



# MONTHLY ELECTRICAL INCIDENTS

ASP Manufacturing

July 2023



**Date: 3<sup>rd</sup> July 2023**

**Location: Springhill PFD Offices, Port Kembla – “Sky Lab”**

**Reference: i2324093 – 240 Volt, 3 pin appliance lead with no earth**

During electrical testing and tagging of new motorised office desks, it was discovered that the 240 Volt, 3 pin appliance leads of some failed the earth continuity test. The manufacturer of the leads had made them without an earth wire between the plug and connector earth pins. The desk was a double insulated appliance, so technically did not require an earthing conductor. However, there is a risk is the leads could be unplugged and used on other equipment that requires an earth conductor (e.g. test equipment or office printers with metallic parts). The supplier replaced the leads, and confirmed all other desks ordered have correctly earthed leads. It is important new appliances are tested before they are put into service, especially if they have 240 Volt detachable leads. Potential problems like this can be avoided by regularly testing and tagging our electrical equipment on site.



Common 240 Volt Appliance Lead



Earth Pins at bottom of both Socket and Plug



Only 2 wires in cable, no Earth conductor

**Date: 6<sup>th</sup> July 2023**

**Location: Coopers Plains, QLT Warehouse - Loading Dock**

**Reference: i2325590 – 240 Volt Cable severed in fork lift area**

A 240 Volt plug and severed cable was found in a loading dock area where forklifts operate. The switch of the power point it was normally plugged into was still in the on position. The cause of the damage could not be identified, however the installation provided limited protection to damage from moving machinery and operations in this area.

The movement of machinery, people, wheelbarrows, trolleys etc. needs to be considered when installing electrical equipment, and appropriate mechanical protection used. A mechanical barrier such as fixed bollards in front of this area would reduce the risk of this happening.



240 Volt plug and severed cable



Power Point it is normally plugged into



Damage to conduit and junction box below

**Date: 10<sup>th</sup> July 2023**

**Location: Plate Mill, Port Kembla – Scale Pit Area**

**Reference: i2327335 – Exposed Conductors when electrical box rusted away**

Exposed conductors were found in a pit after the lid was removed during cable installation work. The wiring had originally been enclosed in a steel box that had since rusted away. There was also a rusted steel beam that had fallen across the cables inside. After further investigation of the area, other steel junction boxes were found to be in a similar condition. The steel junction boxes and lids had deteriorated from exposure to the outside environment.

When inspecting outdoor cable pits or enclosures, care should be taken when removing lids to look for corroded steel and exposed or dislodged wiring. Consider isolation before removing pit covers if there are concerns with the condition of the installation or the condition is unknown.

The use of stainless, galvanized steel or aluminum would prolong this decay. IP rated PVC enclosures, if suited to the environment, would eliminate the issue of rust too.

Electrical installations must be adequately inspected and maintained to ensure integrity and safety.



Pit with lid removed



Exposed wiring inside pit



Nearby Steel Junction Boxes

**Date: 17<sup>th</sup> July 2023**

**Location: BOS, Port Kembla – Admin Building Laboratory**

**Reference: i2330603 – Electrical Switch Crackling & Buzzing**

Water had been leaking from the ceiling of a bathroom for several days. The leak was notably getting worse on the 4<sup>th</sup> day, and then by the 7<sup>th</sup> day, a crackling or buzzing noise was heard from the electrical switch on the opposite wall. By then, water was running down the ceiling, through an electrical conduit, and into the switch. Discoloured water and smoke was coming out of the switch, and by the time electricians arrived the smoke was denser, and a burning smell present. Power was disconnected and isolated at the point of supply, for future repair.

Failure to fix a water leak straight away allowed water to find its way into electrical equipment.

Water leaks need to be reported and fixed as soon as possible, especially if near electrical gear.

Electrical equipment should be installed to prevent water ingress. Some examples include bottom cable entries, sealing existing top entry conduits, positioning ends of conduit in such a way they cannot fill with water, drainage points or holes.

Electrical Switch showing signs of water ingress →

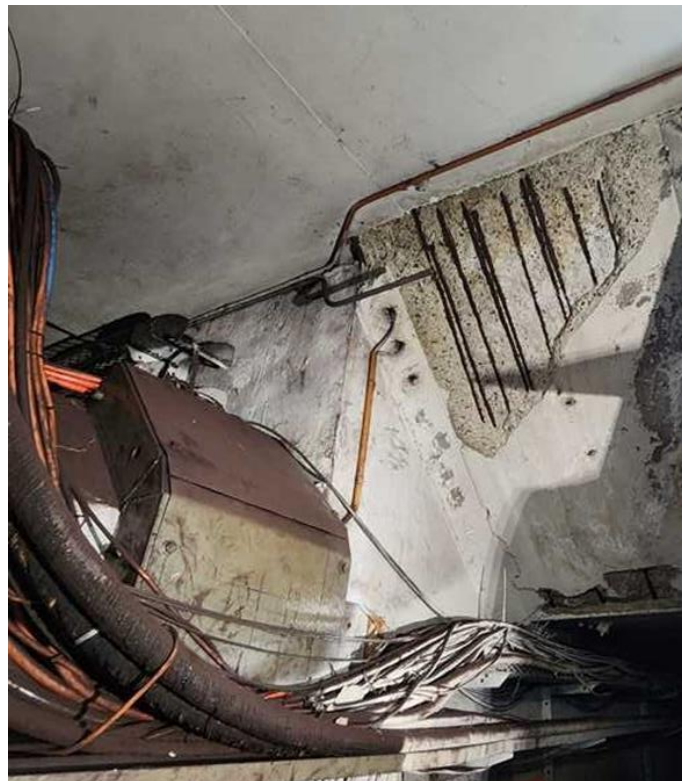


Pieces of concrete were found on the floor of a switch room (“contactor house”). Upon further investigation, up to 3 spalling areas were identified. Due to affected areas being out of normal thoroughfare, they were not spotted earlier until the area was searched. The area was barricaded, and a civil contractor contacted to assess and make safe.

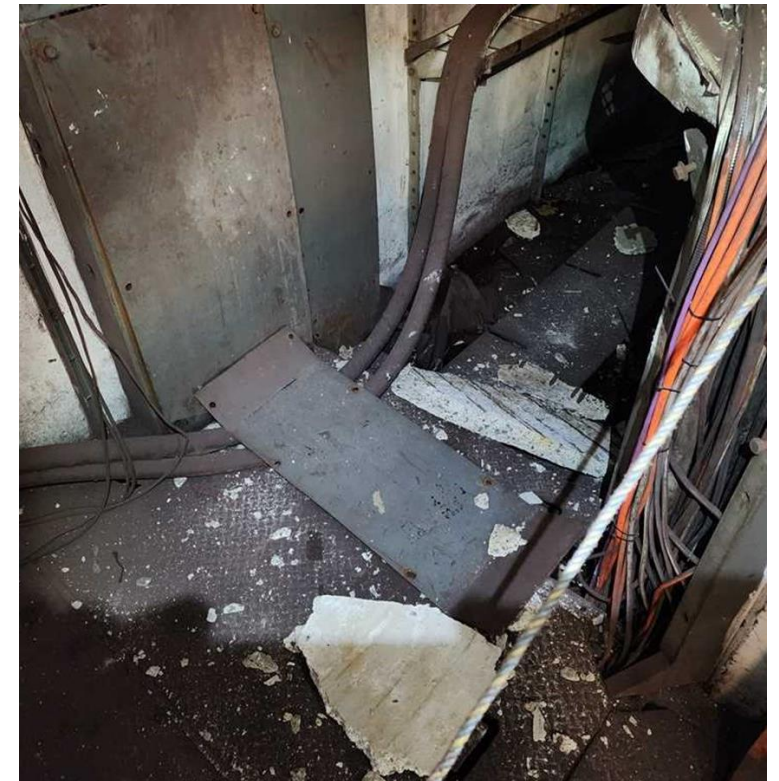
- Inspections of the switch rooms generally concentrate on electrical hazards, and not always the structural integrity of the building around them.
- Concrete can deteriorate with age and fall unexpectedly.
- Regular assessment of buildings and concrete will help us find warning signs before they become a hazard.



Concrete pieces behind electrical panels



Roof above cable trays deteriorating



Concrete falling near cables