



## Public Safety Alert

### Warning on the use of inverters

Recently, it has been brought to the attention of Energy Safety that there are some portable inverters with 240 volt ac output and 12 volt or 24 volt dc (or similar) input that, under certain conditions, may develop a hazardous voltage between the battery terminals and the exposed metal of appliances or the inverter.

There are reports of accidents and a fatality with these inverters, possibly due to these conditions and how they were used. Where the inverter design does not ensure appropriate isolation between the battery supply and the 240 volt output supply for an electrical appliance, there is the possibility that under a fault condition, the battery terminal or any metal connected to the battery could become energised to a dangerous level.

Energy Safety is concerned that the use of some inverters may cause the operator to be at risk.

Inverters have been available for a number of years and are commonly used in vehicles and boats and in recreational applications. The use of the inverters has been allowed on construction and demolition sites since the publication of the 2003 edition of AS/NZS 3012.

The Standards Committee responsible for AS/NZS 3012 has decided that, as no standard exists for inverters, requirements will be developed for inverters used on construction and demolition sites. A review has commenced and will include the opportunity for public comment. This review particularly concerns the type of inverter with interconnections between the battery and the 240 volt output, and will consider all types of inverters. Under consideration are appropriate insulation requirements, equipotential bonding of all exposed metal and the battery, polarisation of the output and the need for RCD protection. It is proposed that units suitable for construction work be appropriately marked. Tests for verification and tagging will also be proposed.

Until this review is complete, it is the position of the committee that inverters should not to be used for construction and demolition work. The committee has requested that regulators advise stakeholders as a matter of urgency. Energy Safety endorses this direction until a solution is provided to this problem and will also consider the outcome for application in other than construction and demolition site environments.

In the interim period, other users of inverters are urged to be cautious when selecting an inverter, especially those with warnings such as *"Improper use can result in fatal voltages on the battery terminals, failure of the inverter and/or fire"*. Guidance should be obtained from the manufacturer or supplier to enable the selection of a safe type for the intended use.

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