

Safe Work Method Statement [TECH206]

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Step	Equipment used	Description/Parameters	Possible Hazards	Risk Level "Low", "Moderate", "High", "Catastrophic"	Safety Controls Colours as per Figure 2 (Hierarchy of Controls graphic)	Revised Risk Level "Low", "Moderate", "High", "Catastrophic"
Collect metal steel bars (Parts A-C)	Steel stock, ruler	Collect steel bars with partner, 1500mm (shared) plus angled 100mm & 120mm sections	Manual handling injury, cuts from sharp edges	Moderate	Use team lifting (administrative), wear gloves (PPE), deburr edges before handling (engineering)	Low
Forge 90° angle using oxyacetylene	Oxyacetylene torch, forging jig, hammer	Heat and bend bar to 90° using jig, multiple heats may be required	Burns, fire, UV/IR eye injury, inhalation of fumes, impact from hammer	High	Use fire-resistant PPE (gloves, apron, face shield), use welding screens, ensure ventilation, clear work area of combustibles	Moderate
Quench steel	Water bucket	Quench hot steel in water after final shaping	Burns from steam/splash, slipping on the wet floor, thermal shock fragments	High	use long handled tongs (engineering), face shield & gloves (PPE), quench in	Moderate

					designated tank only (administrative) , spill control mats (engineering)	
Cut forged bar in half	Cold saw	Cut shaped steel into two hacksaw bodies	Cuts, flying sparks/metal, noise	High	Guarded cold saw (engineering) , safety glasses, hearing protection, gloves (PPE) , secure workpiece with clamp	Low
Put main body piece aside	Bench, cardboard folder	Store the main body piece safely	Tripping hazard, material falling	Moderate	Place materials in racks or bench trays (engineering) , keep walkway clear (administrative)	Low
Cut round bar for rod guide	Cold saw	Cut 15mm Ø bar to 25mm length	Cuts, sparks, noise	High	Machine guard, eye & earing protection (PPE) , clamp material securely	Low

Face and drill bar on lathe	Lathe, drill bits	Face ends, drill centre hole	Entanglement, cuts from swarf, noise, eye injury	High	Machine guard (engineering), chuck key removed before start (administrative), wear fitted clothing & Safety glasses (PPE), brush swarf with tool not hands	Low
Make blade holders	Hacksaw, hand drill, tap set, centre punch	Flatten sections, drill 3.5mm hole, tape M4 thread	Burns, UV radiation, fumes, electric shock, fire	Moderate	Use vice to secure (engineering), wear safety glasses (PPE), take rest breaks (administrative)	Low
Weld components	MIG welder	Tack weld, then weld fully with V prep	Flying sparks, noise, hand injury, dust inhalation	High	Welding screens and fume extraction (engineering), full welding PPE (gloves, helmet, apron), fire extinguisher nearby (administrative)	Moderate

Grind welds	Angle grinder	Smooth weld beads	Flying sparks, noise, hand injury, dust inhalation	High	Grinder guard (engineering), safety glasses & face shield, gloves, hearing protection and dust mask (PPE), work in ventilated area	Low
Cut excess and finish	Bandsaw, finisher	Remove excess and shape	Entanglement, cuts, noise, sparks	High	Guarded bandsaw, finisher guard, push sticks (engineering), PPE (glasses, hearing protection), no loose clothing (administrative)	Low
Spray paint	Spray putty, primer, spray paint, clear coats	Apply putty, primer, paint, clear coats	Fume inhalation, fire hazard, skin/eye contact	High	Use spray booth (engineering), wear respirator & gloves (PPE), no ignition sources (elimination), proper waste disposal (administrative)	Moderate

Fit 3D printed handle	3D handle, epoxy	Attach ergonomic handle	Epoxy fumes, misalignment	Moderate	Use gloves (PPE), ventilated area for epoxy, clamp for stability	Low
Assemble blade holders	Screwdriver, wrench	Attach blade holders with screws	Pinch points, hand strain	Moderate	Use correct tools, gloves if needed (PPE), don't overtighten (administrative)	Low
Insert threaded rod guide	Hacksaw body, threaded rod, wing nut	Fit rod into guide	Pinch points, minor cuts	Moderate	Use gloves (PPE), apply slow and controlled tightening	Low
Mount hacksaw blade	Hacksaw blade, screws, wing nut	Secure blade facing correct way	Sharp blade cuts, tension failure	Moderate	Wear gloves (PPE), check blade orientation (administrative), heighten evenly	Low

Risk Level Reference :

Figure 1

Risk Matrix

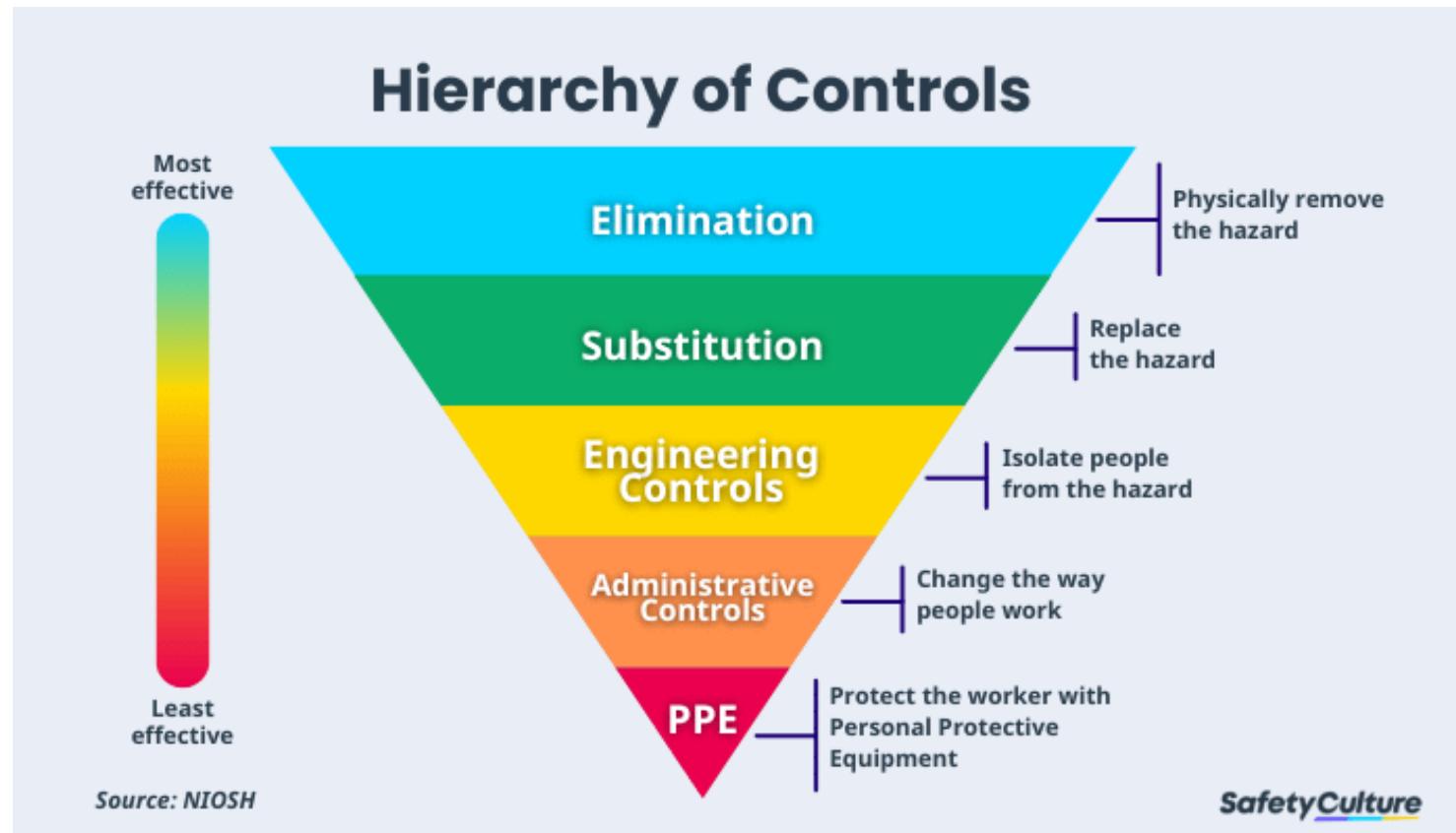
		Consequences				
		Insignificant (1) No injuries / minimal financial loss	Minor (2) First aid treatment / medium financial loss	Moderate (3) Medical treatment / high financial loss	Major (4) Hospitable / large financial loss	Catastrophic (5) Death / massive financial loss
Likelihood	Almost Certain (5) Often occurs / once a week	Moderate (5)	High (10)	High (15)	Catastrophic (20)	Catastrophic (25)
	Likely (4) Could easily happen / once a month	Moderate (4)	Moderate (8)	High (12)	Catastrophic (16)	Catastrophic (20)
	Possible (3) Could happen or known it to happen / once a year	Low (3)	Moderate (6)	Moderate (9)	High (12)	High (15)
	Unlikely (2) Hasn't happened yet but could / once every 10 years	Low (2)	Moderate (4)	Moderate (6)	Moderate (8)	High (10)
	Rare (1) Conceivable but only on extreme circumstances / once in 100 years	Low (1)	Low (2)	Low (3)	Moderate (4)	Moderate (5)

Note. Risk Matrix created by Safework Pro, 2019. (<https://www.safeworkpro.com.au/an-example-of-risk-assessment-matrix/>)

Safety Control Reference:

Figure 2

Hierarchy of Controls



Note. Hierarchy of Controls created by National Institute for Occupational Safety and Health and adapted by Safety Culture Australia, 2025. (<https://safetyculture.com/topics/workplace-hazards/5-hazard-control-measures/>)