

BUILDER'S CONSTRUCTION SUPPLIES REQUIREMENTS

March 2014

Energy Safe Victoria (ESV) continues to receive complaints concerning defective builder's construction supplies. These complaints relate to installations being connected to supply with defects.

The most common defects are:

- support structure not securely fixed;
- mechanical protection not provided where required; and
- enclosures being installed that are not IP rated or fit for purpose.

It is important to check the manufacturer's installation instructions. Most switchboard / meter enclosures are only rated at IP23 when recessed in a wall. Some enclosures have manufactured cable entries that penetrate through the enclosure's top and back, and allow the ingress of moisture. These enclosures are not suitable for connection to supply until they are installed within a wall.

As a result of these complaints, ESV have conducted audits of construction supplies in permanent positions, where only a small number are compliant. It is unacceptable that defective installations are being connected.

COMMON DEFECTS THAT HAVE BEEN DETECTED:



The maximum distance between the enclosure and steel mechanical support must not exceed 100mm. The steel provides mechanical protection for the electrically unprotected consumer's mains and earth conductor.

Clause 1.5.14 of
AS/NZS 3000:2007, Wiring Rules.



Mechanical protection shall be provided to a depth of at least 500mm below ground level.



A typical excavation prior to the pouring of the concrete slab. The steel pipe does not continue below the excavation.



The post supporting the enclosure is not securely fixed and would become unstable if the ground was excavated around the post.

Clause 1.7 of
AS/NZS 3000:2007, Wiring Rules



The hose clamps securing the meter enclosure support to the pipe driven into the ground do not have the required mechanical strength, and are not fit for purpose.

Clause 1.7 of
AS/NZS 3000:2007, Wiring Rules

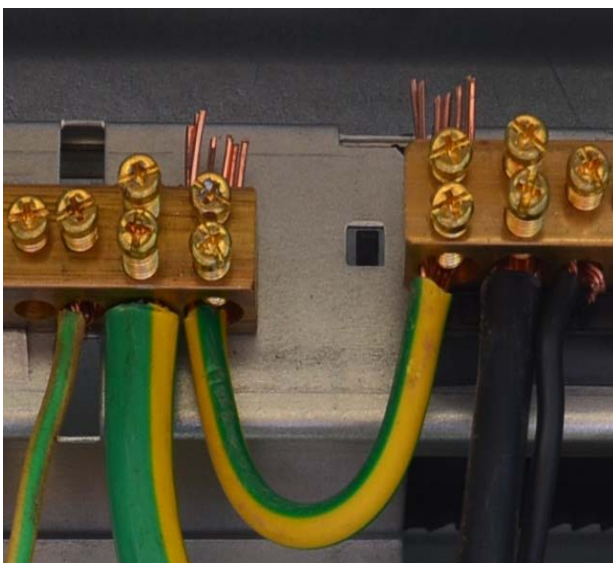


This enclosure has been manufactured with cable entries that protrude through the metal surface that allows the ingress of moisture. It would only be IP rated when installed within a wall.

This enclosure would not be fit for purpose if installed exposed to the weather even temporarily.

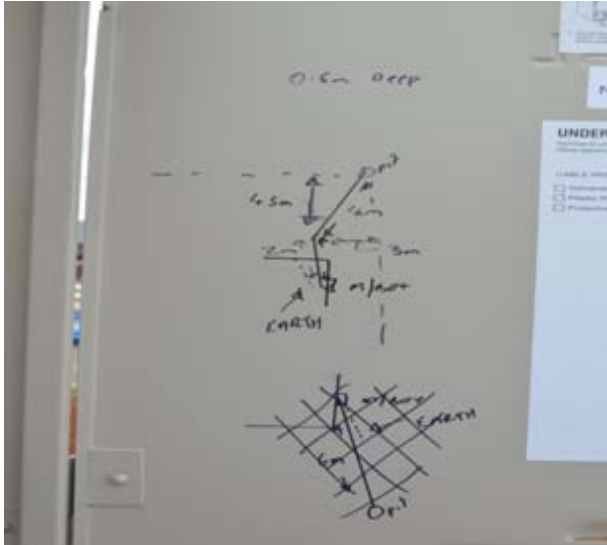
The manufacturer states “**the enclosure has been tested and has an IP23 rating when it is installed in a wall**”.

Clause 1.7, 1.7.4 & 1.5.14 of
AS/NZS 3000:2007, Wiring Rules.



Cables are not prepared to prevent spreading or escape of individual strands.

Clause 3.7.2.5 of
AS/NZS 3000:2007, Wiring Rules.



This drawing does not meet the minimum requirement.

Underground plan drawings must be of a permanent form, recorded on durable material, showing the underground wiring location within an accuracy of 200mm.

Regulation 218 of the *Electricity Safety (Installations) Regulations 2009*.



This enclosure, installed in this manner is not fit for purpose in this application because:

- It is not IP rated as installed
- Subject to ingress of moisture due to the manufactured cable entries
- It is not securely fixed

It was inspected and passed as being compliant and connected to supply.

Clause 1.7, 1.7.4 & 1.5.14 of *AS/NZS 3000:2007, Wiring Rules*.



This enclosure, installed in this manner, is also not fit for purpose in this application because:

- It is not IP rated as installed
- Subject to ingress of moisture due to the manufactured cable entries
- Conduits are not mechanically protected
- The bracket is not designed for permanent support

This enclosure was used as a construction supply and remained as the distribution board for 3 units.

Clause 1.7, 1.7.4 & 1.5.14 of *AS/NZS 3000:2007, Wiring Rules*.

ESV is not opposed to the permanent mains being used as builder's construction supplies, and will allow an enclosure that has been approved for installation within a wall to be used as a builders construction supply during the construction period if it complies with:

- Being fit for purpose and securely installed.
- The enclosure remains secure when the ground around it is being excavated.
- Mechanical protection is provided for the “electrically un-protected consumer's mains” and conduit during construction and excavation.
- There are no cable entries without a sealing cap through the top of the enclosure.
- The cable knockouts on the back or sides of the enclosure do not protrude through the metal surface to prevent the ingress of moisture.

ENCLOSURES THAT ARE PERMANENTLY EXPOSED TO THE WEATHER SHALL BE FIT FOR PURPOSE AND APPROVED FOR THE LOCATION