

<b>Hazard identification tool – Electrical tools on-site</b>			
<b>Job activity (Tasks)</b>	<b>What can harm you (Hazards)</b>	<b>What can happen (Risks)</b>	<b>Causes which need to be managed (Controlled)</b>
<b>General Planning</b>	Inadequate qualifications and /or experience, planning, consultation and improvisation.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Electrical contractor not licensed.</li> <li>• Inadequate consultation with relevant employees.</li> <li>• Contractor not experienced in the type of work undertaken.</li> <li>• Australian Standard AS/NZS 3012 not followed.</li> <li>• Improvisation using inappropriate wiring methods or electrical materials.</li> </ul>
	Inadequate maintenance and/or routine checks of electrical equipment by a competent person.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Where applicable:</li> <li>• Earth Leakage Switch not trip tested monthly.</li> <li>• Earth Leakage Switch not subject to a calibration test.</li> <li>• Flexible extension leads, portable tools and electrical plant not inspected, tested and tagged three monthly.</li> </ul>
	Use of power tools and/or electrical plant.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Electrical equipment faulty.</li> <li>• Extension lead faulty.</li> <li>• Lead severed by power tool blade.</li> <li>• Tool not double insulated – old metal type.</li> <li>• Tool placed in water or other liquid.</li> </ul>

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	Short circuit resulting in an electrical fire.	Electrical fire, burns and/or contact with electricity.	<ul style="list-style-type: none"> <li>• Wrong type of fire extinguisher available i.e. water not powder or CO<sub>2</sub>.</li> <li>• Person not trained in the use of fire fighting equipment.</li> <li>• Extinguisher positioned at fire source e.g. base of switchboard.</li> </ul>
<b>Excavation and demolition</b>	Underground electrical services.	Strike underground cabling with machine, hand tool or other.	<ul style="list-style-type: none"> <li>• Underground services not located and/or isolated.</li> <li>• Drawings incorrect, services not in their expected location.</li> <li>• No excavation permit to dig system in place.</li> <li>• Cables not exposed by hand before digging using plant.</li> </ul>
	Power lines near the site and power to the site.	Strike or working too close to power lines, e.g. metal roof sheets, ladder, scaffold or machine such as a crane or excavator.	<ul style="list-style-type: none"> <li>• Power lines not isolated by the Supply Authority where possible.</li> <li>• Power lines not covered or enclosed.</li> <li>• Machine operating too close to power lines.</li> <li>• Spotter not used to supervise machine operating near power lines.</li> <li>• Access positioned too close to power lines.</li> <li>• Strong wind causes power lines to swing closer to work area.</li> </ul>

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	Entering the Danger Zone. Operating distances for plant from a live overhead power line not observed.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Plant too close to overhead power lines:               <ol style="list-style-type: none"> <li>a) is within 0.5 metres of a live insulated overhead power line or aerial bundled conductor line of a voltage of not more than 1000 volts;</li> <li>b) is within 1.0 metres of a live uninsulated overhead power line of a voltage of not more than 1000 volts;</li> <li>c) is within 3.0 metres of a live overhead power line, whether insulated or not, of a voltage exceeding 1000 volts but not more than 33000 volts; or</li> <li>d) is within 6.0 metres of a live overhead power line, whether insulated or not, of a voltage exceeding 33000 volts;</li> </ol> </li> <li>• Inspection of the work area not conducted prior to starting work.</li> <li>• Spotter not used to constantly observe the operation of the plant whilst working or travelling in the vicinity of the overhead power lines.</li> </ul>
	Power supply within site amenities.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Faulty electrical appliance or equipment within shed.</li> <li>• Appliance or equipment not regularly inspected by a licensed electrician.</li> </ul>
	Inappropriate electrical lighting to work area.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Lighting unprotected, e.g. no wire guard or diffuser.</li> <li>• Single lamp holders with bare light bulb used.</li> </ul>

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	Inappropriate electrical supply to work area.	Contact with electricity,..	<ul style="list-style-type: none"> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Electrical switchboard does not have lid and/or is not weatherproofed.</li> <li>• Electrical switchboard is not secured.</li> <li>• Electrical switchboard does not have bushed holes to prevent damage to leads.</li> <li>• Leads are damaged by the switchboard lid – not connected through bushed holes in the base.</li> </ul>
	Undetected live electricity within structure to be demolished.	Contact with electricity.	<ul style="list-style-type: none"> <li>• No Isolation Permit system in place prior to demolition.</li> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Licensed electrical contractor or authorised person not used to switch off/isolate power.</li> <li>• Power not isolated to prevent it being switched back on, e.g. remove main fuse or tag out method.</li> <li>• On site labour do not treat all power circuits as live.</li> <li>• Other power source from outside the site not identified and disconnected.</li> <li>• Irregular or unauthorised connections not identified and disconnected.</li> <li>• Temporary connections not identified, tagged and isolated.</li> <li>• Water pipe electrified.</li> </ul>

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<b>Structures trades</b>	Power sited too far from work area.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Electrical supply not provided within the maximum length allowable for the rating of the extension lead used</li> <li>• Several extension leads connected together (in series).</li> <li>• Insulated hooks not used - leads wrapped around metal components, e.g., formwork.</li> <li>• Lead/s run between floors.</li> <li>• Lead severed by sharp edge.</li> <li>• Extension lead not secured above work area - lying in water or other liquid.</li> </ul>
<b>Roofing</b>	Live electricity in roof cavity.	Electric shock, burns or electrocution.	<ul style="list-style-type: none"> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Insulation to old wiring frayed or easily damaged – e.g. brittle or old metal conduit.</li> <li>• Power not switched off.</li> <li>• Power not isolated to prevent it being switched back on, e.g. remove main fuse or tag out method.</li> </ul>
<b>Roofing</b>	Electricity on or near the site.	Electric shock, burns or electrocution.	<ul style="list-style-type: none"> <li>• Insulation to old wiring frayed or easily damaged – eg brittle or old metal conduit.</li> <li>• Work area too close to power lines</li> <li>• Tiger tails (insulation) not adequately boxed in when adjacent to scaffold or at risk of being penetrated by metal roofing materials with sharp edges.</li> <li>• Tiger tails (insulation) not extended to an appropriate distance past the boundary.</li> </ul>

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<b>Finish Trades</b>	Live electricity too close to scaffold erection or completed scaffold is moved too close during use.	Electric shock, burns or electrocution.	<ul style="list-style-type: none"> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Working too close to live power lines.</li> <li>• Tiger Tails (insulation) not in place on power lines or wet conditions make them ineffective.</li> <li>• High wind causes power lines to swing closer to work area.</li> <li>• Scaffold component strikes and shatters unprotected light bulb.</li> </ul>
<b>Finish trades</b>	Electrical supply too close to work area.	Electric shock, burns or electrocution.	<ul style="list-style-type: none"> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Working too close to live power lines.</li> <li>• Tiger tails (insulation) not in place on power lines or wet conditions make them ineffective.</li> <li>• High wind causes power lines to swing closer to work area.</li> <li>• Scaffold component strikes and shatters unprotected light bulb.</li> </ul>
<b>Roofing</b>	Undetected live electricity within ceiling or structure.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Licensed electrical contractor or authorized person not used to switch off/isolate power.</li> <li>• Power not isolated to prevent it being switched back on, e.g. remove main fuse or tag out method.</li> </ul>

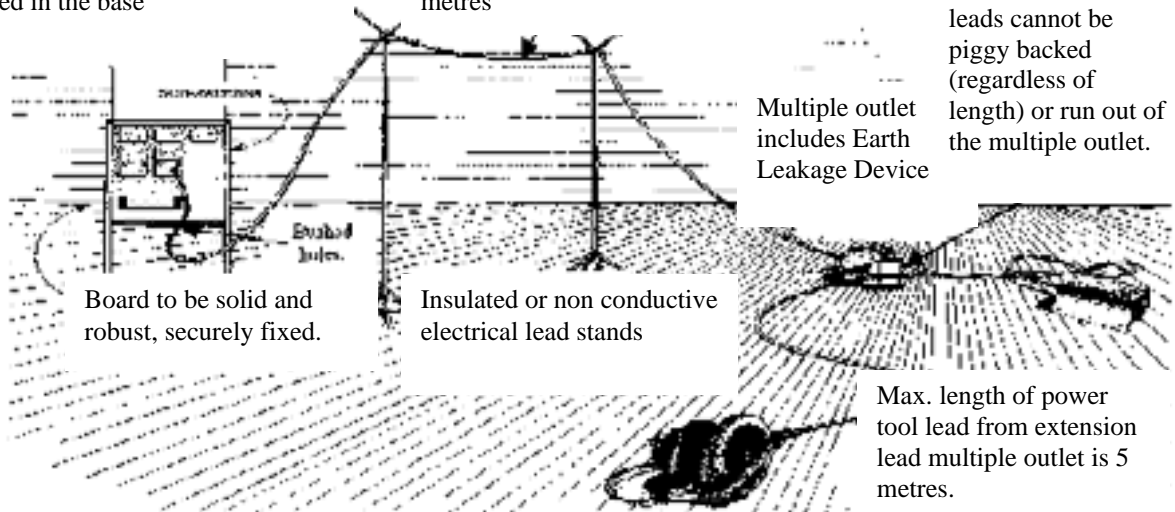
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<b>Public access</b>	Live power on site – un-authorised access.	Contact with electricity.	<ul style="list-style-type: none"> <li>• Electrical switchboard not locked outside work hours.</li> <li>• Earth Leakage Switch not installed on mains supply or portable generator.</li> <li>• Site not adequately fenced or guarded.</li> </ul>

## Diagram: Guide to electrical requirements on site.

Lockable cover to be closed with leads connected through bushed holed in the base

Max. length of 10amp (1.5 sq mm conductor area) is 32 metres

**Note:** Extension leads cannot be piggy backed (regardless of length) or run out of the multiple outlet.



Board to be solid and robust, securely fixed.

Insulated or non conductive electrical lead stands

Multiple outlet includes Earth Leakage Device

Max. length of power tool lead from extension lead multiple outlet is 5 metres.

Source: Adapted from Hazard Identification & Risk Assessment Manual for Builders. WorkCover NSW, 1997