Electric vehicle home charging requirements

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You decide a level 2 charger is right for you, but your garage or carport does not have adequate existing power supply. You want the EV charging station to be fast, so what conditions must be met to safely install the charging station? Let"s explore some equipment considerations and electrical code requirements.

In accordance with NEC 625.54, all EV charging stations rated 150-volts to ground or less, and 50 amperes or less are required to be GFCI (Ground-Fault Circuit Interrupter) protected. The intent is to protect people from possible electric shock or electrocution in the event of a ground fault inside the EV charging station or in the wiring and components suppling power to the charging station.

Many residential garages or indoor spaces have hose bibs or water faucets available for vehicle washing or to facilitate cleaning. According to NEC 625.56, if the EV charging station is installed in a wet location, the receptacle enclosure must be rated weatherproof with the attachment plug cap inserted or removed. NEC 100 defines a wet location as "installations underground or in concrete slabs or masonry in direct contact with the earth; in locations subject to saturation with water or other liquids, such as vehicle washing areas; and in unprotected locations exposed to weather".

The Taxpayer Certainty and Disaster Tax Relief Act of 2020 extended property tax credit for alternative refueling systems installed before 31 December 2021. For the purposes of this federal tax incentive, the IRS considers electricity as an alternative fuel. Therefore, level two EV charging stations if installed in a home qualify for a 30% credit not to exceed $1,000. See IRS form 8911 rev. February 2021.

Interested in a level 2 AC electric vehicle charger, consider hiring an electrical professional with expert knowledge to properly design, size and install your charger and power circuit. A small upfront investment in careful design can save thousands in future repairs and mitigate the chance of a home fire.

At Home Performance Group, we continue to invest in technical training so we can correctly design, specify, size, and install electrical branch and feeder circuits. We have performed numerous EV charging station installations for our clients. If you are interested in a no cost in-home consultation, schedule with a Solutions Advisor today.

With current concerns for airborne viruses causing illnesses, we can help improve the air quality in your home with products like; UV Lights, Air Purifiers, Upgraded Air Filters. Contact us for a FREE consultation

When considering buying an EV, consumers rightfully think about destination charging - meaning where and how to charge the car while traveling. However,a consideration often overlooked and misunderstood is how the car will be charged at home.

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Not yet. All PEVs can use Level 1 and Level 2 (non-Tesla) chargers. DC fast charging, however, is vehicle-specific and not available for all PEVs. If your PEV has DC fast charging capabilities, it has one of the three types of fast charging ports - CHAdeMO, CCS, or Tesla. Vehicles" charging ports vary by auto manufacturer, so make sure to check which connector is compatible with your vehicle before charging.

Fortunately, many DC fast charging stations now provide multiple connector options in order to service as many PEVs as possible. You can check if a specific station has your vehicle"s connector in DOE"s Alternative Fuel Data Center"s station locator. Map of available public chargers.