

## Generator compliance

With the looming threat of load shedding and winter season approaching, residential generators have become a permanent feature in the homes of many South Africans. Nonetheless, countless people continue to illegally carry-out electrical installations when considering substitute power supplies.

In South Africa, any generator installations should adhere to the South African National Standard (ISO SANS 8528 series of standards). Although one need not concern themselves with ALL the requirements of the act, consumers should ensure that requirements for such installations are compliant with the act as well as other requirements such as the health and safety regulations because the main responsibility of such installations rests with them.

Although the SANS provides rules and regulations that need to be adhered to, it is important to take into consideration that different municipalities might have different laws regarding the installation of generators, contained in their bylaws. These bylaws were established to regulate how Eskom supplies electricity to households and what changes can be made to the existing electrical structure.

## Generator installation procedure

When installing generators, it is important to note the two main differences between a back-up generator and standby generators. Firstly, backup generators are independently run and are not installed or connected to the home electrical system. Therefore, during power interruptions, the generator would need to be plugged and started manually for appliances preferred by the consumer. Conversely, standby generators refers to those that require installation that is directly linked to the main switch board, and automatically switches on during power interruptions. According to the SANS, this installation should be undertaken by a qualified electrician and a certificate of electrical compliance (COC) be issued.

## Regulations for installing standby generators

When installing generators, the following should be considered:

- Only one generator may be installed per property. This excludes instances where a property has been subdivided, thus, each sub-division may have an installation.
- Generators should only be in operation during main power outages. However, it may run when required for service and maintenance work, between the hours of 09:00am to 17:00pm, Monday to Friday.
- Fuel storage should be positioned and secured in a place that eliminates potential risk of fire and away from children's reach.
- In neighbouring residential areas, the maximum noise level a generator can produce when operational at maximum capacity measured indoors, with open windows may not be greater than 25dB. At a distance of 7 to 8 meters, the maximum noise level should not exceed 55dB. Should the generator fail to meet these requirements, it shall be removed from the site.
- Section 39(1) states that consumers are required to have written consent from the Director of Eskom when generator installations are needed for their own operational requirements.
- Section 39(2) following the above mentioned, applications should be in writing and include full specifications of the generator and wiring diagram.

- Section 39(3) states that generators should be installed in a manner that does not induce power into Eskom's main electrical supply through back-feeding.
- Section 39(4) further states that generators should be installed on the consumers property. Therefore, should not exceed building lines or be visible from the road and adjoining properties.

## Consequences for non-compliance to rules and regulations

- Section 13 states that non-compliance with regulations could result in an offence that is punishable by fine or imprisonment for a period of not more than two years.
- Section 26(2) permits Eskom to disconnect the electricity supply of any individual person if they are found to be interfering with Eskom's main power supply.

## Things to consider when buying a generator

### 1. Which size generator should I purchase?

Generator capacity is dependent on the total sum of the maximum load expected at any given time by electrical loads that require to be powered simultaneously. This is measured in watts, and can be achieved by calculating all the loads that you would want to run simultaneously in your household. As a precautionary measure, identify which electrical units require the most electricity and add the amount to your total. This is to help ensure that your generator can serve larger units that require extra electricity to prevent system overload.

### 2. Which electrical loads should I consider powering with the generator?

- Kitchen, bathroom and sitting room lights
- Refrigerator
- Television
- Garage door
- Microoven
- Security (alarm system or electrical fencing)

### 3. Do I need an electrician to install the generator safely?

A licensed electrician is required to carry out generator installations and should provide you with a valid electrical certificate of compliance. To check if an electrician is registered, one may contact their local Electrical Contracting Board of South Africa to verify these credentials.

### 4. Can I plug my generator to the wall socket?

No. This would be regarded as backfeeding, which is extremely dangerous and illegal. For example, when earth leakages are left on, they may damage your generator when the power grid returns, which could potentially cause electrical and other hazardous fires. Additionally, should the option to switch off the earth leakage be considered to prevent this issue, it would be important to consider that the electrical system would not have earth leakage protection and could result in high electrocution risk for you and your family.

## Safety tips to be kept in mind

- Have a working smoke and Carbon monoxide detector in the house when using a generator.

- Keep the generator approximately 5 meters away from the house to reduce the risk from carbon monoxide and the risk of the generator's hot muffler melting vinyl siding.
- Never fuel a generator while it's operational or when it's hot to eliminate fire explosions.
- Ensure that the generator is operated under an open, well-constructed canopy-like structure. The structure should be on a dry surface, away from water contact.
- Never operate the generator with wet hands.