

Selling electrical equipment operating at extra-low voltage including battery-operated equipment

Energy Safe Victoria

Overview

Extra Low Voltage (ELV) is electrical equipment that operates at a voltage below 50V AC RMS or 120V (ripple-free DC).

Equipment operating at ELV can still present a safety hazard, hence the need to ensure that they comply with the relevant product safety standard.

In Victoria, all electrical equipment, including those that are ELV powered, are required to be electrically safe before they are offered for sale.

The supplier or manufacturer of this equipment can demonstrate that their equipment is electrically safe by showing compliance with the requirements of AS/NZS 3820.

AS/NZS 3820 prescribes outcome-orientated safety criteria for electrical equipment. Compliance with the safety criteria can generally be demonstrated by compliance to the relevant standards.

The relevant standard for ELV operated equipment is:

- an Australian Standards (AS) or joint Australian Standards and New Zealand Standards (AS/NZS) that applies specifically to the equipment type or,
- if there is not a specific AS or AS/NZS standard that applies to the equipment type but there is an International Electrotechnical Commission (IEC) standard that applies, then the IEC standard.
- If there is no AS, AS/NZS or IEC standard, then the requirements of clause 5.1 of AS/NZS 3820 apply.

Note: AS/NZS 3820 also indicates that, at times, more than one or more standards may apply to an item of equipment.

It is the responsibility of the supplier of the concerned equipment to choose the most applicable standard for the piece of equipment. However, if the chosen standard is found to be inappropriate or inadequate, then the equipment will be deemed not compliant with AS/NZS 3820 and the supplier may be in breach of the Electricity Safety Act if they continue the sale/supply of the equipment.

The requirement to meet the safety criteria is a starting point for a supplier to ensure the equipment is electrically safe, however, it may not be everything a supplier will need to do. Suppliers should address all the risks of the equipment to ensure it is electrically safe.

Components that form part of the ELV operated equipment

The components that form part of this equipment (including batteries) also need to show compliance with their relevant safety standards.

As an example, ELV equipment that incorporates Li-Ion batteries will require to have the batteries comply with their relevant safety standard (e.g. IEC 62133).

ELV equipment supplied with detachable mains operated power supply

Where the product is supplied with a separate power supply, the power supply and the product are assessed together to the product's relevant safety standard.

Please refer to the [EESS information bulleting number 21-030 for futher information](#).