

Hazard identification tool – Steel reinforcement fixing			
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)	Insufficient lighting.	Walk into objects, slips, trips, fall & other injuries.	<ul style="list-style-type: none"> • Poor lighting provided to the work face, especially in Slip or Jump Form and other enclosed areas. • Access ways not suitably defined or lighted.
	Poor access.	Slips, trips and falls; abrasions, strains and sprains; manual handling injuries.	<ul style="list-style-type: none"> • Access to work area (the deck) cluttered – poor housekeeping. • Area around work area cluttered with stored materials and/or rubbish. • Inadequate access for steel fixers and their materials. • Deck incomplete, formwork or other trades still working. • Schedule accelerated - concretors laying before steel fixers complete deck.
	Working at height with inadequate edge protection.	Fall from the edge of the deck.	<ul style="list-style-type: none"> • No handrail, midrail or fenderboard. • Gaps in perimeter protection, e.g. between screen or edge scaffold. • No catch scaffold provided.

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	Penetrations not covered.	Fall through penetration.	<ul style="list-style-type: none"> • Penetration/s not meshed covered, marked and secured.
	Formwork inadequate.	Fall injury due to formwork failure.	<ul style="list-style-type: none"> • Formwork failure- structurally inadequate. • Formwork not inspected.
General planning by steel reinforcement subcontractor	Exposure to ultra violet light, glare.	Skin cancer; sunburn, eye damage.	<ul style="list-style-type: none"> • Personal protective clothing – sunscreen 15-30+, shirt, flap on safety helmet not worn. • AS rate sunglasses not worn.
	Eye contact with concrete or sawdust.	Concrete splashes or sawdust flung into eye.	<ul style="list-style-type: none"> • No water available in work area to flush eye/s. • Eye protection not worn for tasks where particles are flung into the air, e.g. cleaning sawdust off the deck with compressed air. • No PPE or incorrect PPE worn for the required task.
General planning by steel reinforcement subcontractor	Walking on deck.	Slip on wet ply or sawdust. . Trip and twist ankle or knee. Cuts to ankles / shins.	<ul style="list-style-type: none"> • Deck slippery due to sawdust left behind by previous trade. • Deck wet, • Deck ply new. • Sharp edges on wire penetration covers not turned down.
	Hot weather.	Dehydration and dizziness.	<ul style="list-style-type: none"> • Inadequate supply of cold drinking water provided to the work area. • Suitable work clothing not worn e.g. loose light colored clothing. • Work environment. Shaded areas or temporary cover not erected. • Limited job rotation opportunities.

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	Manual handling.	Strains and sprains; injuries.	<ul style="list-style-type: none"> • Insufficient lifting equipment provided to undertake task • Where manual lifting is required, insufficient manpower provided to undertake the required task, e.g. lifting of large diameter bars. • Limited job rotation opportunities

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Lifting steel reinforcement to the workface.	Lifting loads onto deck by crane.	Serious injury to person/s from loads being lowered onto the deck or uncontrolled fall of load.	<ul style="list-style-type: none"> • Certificated Dogger or crane driver not used. • No warning given to steel fixers by dogger landing load onto the deck. • Individual loads not inspected and cleared before lifting commences, resulting in short items not adequately secured by slings. • Dogger piggy backing or doubling up loads using varying length slings – unslinging lower load while upper load remains suspended directly above. • 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 instead of using the correct sling/chain. • Stirrups and other small components lifted in non-approved container, e.g. 44 gallon drum or similar. • 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.

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Sorting steel reinforcement	Manual handling.	Strains, sprains and fractures	<ul style="list-style-type: none"> • Mechanical lifting device (e.g. crane) not used. • Steel not sorted requiring unnecessary double handling. • Steel dumped onto deck with no consideration to placing requirements, e.g. bottom steel not placed on top of the stack. • Steel for different areas not easily identified, e.g. colour coded with paint spots/bands.
	Flakey steel.	Cuts and/or steel splinters to hands or arms.	<ul style="list-style-type: none"> • Steel flakey with splinters. • No PPE or incorrect PPE for the required task.
	Sharp edges	Cuts from reinforcement bar ends.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task. • Suitably strong and flexible leather gloves not available or not worn. • Shorts worn exposing lower legs to injury.

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Placing steel reinforcement	Manual Handling.	Strains sprains and fractures.	<ul style="list-style-type: none"> • Mechanical lifting device not used. • If manual handling required, team lifting not used to carry large diameter bars – insufficient manpower to do the job. • Individual carries too many bars at the one time. • Constant bending over and pushing when placing steel. • Levering or dragging heavy steel. • Manually lifting prefabricated steel into position, e.g. column cage. • Limited job rotation opportunities.
Placing steel reinforcement	Struck by a piece of steel.	Serious cut or eye damage.	<ul style="list-style-type: none"> • Eye protection (AS/NZS 1337 & 1338) not worn. • Other trades working on the deck when steel fixers are placing steel. • • Poor co-ordination when carrying and placing steel.
	Working near the edge of the deck.	Fall from the edge of the work area.	<ul style="list-style-type: none"> • No handrail, midrail or fenderboard. Inadequate strength in perimeter edge protection. • Gaps in perimeter edge protection, e.g. between screen and edge of scaffold. • Area around work area cluttered with stored materials and/or rubbish. • No catch scaffold provided.

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	Penetrations or steps in the deck, e.g. deep beams.	Fall through penetration or into deep beam.	<ul style="list-style-type: none"> • Walking backwards when placing steel. • Planks not provided to cover deep beams. • Penetrations not meshed, covered, secured and marked
	Feeding the bar into tight design configurations.	Jammed or crushed finger/s. Hand caught between steel.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task e.g. occupational protective gloves (AS/NZS 2161).
	Walking over steel.	Slip on steel. Fall; trip, twist ankle or knee.	<ul style="list-style-type: none"> • Steel wet or greasy. • Not watching feet when walking over steel. • Steel reinforcement sags/ gives way – not enough ties or chairs.
Cutting steel reinforcement	Operating electric angle grinder or drop saw.	Electric shock, burns or electrocution.	<ul style="list-style-type: none"> • Electrical equipment faulty. • Extension lead faulty or damaged. • Lead severed by angle grinder disk or saw blade. • Earth Leakage Switch not installed on mains supply or portable generator.
	Cutting with angle grinder or drop saw.	Serious cuts from contact with disk or saw blade.	<ul style="list-style-type: none"> • Grinder disk or saw blade unguarded, • Guard faulty. • Cutting disk or saw blade 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.

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	Cutting steel with Oxy Acetylene torch,	Fire and/or burns to the body e.g. arms and legs. Damage to eyes.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task. • Hot cut piece not constrained. • Long guns (extended nozzles) not used for constrained work areas. • Damage to hoses or equipment – stray spark ignites leaking gas. • No flashback arresters.
	Sparks generated when using angle grinder, drop saw or oxy to cut steel reinforcement	Fire causing burns.	<ul style="list-style-type: none"> • Work area not cleared of combustible material prior to cutting, • Stray spark ignites clothing. • Damage to hoses or equipment – stray spark ignites leaking gas. • Fire extinguisher not maintained or adjacent to work area. • Workers not trained in the use of fire fighting equipment.
	Sharp edges on cut bar ends.	Cuts from reinforcement bar ends.	<ul style="list-style-type: none"> • No PPE or incorrect PPE for the required task. e.g. occupational protective gloves (AS/NZS 2161). • Shorts worn exposing lower legs to injury. • Low steel reinforcement, e.g. columns starter bars, not fitted with caps.
Fixing steel reinforcement	Manual handling.	Strains sprains and fractures.	<ul style="list-style-type: none"> • Repetitious bending, twisting and cutting with nips. • Insufficient rest periods between jobs. • Longer handles not used on nips to minimize pressure required to cut wire. • Limited job rotation opportunities.

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	Working near the edge of the deck.	Fall from the edge of the work area.	<ul style="list-style-type: none"> • No handrail, midrail or fenderboard. • Gaps in perimeter edge protection, e.g. between screen or edge scaffold. • Area around work area cluttered with stored materials and/or rubbish. • No catch scaffold provided.
	Sharp edges on tie wire or bar chair ends.	Cuts or puncture wounds.	<ul style="list-style-type: none"> • Tie wire not bent in/down. • Soles on boots worn out – too thin. • Tip on bar chair ends missing.
	Walking on the deck.	Slip on wet ply or reinforcement and fall; trip or twist ankle or knee.	<ul style="list-style-type: none"> • Boot gets caught between steel reinforcement – different sized reinforcement occurs over the work area. • Steel reinforcement sags/ gives way – not enough ties or chairs. • Trip over steel.
	Twisting tie wire.	Wire snaps under pressure of twisting. Nips strike face	<ul style="list-style-type: none"> • Too much tension applied to wire causing tie to break. • Working too fast.

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Slip or Jump Forms	Manual Handling	Strains sprains and fractures.	<ul style="list-style-type: none"> • No mechanical devices (e.g. cranes) used. • If manual handling required, team lifting not used to carry large diameter bars – insufficient manpower to do the job. • Poor design of Slip Form requiring the lifting of heavy and long bars vertically over top deck perimeter protection and lowering into vertical walls in working deck below. • Constant bending over and forceful pushing when placing steel. • Limited job rotation opportunities.
	Placing large diameter and long bars in the walls of the Slip or Jump Form.	Drop bar from height. Struck by falling object.	<ul style="list-style-type: none"> • Team lifting not used to lower large diameter bars – insufficient manpower to do the job. • Lose grip on bar when lowering – bar too heavy or worker tired. • Slip Form perimeter protection on working deck too low when lowering heavy and long bars vertically over perimeter protection from top deck above.
	Penetrations on working deck of Slip or Jump Form.	Fall through penetration.	<ul style="list-style-type: none"> • Ladder hatch left open or hatch missing. • No wire mesh covering penetrations or mesh temporarily removed for access.

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Slip or Jump Forms	Poor access.	Slips, trips and falls; abrasions, strains and sprains; manual handling injuries.	<ul style="list-style-type: none"> • Access to work area cluttered – poor housekeeping. • Top deck of Slip or Jump Form cluttered with stored materials and/or rubbish.
	Hot weather.	Dehydration and dizziness.	<ul style="list-style-type: none"> • Inadequate supply of cold drinking water provided to the work area. • Suitable work clothing e.g. loose light colored clothing. • Work environment. Work in shaded areas or erect temporary cover.
	Insufficient lighting.	Walk into objects, slips, trips, fall and other injuries.	<ul style="list-style-type: none"> • Poor lighting provided especially inside Slip or Jump Form or other enclosed areas.

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