



## Labour and Workforce Development

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Subject: Advisory on the safe use of portable generators for homes

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For the purposes of this advisory portable generators are generators that are typically not rated more than 7000 W and are units that are not permanently installed, but are taken out by the owner during a power outage and used on a temporary basis. ( See note 1 )

The following is a brief summary of some of the important general safety rules that should be followed in addition to the manufacturers instruction's for the safe use of portable generators.

The improper use or installation of a portable generator can cause fire and shock hazards and possible death not only to the user of the generator and their family but to neighbours and utility workers.

### **Safe Installation Requirements**

All portable generators must be properly approved by a certification organization such as CSA, cUL or cETL which will have such a mark / logo directly on the generator.

Never connect your generator directly to the homes wiring or try to feed power from the generator back into a wall receptacle.

**By law** ,the connection of the generator directly to the homes electrical system must be done using an approved transfer switch and the installation done by a certified construction electrician who must obtain an electrical permit. Upon completion the final installation must be inspected by the electrical inspection department.

If the generator is not being connected to the homes electrical system ( stand alone ), then it is recommended that a type with the neutral bonded to the frame be used. Neutral floating type generators are not recommended for stand alone purposes and may require additional grounding as per the manufacturers instructions.

Generators with a neutral floating are marked directly with the wording “neutral floating ” or similar type wording on the generator, typically near the receptacles.

Where the generator is connected to the homes electrical system ,it is important that the generator and how the neutral is bonded, match the type of transfer switch being used and this is why it is important that a certified construction electrician be used and the installation be inspected.

Where the generator is stand alone, plug the electrical appliance directly into the generator or where necessary use heavy gauge grounded ( 3 prong ) extension cords that are in good condition and rated for outdoor use ( # 14 AWG recommended minimum for 15 A loads ).

### **Electrical Hazards**

For stand alone generators, it is recommended that types with built in ground fault circuit interrupters ( GFCI) are used or use extension cords with built in GFCI protection.

Ensure you do not over load your generator and, if connecting the generator to the homes wiring, ensure you consult with a qualified person to calculate the minimum size wattage of the generator that you may require based on what you expect to power up during the power outage.

Operating your generator in wet conditions may cause electrocution to you or others and may damage your generator and the equipment that is connected to it.

### **Fire and Carbon Monoxide (CO) Hazards**

Never use a generator indoors or in an enclosed space such as a garage, crawl space ,or basement even with open windows or doors. There may not be adequate ventilation to prevent the buildup of carbon monoxide ( CO ) which can kill you.

Use the generator outdoors in a well ventilated ,dry area , a minimum of three (3) feet away from any air intakes, openings or windows on the home and protect it from direct exposure to rain and snow possibly under a canopy, open shed or carport or a manufactured generator enclosure or shed.

Maintain a minimum of three (3) feet between the portable generator and the side of the home or any other combustible material and maintain a minimum of three (3) feet on all sides of the generator and above it to ensure the generator has adequate ventilation.

Do not use or operate a generator on combustible material such as your wooden deck or patio. It is best to operate the generator directly on the ground or on a concrete or similar surface.

Never run a portable generator when it will not be attended and shut it down before you go to bed.

Before refuelling your generator, turn it off and let it cool down. Gasoline spilled on hot engine parts can ignite.

Do not store any fuel inside of your home or attached garage.

Notes:

1. The information provided within this advisory still applies to units rated more than 7000 W but as larger rated units become less portable there is a trend to have those units permanently installed by professional's.

The intent of this advisory is to capture the minimum safety steps a person should take when using a typical small portable generator, the larger portable ( greater than 7000 W ) or permanently installed units may require greater clearances from combustibles and openings in the home and additional safety precautions may also be required and the owner should follow the manufacturers instructions in those situations.

2. The general information provided in this advisory is intended to be used as a general guide in the absence of any manufacturers directions.

3. With new technology or where scenarios are different from those indicated above consult the manufacturers instructions , a certified construction electrician or an electrical inspector before using the generator.

4. The above requirements and statements also apply when a portable generator is used at any other type of building or site other than a home.

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