

IDENTIFICATION TOOL FOR

METAL ROOFING



HAZARD PROFILE 2001

WorkCover NSW Health and Safety Hazard Profile

Disclaimer

This publication may contain occupational health and safety and workers compensation information. It may include some of your obligations under the various legislations that WorkCover NSW administers. To ensure you comply with your legal obligations you must refer to the appropriate legislation.

Information on the latest laws can be checked by visiting the NSW legislation website (www.legislation.nsw.gov.au) or by contacting the free hotline service on 02 9321 3333.

This publication does not represent a comprehensive statement of the law as it applies to particular problems or to individuals or as a substitute for legal advice. You should seek independent legal advice if you need assistance on the application of the law to your situation.

Hazard Profile Preamble

This Hazard Profile is a tool to assist in the identification of occupational health and safety (OHS) hazards in relation to metal roofing work.

This tool is one of a series of Hazard Profiles developed by the University of New South Wales School of Safety Science and Building Research Centre in support of the Construction Memorandum of Understanding (MOU). The MOU was signed in 1998 between the NSW Government and the Chief Executive Officers of the principal contractors and major industry associations in the NSW construction industry.

The signatories to the MOU have worked in partnership to implement measures to improve the construction industry's OHS and injury management performance.

The Hazard Profiles were developed following interviews with principal contractors and subcontractors, which highlighted the accurate identification of hazards as a significant weakness in the successful management of subcontractor safety.

Hazard Profiles can be used as a guide to help:

1. identify generic hazards and the controls required for a job task;
2. assist in formulating relevant and effective safe work method statements;
3. guide or induct new workers in the typical hazards for a specific trade;
4. check that all general trade specific hazards have been identified in safety documentation required by the principal contractor.

Other products developed under the auspices of the Construction MOU include:

1. Subby Pack: OHS Contractor Management Tool
2. CHAIR: Safety in Design Tool
3. Hazard Profile: Identification Tool for Bricklaying
Identification Tool for Electrical Hazards on-site
Identification Tool for Formwork
Identification Tool for Aluminium Mobile Scaffolds
Identification Tool for Steel Reinforcement Fixing
Identification Tool for Concrete Placement
Identification Tool for Demolition
4. Supervisor Manual: OHS Training Tool
5. Safety Meter: Positive Performance Measurement Tool

Another valuable tool to assist small and medium-sized businesses to systematically manage safety is WorkCover's *Workplace Safety Kit*.

More information about each of these products can be obtained by contacting WorkCover NSW on 131050 or www.workcover.nsw.gov.au.

Hazard Profile - Metal Roofing

Job Activity (Tasks)	What Can Harm You (Hazards)	What Can Happen (Risks)	Causes Which Need to be Managed (Controlled)
General planning	Inadequate training, consultation, planning and improvisation.	Task specific injuries due to inexperience, inadequate consultation or failure to provide appropriate equipment.	<ul style="list-style-type: none"> • Insufficient skills (competency) to complete the required task. • Inadequate consultation with relevant employees. • Inadequate competent supervision. • Planning for required equipment not carried out. • Improvisation using inappropriate equipment.
Planning by Principal Contractor or Subcontractor depending on contract conditions	Electricity on or near the site.	Electric shock or electrocution.	<ul style="list-style-type: none"> • Earth Leakage Switch not installed on mains supply or portable generator. • Insulation to old wiring frayed or easily damaged – e.g. brittle or old metal conduit. • Work area too close to power lines, i.e. 4 metres or less or conductive roofing components greater than 4 metres in length. • Pyro connection (fire backup for alarm) not identified, tagged and isolated. • Other power source from outside the site not identified and disconnected. • Irregular ("bodgie") connections not identified and disconnected. • Temporary connections not identified, tagged and isolated. • Tiger tails not adequately boxed in when adjacent to scaffold or at risk of being penetrated by metal roofing materials with sharp edges. • Tiger tails not extended to an appropriate distance past the boundary.
	Hazardous materials in structure when re-roofing, e.g.	Exposure to hazardous materials.	<ul style="list-style-type: none"> • Hazardous substance survey not conducted prior to commencement of work. • Detailed removal techniques

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	fibro roofing (super 6) and eaves, asbestos insulation, synthetic mineral fibres, lead contaminated dust in ceilings.		<p>not documented.</p> <ul style="list-style-type: none"> • Specialized workers (licensed) not involved in removal or workers not inducted. • Hazardous materials not reported when detected. • Required precautions for removal, handling and disposal not followed. • Removal techniques inappropriate for containment of hazardous material – scatter material over a wide area. • Other workers or the public not prevented from entering areas where hazardous materials exist or are being removed. • No warning signs or signs insufficient. • Hazardous material left on site after completion of work. • Bagged materials not removed before damage to bag/s occurs.
	Contact with substance classified as hazardous.	Short or long term health affect, e.g overcome by vapours, rash, allergy, disease.	<ul style="list-style-type: none"> • Risk assessment not undertaken. • Alternate (safer) substance not considered. • No MSDS provided. • No PPE or incorrect PPE for the required task. • Safety instructions ignored and/or training in safe use of the substance not provided. • Barrier cream, or similar, not available or not worn.
	Poor access.	Slips, trips and falls; abrasions, strains and sprains; manual handling injuries such as back damage.	<ul style="list-style-type: none"> • Access to work area cluttered – poor housekeeping. • Inadequate access for roofers and their equipment. • Access ways not suitably defined.
	Working at height.	Fall from the edge or through	<ul style="list-style-type: none"> • Inadequate fall prevention system provided where the

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		the roof or roof framing.	<p>potential fall height exceeds 1.8 metres and or pitch is greater than 25 degrees and or obstruction exist in the potential fall zone e.g. fence or building materials/rubbish.</p> <ul style="list-style-type: none"> • No means of rescuing a person from a safety harness following an arrested fall. • Access to work area (roof) inappropriate. • Footwear inappropriate for roof work.
General planning by Subcontractor	Exposure to ultra violet light, glare.	Skin cancer; sunburn, eye damage.	<ul style="list-style-type: none"> • Personal protective clothing – sunscreen 15+, shirt, hat not provided or not worn. • AS rated sunglasses not worn.
Stripping and removal of rubble or other from roof cavity	Hazardous substances.	Exposure to hazardous substances.	<ul style="list-style-type: none"> • Unidentified sources within structure, e.g. fibro, asbestos insulation or lead dust in roof space. • Hazardous substance survey not conducted prior to commencement of work. • Required precautions for removal, handling and disposal not followed.
	Removing old roofing material.	Struck by falling debris.	<ul style="list-style-type: none"> • Poor separation and/or protection of work and public areas on the building perimeter or within the building if it is in use. • Insufficient planning for lowering of materials. • Uncontrolled lowering of large roof sheets or other material, e.g. tiles. • Sheet/s caught by wind – too windy. • No warning signs provided. • Insufficient overhead protection. • Spotter not used to stop others entering the potential drop zone. • Insufficient barrier to prevent materials flying out of bins or

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			other container on the ground.
	Working at height.	Fall from the edge or through the roof or roof framing.	<ul style="list-style-type: none"> • Inadequate fall prevention system provided where the potential fall height exceeds 1.8 metres and or pitch is greater than 25 degrees and or obstruction/s exist in the potential fall zone e.g. fence or building materials. • Old roofing material or skylight/s brittle. • Insufficient number of drop zones for stripped material requiring increased traffic on the roof to lower materials at one location - significantly increasing the risk of falls. • Walking in the middle of battens not on the rafter/batten joint. • Old battens not stripped from the top downward to provide footholds.
	Working in roof cavity.	Fall through ceiling.	<ul style="list-style-type: none"> • Inadequate fall prevention system where ceiling joists are spaced greater than 600mm centres, e.g area not planked.
	Live electricity in roof cavity.	Electric shock or electrocution.	<ul style="list-style-type: none"> • Earth Leakage Switch not installed on mains supply or portable generator. • Insulation to old wiring frayed or easily damaged – e.g. brittle or old metal conduit. • Power not switched off. • Power not isolated to prevent it being switched back on, e.g remove main fuse or other method.
	Dust and other fibres in roof cavity.	Inhalation, respiratory disease or other.	<ul style="list-style-type: none"> • No PPE provided for the required task. • Incorrect PPE for the required task. • Contaminated dust spread via clothing - no disposable overalls/suit provided.
	Removing old	Puncture wounds	<ul style="list-style-type: none"> • No PPE provided for the

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	battens or roof framing.	or cuts.	<p>required task.</p> <ul style="list-style-type: none"> • Incorrect PPE for the required task.
Secure roof battens	Use nail gun to secure battens.	Puncture wound, shattered or deflected nail – eye injury.	<ul style="list-style-type: none"> • Fingers and hands not kept away from the nail fixing location. • No PPE or incorrect PPE for the required task.
	Cutting battens with power tools.	Electric shock or electrocution.	<ul style="list-style-type: none"> • Electrical equipment faulty. • Extension lead faulty or “female” plug not adequately shrouded. • Lead severed by power saw blade or sharp edge. • Earth Leakage Switch not installed on mains supply or portable generator.
	Use of power tools or nail gun.	Noise.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task.
	Long metal battens.	Electric shock or electrocution.	<ul style="list-style-type: none"> • Long metal battens strikes or comes close to nearby power lines. • Tiger tails not fitted to nearby power lines.
	Drop long metal roof batten.	Struck by falling debris causing serious injury.	<ul style="list-style-type: none"> • Failure in communication between person on the ground and roofer. • Inappropriate overhead protection or barrier exclusion zone immediately below. • No overhead protection.
Install safety mesh	Lifting materials by crane onto the roof framing.	Serious injury to person/s from load being lowered onto roof framing or uncontrolled fall of load.	<ul style="list-style-type: none"> • Qualified (ticketed) Dogger or crane driver not used. • No warning given to roofer/s by Dogger landing load onto framing. • Individual loads not inspected and cleared before lifting commences, resulting in short items not adequately secured by slings. • Slings not regularly inspected and tested. • Sling capacity overloaded. • Load not slung correctly, e.g. long loads centre slung, loads cradled or lifted using straps/wires tied around steel

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			<p>instead of using the correct sling/chain.</p> <ul style="list-style-type: none"> • Dragging trapped slings out from under loads using the crane. • Load strikes object, e.g. structure, when lifting or lowering. • Communication error between Dogger and crane driver.
	Working at height.	Fall from the edge or through the roof or roof framing.	<ul style="list-style-type: none"> • Inadequate fall prevention system provided when rolling out mesh. • Mesh not appropriately fastened to purlins. • Mesh not appropriately lapped and/or joined. • Inappropriate working platform provided. • Sub-standard mesh – not approved to AS1639. • Footwear inappropriate for roof work.
Sarking	Manual Handling.	Strains and sprains; injuries such as back damage.	<ul style="list-style-type: none"> • Lifting large rolls of sarking. • Smaller rolls of sarking not specified. • Crane or other lifting device not considered.
	Synthetic fibres in insulation blanket.	Skin irritation.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task.
	Working at height.	Fall from the edge or through the roof or roof framing.	<ul style="list-style-type: none"> • Wind catches sarking causing roofer to lose balance. • Inadequate fall prevention system provided around roof perimeter.
Cutting Sheets	Sharp edges.	Cuts, lacerations, puncture wounds.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task.
	Use of power tools to cut metal sheets.	Electric shock or electrocution.	<ul style="list-style-type: none"> • Electrical equipment faulty. • Extension lead faulty or “female” plug not adequately shrouded. • Lead severed by power saw blade or sharp edge. • Earth Leakage Switch not installed on mains supply or

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			portable generator.
	Use of power tools for cutting.	Noise.	<ul style="list-style-type: none"> No PPE or incorrect PPE for the required task.
	Cutting with power tool - saw, nibbler, angle grinder or other.	Serious cuts from contact with saw blade or disk.	<ul style="list-style-type: none"> Saw blade or grinder disk unguarded. Guard faulty. Saw blade or cutting disk damaged causing tool to catch and jump. Cutting disk badly worn – blade disintegrates. Wrong type of blade or cutting disk used. Grinder not fitted with “Dead Mans” switch.
	Working at height.	Fall from the edge or through the roof or roof framing.	<ul style="list-style-type: none"> Inadequate fall prevention system provided at roof perimeter. Inappropriate working platform provided. No catch scaffold. Where practicable cutting not carried out on the ground.
	Unsecured metal roof sheet offcuts on roof.	Struck by falling debris causing serious injury.	<ul style="list-style-type: none"> Where practicable cutting not carried out on the ground. Offcuts not immediately removed from the roof. Offcuts not weighted down against windy weather.
			<ul style="list-style-type: none"> Inappropriate overhead protection or barrier exclusion zone immediately below. No overhead protection.
Lifting and storing sheets onto roof	Lifting materials by crane onto the roof framing.	Serious injury to person/s from load being lowered onto roof framing or uncontrolled fall of load.	<ul style="list-style-type: none"> Qualified (ticketed) Dogger or crane driver not used. No warning given to roofer/s by Dogger landing load onto framing. Individual loads not inspected and cleared before lifting commences, resulting in short items not adequately secured by slings. Slings not regularly inspected and tested. Sling capacity overloaded.

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			<ul style="list-style-type: none"> • Load not slung correctly, e.g. long loads centre slung, loads cradled or lifted using straps/wires tied around steel instead of using the correct sling/chain. • Dragging trapped slings out from under loads using the crane. • Load strikes object, e.g. structure, when lifting or lowering. • Communication error between Dogger and crane driver.
	Working at height.	Fall from the edge or through the roof or roof framing.	<ul style="list-style-type: none"> • Inadequate fall prevention system provided at roof perimeter. • Inappropriate working platform provided. • No catch scaffold.
	Roof sheets stored on roof.	Struck by falling sheet.	<ul style="list-style-type: none"> • Bundle of sheets broken before the roofer is ready to lay them. • Roof sheets not tarped over to prevent movement/uplift. • Stockpiling of sheets causes overload of roof framing.
Securing sheets	Lifting roof sheets into position.	Struck by falling sheet.	<ul style="list-style-type: none"> • Too windy. • Not enough persons used to handle each sheet, i.e. 1 person for every 2 metres in length (rule of thumb). • Inappropriate overhead protection or barrier exclusion zone immediately below.
	Use of power tools to screw down metal sheets.	Electric shock or electrocution.	<ul style="list-style-type: none"> • Electrical equipment faulty. • Extension lead faulty or “female” plug not adequately shrouded. • Lead severed by sharp edge. • Electrical supply not provided within 30 metres of the work area. • Several extension leads connected together (in series). • Earth Leakage Switch not

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			installed on mains supply or portable generator. <ul style="list-style-type: none"> Alternative source of power not considered e.g. air or cordless tools.
	Reflective surface of roof sheet – glare.	Eye damage.	<ul style="list-style-type: none"> AS rated sunglasses not worn.
	Working at height.	Fall from the edge.	<ul style="list-style-type: none"> Inadequate fall prevention system. Too windy for handling sheets – wind gust causes loss of balance. Not enough persons used to handle a sheet, i.e. 1 person for every 2 metres in length (rule of thumb). No catch scaffold. Footwear inappropriate for roof work. Roof surface too slippery compounded by the pitch of the roof. Roof surface wet or dewy.
Fitting roof accessories e.g. barge and ridge caps	Working at height.	Fall from the edge.	<ul style="list-style-type: none"> Inadequate fall prevention system particularly at areas such as gable ends. Consideration not given to the use of a cherry picker or similar work platform for difficult access. Too windy to fit capping or other accessories – wind gust causes loss of balance. Not enough persons used to handle long lengths of capping or other accessories. Inappropriate working platform provided. Roof surface too slippery compounded by the pitch of the roof. Footwear inappropriate for roof work. Roof surface wet or dewy.
	Lifting accessories into position.	Struck by falling object.	<ul style="list-style-type: none"> Too windy. Not enough persons used to handle capping or other

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			<p>accessory.</p> <ul style="list-style-type: none"> • Inappropriate overhead protection or barrier exclusion zone immediately below. • Consideration not given to the use of cherry picker or similar work platform for difficult access.

Catalogue No. **WC00978** WorkCover Publications Hotline **1300 799 003**



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ISBN 01 876995 51 3 ©Copyright WorkCover NSW 0408