

Ministry of Municipal Affairs

Technical Support for Electric Vehicle Charging Requirements in the Building Code that are in effect January 1, 2018

Houses

Questions and Answers

Provided on March 8, 2018

This document is intended to provide guidance to assist with interpreting amendments to the Building Code. The application of the requirements depends on the situation. For legal advice, you may want to consult a lawyer. For the official version of the regulation, please see Ontario e-Laws under the Source Law section.

Ministry of Municipal Affairs

Technical Support for Electric Vehicle Charging Requirements in Houses

Building Code electric vehicle charging requirements applicable to *houses* are provided in Annex 1 at the end of this document.

Questions and Answers

Q1. When did electric vehicle charging requirements come into effect?

- A. These requirements came into effect for building permits applied for on or after January 1, 2018.

Q2. Do all building permit applications submitted after January 1, 2018 need to demonstrate compliance with these requirements?

- A. Some building permit applications may be subject to transition provisions which came into effect on January 1, 2018. In a certain number of specific cases, where the conditions of the transition provisions are met, the requirements related to electric vehicle charging infrastructure would not apply, if the building permit application is filed before January 1, 2020.

Q3. What are the transition provisions related to new houses?

- A. Some building permit applications may be subject to transition provisions. In specific cases, where the conditions of the transition provisions are met, the requirements related to electric vehicle charging infrastructure do not apply, if the building permit is applied for before January 1, 2020.

The transition provision sets out that, new houses that are served by a garage, a carport or driveway would not have to meet the electric vehicle charging requirements, if before January 1st, 2018:

- the building permit applicant has a utility plan that has been approved by an electrical distribution company which details the electrical utility infrastructure that needs to be installed,
or

- the building permit applicant has an agreement from the electricity distributor to connect the building to the electrical system.

and

- the applicant applies for a building permit before January 1, 2020.

If permit applicants have proved they received the necessary approvals from electricity distributors, that is understood to mean the project is far along in the approvals process. However the building permit must be applied for before January 1, 2020.

Please see new Sentences (2.1) and (7) for transition provisions regarding small non-residential *buildings* and *houses* respectively (provided in Annex 1).

Q4. What buildings do the electric vehicle charging requirements apply to?

- A. The requirements apply to a *house* that has its own garage, carport or driveway serving the *house* and is not exempt under Sentences (6) or (7).

Q5. Do these requirements apply to existing houses or renovations?

- A. No.

Q6. If the house contains more than one parking space in the garage, carport or driveway, does more than one parking space need to meet these requirements?

- A. No, electric vehicle charging requirements apply to one parking space per house.

Q7. Is a townhouse or townhome a house?

- A. Yes. “House” is a defined term in the Building Code and means a detached house, semi-detached house or row house containing not more than two dwelling units. Townhouses or townhomes are considered, in the Building Code, to be “row houses.”

Q8. If there is a garage in a row house or there is a car port or driveway specifically serving that row house, do the electric vehicle charging requirements apply?

- A. If the garage, carport or driveway serves the *house*, then the requirements would apply.

Q9. Do the requirements apply for buildings where the parking spots serving the row houses are provided in a common lot or in a separate parking structure?

- A. If parking spaces serving row houses are provided in a surface lot, the electric vehicle parking requirements do not apply.

When parking spaces are located in a common garage exclusively serving the row houses, electric vehicle charging requirements would not apply because this would likely be considered a garage for a multi-unit residential building. The details of this situation would vary according to the design.

The Ministry of Municipal Affairs consulted separately on an electric vehicle charging proposal for apartment *buildings* (multi-unit residential buildings) where parking is provided inside the *building*. The feedback from those consultations is under review for potential inclusion in the next edition of the Building Code.

Q10. Do these requirements apply to stacked or back-to-back row house projects?

- A. There are different Building Code requirements for a *house*, than for an apartment *building* or what is commonly known as a “multi-unit residential” *building*.

In stacked or back-to-back row house projects, certain units (but perhaps not others) may be served by their own garage or on-site driveway. In these cases, the electric vehicle charging requirements would likely apply to those *houses*. The details of this situation would vary depending on the design.

Generally, a building official may wish to consider if the garage serves the particular *house* and if it is connected to the electrical system of the house.

Q11. Some townhome projects have a detached garage for the unit, located across a laneway, for example. Do those houses need to meet the Building Code requirements?

A: The details of this situation would vary depending according to the design.

Generally, a building official may wish to consider if the garage serves the particular *house* and if it is connected to the electrical system of the *house*.

Q12. If the builder wants to install energized *electrical vehicle supply equipment* instead of providing an empty conduit, would that meet the Building Code requirements?

A. The Building Code contains minimum requirements that must be met or exceeded in order to comply.

If the building permit applicant chooses to provide a 200 amp panel and an energized receptacle to deliver Level 2 charging (e.g. 240V; 40amp), it would exceed the minimum requirements in the Building Code.

Q13. Who is responsible for enforcement?

A. The building official is responsible to check to see that there is a (minimum) 200amp panel, a conduit and box, as described in the regulation (or approve an alternative solution that would not require a 200amp panel).

The electrical inspector is responsible for making sure that the installation is in compliance with the Ontario Electrical Safety Code.

Note that the requirements, explained above, do not apply if the application is subject to the transition provisions which are described in Q3.

Q14. Is there a specified location for the conduit and the termination of the conduit in the garage?

A. The Building Code and Ontario Electrical Safety Code do not specify a location.

The conduit, the box and the means to pull the wires into the conduit, as described in the requirement, are considered to be electrical equipment. Therefore, the building official needs to make sure that the box and the conduit exist; whether it has been installed safely would be part of the electrical inspection.

Exactly where the conduit terminates in the garage could vary if no charger or appliance for charging the electric vehicle has been installed. The Ontario Electrical Safety Code (Section 86) requires the electric vehicle connector to be able to couple to the electric vehicle. When the time comes to install the charging appliance for a particular vehicle, the conduit can be extended or shortened if necessary.

Q15. What is an alternative solution?

- A. Alternative solutions are alternatives to the technical requirements of Division B of the Building Code that meet the underlying intent of those requirements.

For an alternative solution to be approved by a municipal chief building official, the solution must achieve the level of performance required by the “acceptable solutions” set out in Division B of the Building Code with respect to the relevant “objectives” and “functional statements”.

That is why MMA produces “SA-1”, a Supplementary Standard to the Building Code that links each acceptable solution to an objective and a functional statement. In this way, a proposed “alternative solution” can be evaluated to see if it meets the same level of performance as Division B’s “acceptable solutions” in relation to the linked objective and functional statement.

The updated pages of the SA-1 will be published as part of an amendment package to the current Building Code compendium, and will be available as a free download from [ServiceOntario Publications](#).

Q16. Why would someone want to use an alternative solution instead of using the acceptable solution for meeting the EV charging technical requirements?

- A. The level of performance of the house for the purpose of evaluating a potential alternative solution is intended to be the ability for a house to enable future electrical vehicle charging to an equal or greater extent than the acceptable solution in Sentence 9.34.4.1.(3) (given the functional statement and objective and the wording of that Sentence).

Based on the required amperage of the electrical panel and the size of the conduit required by Sentence 9.34.4.1.(3), the intent of the requirements is to enable the future installation of Level 2 *electric vehicle supply equipment*. The level of performance of the acceptable solution can therefore be considered to be infrastructure that enables the future installation of Level 2 charging.

Level 2 charging generally uses 240 volts and can be expected to require 40 amps at the electrical panel.

Designers and builders of smaller houses may be able to achieve the level of performance of the requirements without needing to install a 200 amp panel and therefore may seek alternative solutions.

Q17. Why was the Supplementary Standard SA-1 amended?

A. The SA-1 was amended in order to enable “alternative solutions” to the new technical requirements for EV charging by linking applicable objectives and functional statements of the Building Code to the new EV requirements.

This amendment specifies that the purpose of the new electrical vehicle charging requirements is to design and construct *buildings* so that the degradation of the natural environment from greenhouse gas emissions is limited.

In this case, this is being achieved by facilitating the future installation of EV charging equipment that will support vehicles that do not produce greenhouse gas emissions.

The objective and functional statement that are now attributed to the electric vehicle charging requirements are:

- Objective: “To limit the probability that, as a result of the design or construction of a *building*, the natural environment will be exposed to an unacceptable risk of degradation due to emissions of greenhouse gases into the air [OE1.1.]”
- Functional Statement: “To limit excessive emissions of greenhouse gases into the air [F150]”

Q18. What are the appendix notes for?

A. Appendix notes to the Building Code are provided in Appendix A of Volume 2 of Ontario’s Building Code Compendium. They are included for explanatory purposes only and do not form part of the requirements. Appendix notes for the EV charging requirements in Parts 3 and 9 of the Building Code have now been developed and include information on the requirements and considerations for alternative solutions.

They will be published as part of an amendment package to the current Building Code compendium, and will be available as a free download from [ServiceOntario Publications](#).

Q19. How can I find out more?

- A. You can subscribe to [CodeNews](#) if you have not already subscribed or check in with the [MMA - Building Code](#) website for updates on the posting of other information.

For more information about the Electrical Safety Authority, please visit [Electrical Safety Authority](#) website.

Annex 1

Building Code Requirements for Electric Vehicle Charging in Houses and Small Non-residential Buildings

On December 19, 2017, Electric Vehicle Charging Requirements in Ontario's Building Code were amended to provide an exemption for certain projects.

The EV charging requirements for Part 9 buildings are provided below. The new amendment is provided as underlined text.

9.34.4. Electric Vehicle Charging

9.34.4.1. Electric Vehicle Charging Systems

(1) Except as provided in Sentences (2.1) and (3), where vehicle parking spaces are located in a *building*, other than an apartment *building*, not less than 20% of the parking spaces shall be provided with *electric vehicle supply equipment* installed in accordance with Section 86 of the Electrical Safety Code adopted under Ontario Regulation 164/99 (Electrical Safety Code) made under the *Electricity Act, 1998*.

(2) The remaining parking spaces located in a *building* described in Sentence (1) shall be designed to permit the future installation of *electric vehicle supply equipment* that conforms to Section 86 of the Electrical Safety Code.

(2.1) Parking spaces located in a *building* need not comply with Sentence (1) where,

(a) before January 1, 2018,

(i) an agreement was entered into between the owner of the land on which the *building* is to be constructed and a distributor, as defined in subsection 2 (1) of the *Electricity Act, 1998*, that sets out the conditions for the connection of the building to a distribution system, as defined in subsection 2 (1) of that Act, or

(ii) a plan for the land on which the *building* is to be constructed respecting the siting and sizing of lines, transformers or other equipment used for conveying electricity was approved by a distributor, as defined in subsection 2 (1) of the *Electricity Act, 1998*, and

(b) an application for a permit to *construct* the *building* was made before January 1, 2020.

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(3) Except as provided in Sentences (6) and (7), where a *house* is served by a garage, carport or driveway, the following shall be installed to permit the future installation of *electric vehicle supply equipment* that conforms to Section 86 of the Electrical Safety Code:

- (a) a minimum 200 amp panelboard,
- (b) a conduit that is not less than 27 mm trade size and is equipped with a means to allow cables to be pulled into the conduit, and
- (c) a square 4-11/16 in. trade size electrical outlet box.

(4) The electrical outlet box described in Clause (3)(c) shall be installed in the garage or carport or adjacent to the driveway.

(5) The conduit and electrical outlet box described in Clauses (3)(b) and (c) shall provide an effective barrier against the passage of gas and exhaust fumes.

(6) A *house* need not comply with Sentence (3) where it,

- (a) is not connected to a distribution system, as defined in subsection 2 (1) of the *Electricity Act, 1998*, or
- (b) is used or intended to be used as a seasonal recreational *building* described in Section 9.36.

(7) A *house* need not comply with Sentence (3) where,

(a) before January 1, 2018,

- (i) an agreement was entered into between the owner of the land on which the *house* is to be constructed and a distributor, as defined in subsection 2 (1) of the *Electricity Act, 1998*, that sets out the conditions for the connection of the *house* to a distribution system, as defined in subsection 2 (1) of that Act, or
- (ii) a plan for the land on which the *house* is to be constructed respecting the siting and sizing of lines, transformers or other equipment used for conveying electricity was approved by a distributor, as defined in subsection 2 (1) of the *Electricity Act, 1998*, and

(b) an application for a permit to *construct* the *house* was made before January 1, 2020.

These requirements came into force on **January 1, 2018**. Please note these same provisions are included in Part 9 of the Building Code.