1) a) iv) must be added to the determination of minimum ampacity of the service.
- D. The additional branch circuit must be terminated at the receptacle of CSA Configuration 14-50R.
- E. Table 39 is not permitted to be applied in accordance with CE Code Rule 4-004 22).
- F. On the application for a permit that covers the installation of additional 240 V appliance branch circuits, a box indicating the "Branch Circuit For Future Range" must be checked by the electrical contractor.

Note

It is permitted to install 1 additional 240V, 40A branch circuit in a one-family dwelling, or both of the dwelling units or in one of the dwelling units in a two-family dwelling provided that the ampere rating of the service is also based on the additional load of this circuit. The circuit to be terminated at the receptacle of CSA configuration 14-50R that is intended for "authorized" use only. Additional requirements clarified by BULLETIN 2019-007-BU/EL must also be met. "authorized" means permitted by the provisions of the VBBL, Zoning and Development By-law or similar regulations. Warning - this permit does not authorize a use that is not approved under the Zoning and Development By-law and/or the VBBL, such as adding another dwelling or housekeeping unit.

3) Receptacles installed in the built-in wet bar counter areas in a newly constructed one-family or two-family dwelling.

There is a variety of dwelling units in the City where installation of a wet bar or other similar counter with a sink is intended to be used with appliances normally utilized on kitchen counters. These areas are also intended for installation of a refrigerator near a wet bar counter and a heating and cooking appliance if such appliance is authorized by the provisions of VBBL or Zoning and Development By-law. Thus, a policy on receptacles that are required in such areas will provide a uniform and consistent approach to installation requirements similar to those mandated by CE Code for kitchens in dwelling units.

Direction

Where a built-in bar or other similar counter with a sink and a work surface is provided, or intended to be provided in a dwelling unit, the following requirements must be met:

- A. At least one GFCI protected duplex receptacle shall be installed on the wall behind the counter work surface on each side of the counter sink.
- B. The duplex receptacles referred to in item A above shall be supplied by a branch circuit that does not supply any other outlets.
- C. One receptacle connected to a separate branch circuit shall be installed for a refrigerator.
- D. Where an electric heating and cooking appliance is authorized to be installed in a built-in wet bar counter area, a receptacle of CSA configuration 14-50R connected to a separate branch circuit shall be installed for the supply of electric energy to the appliance in conformance with CE Code Rule 26-744 5) and 6).
- E. A load of 6000 W (rating of 12 kW or less) shall be considered as a calculated load for each appliance authorized to be installed as per item D and such a load must be added to the loads of the dwelling unit for the determination of the minimum ampacity of the service.
- F. Where an additional 240 V appliance branch circuit is provided as described in item D, the duplex receptacles referred to in item A above shall be supplied by two separate branch circuits; wired on the single circuits (5-20R) or a split circuit (5-15R) for both.

4) Location of service boxes, panelboards and similar serviceable electrical equipment in buildings including dwelling units.

The CE Code contains various rules which regulate the location of service boxes, panelboards and similar serviceable electrical equipment. Traditionally, storage rooms are not permitted to be used for the installation of service boxes, panelboards and similar electrical equipment. These storage rooms are considered undesirable places under provisions of Rule 6-206 1) c) v), Rule 26-600 1), etc.

Direction

The installation of panelboards in storage rooms is not permitted. Exception: A panelboard and similar serviceable electrical equipment may be installed in a storage room when the panelboard is located without being obstructed by material or objects intended to be stored in the storage room. Typical examples of an acceptable location of a panelboard in a storage room are shown in this bulletin. (See Figure 5)

5) Panelboards in adaptable dwelling units.

CE Code Rule 26-600 2) requires that panelboards in dwelling units be installed as high as possible, with no overcurrent device operating handle positioned more than 1.7 m above the finished floor level. The CE Code Handbook explains that if the dwelling unit has a barrier-free design, the local codes should be consulted for the maximum mounting height of the panelboard. See also CSA B651.

Notwithstanding CE Code Rule 26-600 2), and Sentence 3.8.5.7.(2) of the VBBL, Sentence 9.34.1.1.(3) mandates that the circuit breakers of panelboards installed in the dwelling units be positioned not less than 600 mm above the finished floor level, and the circuit breakers of panelboards installed in dwelling units be positioned as high as feasible with the branch circuit breakers not more than 1500 mm above the finished floor level.

Direction

Under no circumstances should the operating handle of a circuit breaker of a panelboard installed in a dwelling unit be positioned more than 1700 mm or less than 600 mm above the finished floor level.

The noteworthy VBBL electrical requirements for ancillary residential units

- A. Ancillary residential units complying with Section 9.37, must comply with the following requirements:
- a) Where a heating or ventilation duct system serves more than one dwelling unit, the system shall be designed and installed to prevent the circulation of smoke to adjacent dwelling units upon a signal from a duct-type smoke detector or smoke alarm; in conformance with Sentence 9.37.2.17.(2).
 - b) The installation of smoke alarms shall conform to Subsection 9.10.19.
Smoke alarms shall be installed in each principal dwelling unit and each ancillary residential unit, and shall be of the photo-electric type hard-wired so that the activation of any smoke alarm will cause the smoke alarms in the principal dwelling unit and its ancillary residential unit to sound; in accordance with Article 9.37.2.19.

(See Note A-9.37.2.19.)

This Article requires an interconnected photoelectric smoke alarm in each suite where fire separations having a fire-resistance rating of 30 min are used. It is important to note that these photoelectric smoke alarms are additional to the requirements of Subsection 9.10.19. The additional smoke alarm should not be interconnected to the other smoke alarm(s) located within the same suite. This additional smoke alarm system is not required when the fire-resistance ratings required in Articles 9.10.9.14. and 9.10.9.15. are not reduced, or when the building is sprinklered.

- B. In accordance with Sentence 11.4.3.1.(1), Table 11.4.3.1. applies to buildings constructed under a building permit issued on or prior to June 22, 2004 and has the following summary for the alternative compliance measure for smoke alarms for the entire building:

Interconnected smoke alarms are to be provided outside every bedroom and at least one on every storey and installed by permanent connections to an electrical circuit in conformance with Subsection 9.10.19. Provisions must be allowed for battery backup and manual silencing devices which will silence the alarm in conformance with Article 9.10.19.6. Carbon Monoxide detectors are to be provided in accordance with the 9.32.4.2. See Note A-11.4.3.1.(1)

[Review the VBBL](#)

(Original signed by)

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Director, Building Code and Policy

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Manager, Trades Inspection

Figure 1 - Single dwelling with secondary suite - CE Code Rule 26-602 1) and VEBL Subsection 7.3.5 (a)

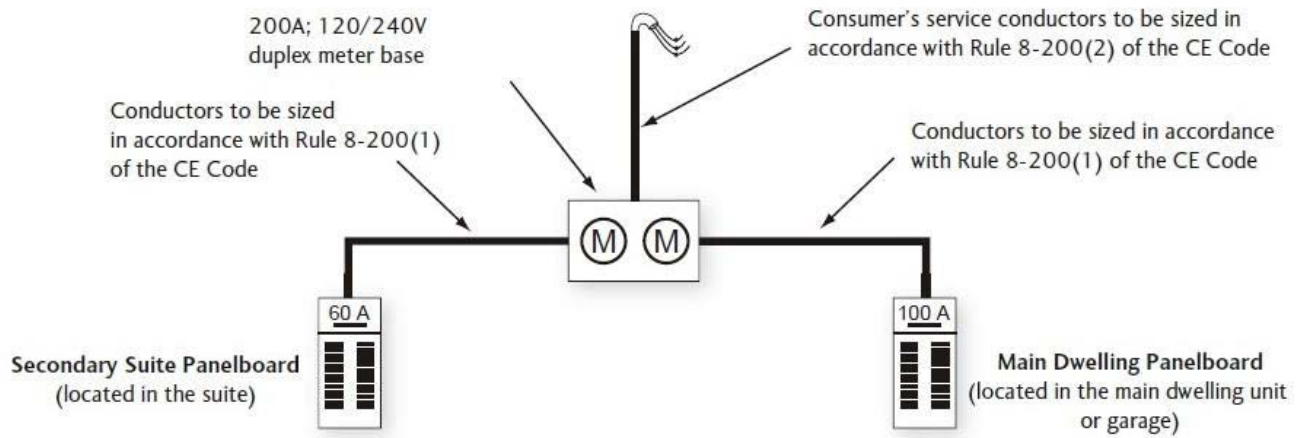


Figure 2 - Single metering and panelboard for the existing building - CE Code Rule 26-602 1) and Subsection 7.3.5 (g)(vi) and (vii) of the VEBL

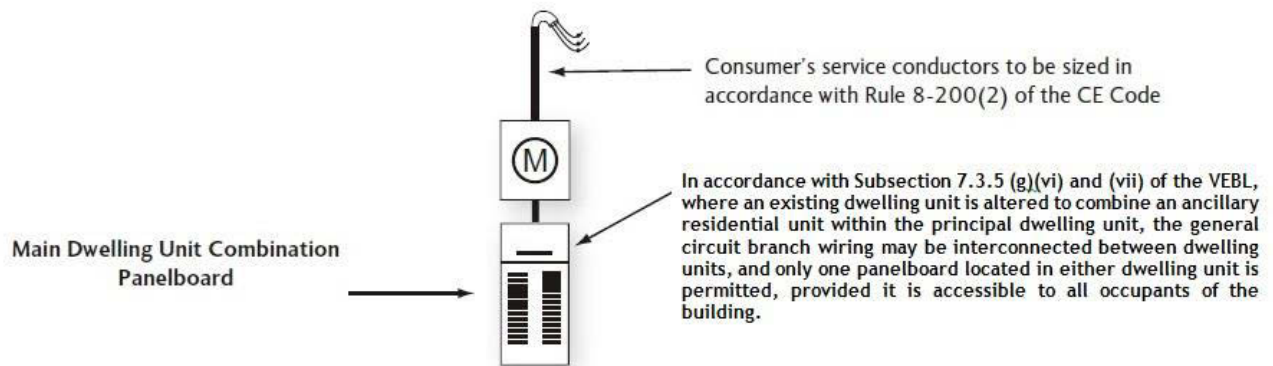
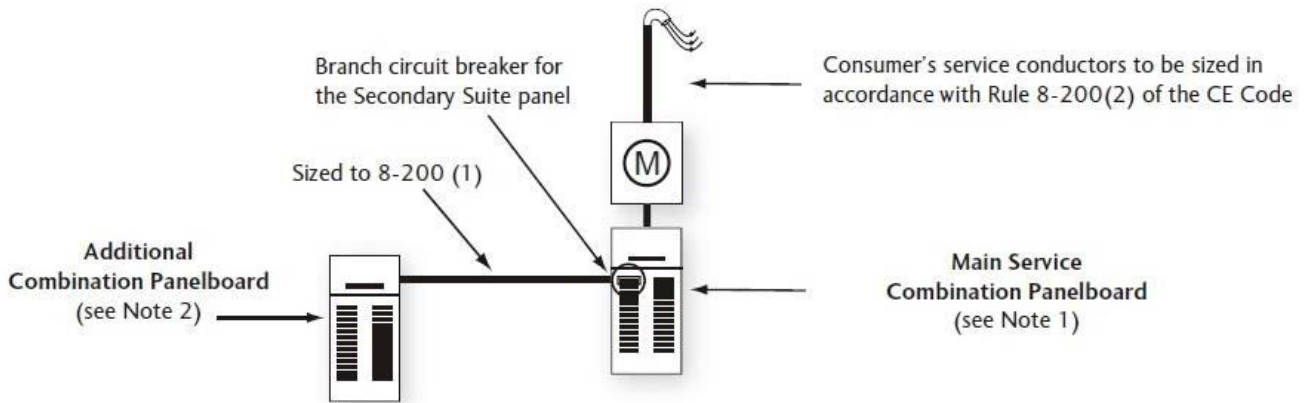


Figure 3 - Single metering of two panelboards - CE Code Rule 26-602 1) and VEBL Subsection 7.3.5 (a)



NOTES:

- 1) Main service combination panelboard may be located in the main dwelling, in the secondary suite or in the garage
- 2) Additional combination panelboard may be installed in the secondary suite or in the main dwelling

Figure 4 - Single metering of the entire building - CE Code Rule 26-602 1) and VEBL Subsection 7.3.5 (a) - For construction of an ancillary residential unit in a new or existing dwelling unit

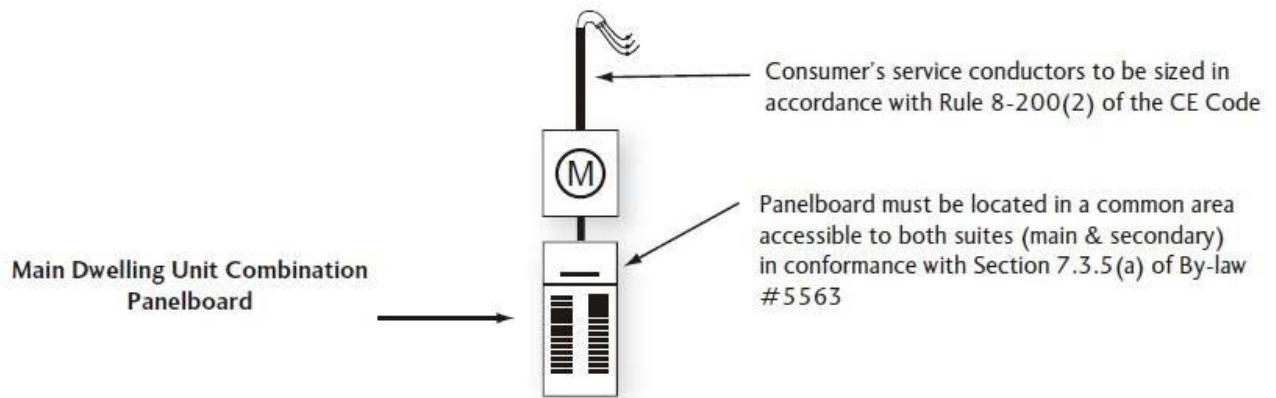
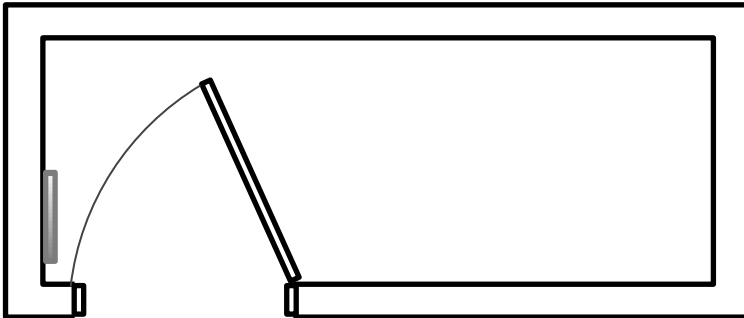
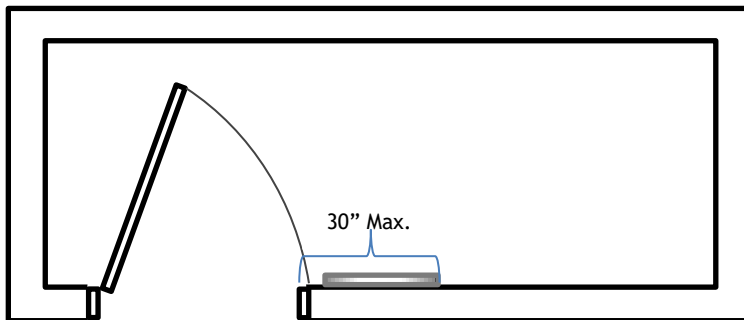


Figure 5 - Examples: An acceptable location of a panelboard in a storage room

1. Ideal location



2. Preferred location (a warning label is to be provided at the panelboard, indicating that the working space around the panelboard must not be used for storage and shall be kept clear of obstruction for ready access).



3. Alternate location choice (a warning label is to be provided at the panelboard, indicating that the door must be secured and working space around the panelboard not be used for storage).

