

Use of temporary portable generators

Background:

Over 250,000 customers in Ontario lost electrical power as a result of the ice storm that hit Southern Ontario in December 2013. During this distressed time, the Electrical Safety Authority (ESA) noticed impulsive actions taken by some home owners trying to alter electrical installations to supply essential loads with portable generators which might have caused electrical fires and shock hazards to both building occupants and Utility workers.

Direction:

It is permitted to use portable generators without the use of a transfer device, provided there is no possibility to backfeed to utility lines. It is of the utmost importance that the end users closely follow installation and operating instructions supplied by the portable generator manufacturer to minimize potential hazard of electrical shock or fire.

Temporary connection using plug-cord set:

- Where an extension cord is used to plug into an appliance or other device, no live parts shall be exposed when one end is connected to a source of supply and the other end is free.
- **A separate bonding conductor would need to be installed to bond the gas pipe since the use of a cord is considered not “solidly connected”.**
- The Ontario Electrical Safety Code (OESC) does not prohibit appliances, which are intended for connection by a wiring method as specified in Section 12, to be cord-connected using an attachment plug and receptacle.
- Consideration shall be given to correct configuration of male-plug to be used, as per Diagram F1, as well as the cord set, in terms of number of conductors, ampacity and voltage rating.
- In preparation of such setup during a power failure, conductors must be treated as “LIVE” to avoid shock hazard if the main power returns. Ensure panel directory is up to date and if in doubt, shut the main disconnect off.

Other tips to ensure you're using portable generators safely are:

- Never use a generator indoors; use it in a dry area outdoors and away from open doors, windows and vents.
- Never connect portable generators to electrical appliances or wiring components that have been affected by flood water.
- If you have to use extension cords, make sure they are the grounded type with three prongs and rated for how you're planning to use them. Coiled cords can get extremely hot; always uncoil cords and lay them flat.
- Gasoline and its vapors are extremely flammable. Allow the generator engine to cool at least 2 minutes before refueling and always use fresh gasoline.

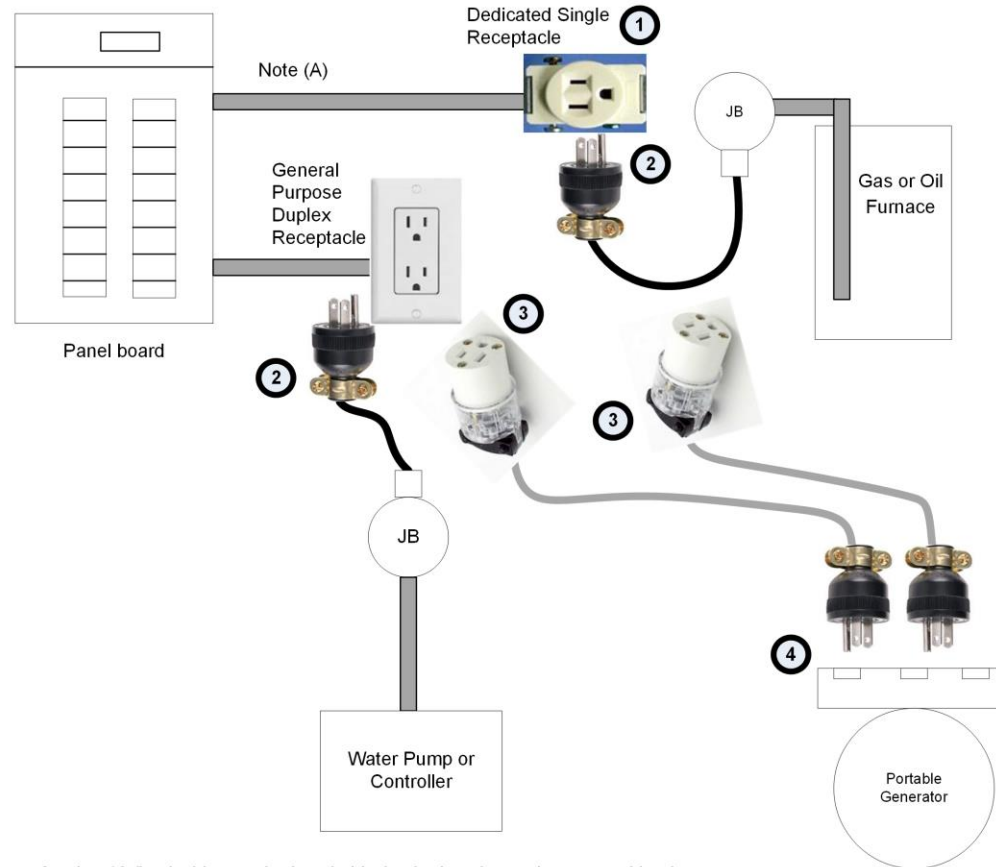
For more information on electrical safety when stormy weather hits, visit:

<https://esasafe.com/safety/>

As normal power is restored, temporary generators shall be disconnected and all temporary wiring removed. ESA strongly advises customers to have equipment and wiring (that were disturbed to allow the temporary connection to the generator) checked and repaired as necessary to ensure restoration to safe operating conditions.

Diagram F1 provides guidance to the correct use of portable power generators

Diagram F1 – Temporary setup for portable generator



■ Section 12 fixed wiring methods suitable for the location and connected load.

— Extra hard usage flex cord of not less than No. 14 AWG, correct number of conductors, ampacity and voltage rating for the application and to ensure bonding. Suitable for the location (wet or dry).

— Portable outdoor cordsets with one male plug and one female cord cap. Consideration shall be given for correct configuration, number of conductors, ampacity, and voltage rating.

① Single Receptacle located at least 1.5 m above floor (Rule 26-802), and as close as possible to furnace to minimize flexible cord run. Plug/cord set and receptacle satisfy disconnecting means requirements, Rule 26-806 5).

② Male Plug to match receptacles

③ Female cord cap to match plug ②

④ Portable generator interface, depends on make and model of generator (receptacles, fuses, switches, etc.)

Note (A):

The installation of a permanent single receptacle fed from service panel to supply cord connected furnace needs to satisfy all code requirements and requires the application for inspection.

CAUTION:

- Disconnect overcurrent protection (shut off branch circuit breaker, or unplug the fuse) feeding hard-wired appliance, before attempting to do any alteration to their wiring;

- Ensure you read the nameplate for the appliance and select the plug and cord set according to appliance amperage, voltage and phase. For 120V appliances, use 3-prong plugs and cord sets to ensure proper bonding;

- Use certified electrical products. Unsafe products may pose fire and electrical shock hazard.