



OFFICE OF THE CHIEF ELECTRICAL INSPECTOR

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SAFETY ALERT

**INVERTERS BANNED ON VICTORIAN
CONSTRUCTION SITES BECAUSE OF
POSSIBLE SAFETY PROBLEMS**

Because of a serious electrical safety problem being experienced with some portable inverters, the OCEI has banned the use of such equipment on construction and demolition sites until the problems have been resolved.

The OCEI has also urged other users of inverters to be extremely cautious when selecting such equipment.

The warning relates to some portable inverters with 240 volt ac output and 12 volt or 24 volt dc (or similar) input which, under certain conditions, may develop a hazardous voltage between the battery terminals to the exposed metal of appliances or the inverter.

Reports have been received of accidents and a fatality – not in Victoria - with these inverters possibly because of the way portable inverters are treated and used on construction and demolition sites. Portable inverters provide a means to operate portable equipment such as power tools and transistor radios from batteries. It is possible that the portable area used may not always result in safe operation for that equipment.

The OCEI warns that 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 voltage level.

The OCEI is concerned that the use of some inverters may cause the operator of the inverter to be at risk.

Inverters have been available for a number of years and are commonly used in vehicles, boats and recreational applications. The use of the inverters has been allowed for 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 national safety 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 240V output, but 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 be proposed.

Until this review is complete, the Standards Committee advises that inverters should not to be used for construction and demolition work and it has requested that safety regulators advise stakeholders as a matter of urgency.

The OCEI endorses this direction. Therefore until further advised invertors are not to be used on construction sites. The OCEI will also consider the situations in other than construction and demolition site environments and further advise as necessary.

In the interim 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. Inquiries can also be directed to the OCEI on (03) 9203 9700.

19 July 2004

Safety Alert - Warning on the use of inverters

A nationwide warning on the use of electrical inverters has been issued by Australian electrical regulators.

Queensland's Electrical Safety Office said portable inverters with 240 volt ac output and 12 volt or 24 volt dc (or similar) input must be used strictly according to manufacturers instructions. There is a ban on the use of inverters at construction sites.

There is a ban on the use of inverters at construction sites.

Domestic use of inverters is commonly restricted to vehicles, boats and recreational applications. Under incorrect usage, a hazardous voltage may build up between the battery terminals to the exposed metal of appliances or the inverter, threatening death or injury to the user.

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.

Meanwhile, the Australian and New Zealand Standards Committee will develop a standard for inverters.

Insulation requirements, equipotential bonding of all exposed metal and the battery, polarisation of the output, and the need for RCD protection will be reviewed. It is proposed that units suitable for construction work be appropriately marked and tested for verification and tagging.

For more information about this warning call 1300 650 662

Media calls to 3225 2054.