



Flashbutt Welding Operations Port Augusta Depot

Work Activity:	Flashbutt Welding Depot Operations		WMS No: WHS-WI-150
Coverage:	Port Augusta Flashbutt Welding Depot		Version No: 3.0
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<i>What are the tasks involved?</i>	<i>What are the hazards and risks?</i>	<i>What are the control measures?</i>	<i>Related Documents</i>
Travel Travel to and from worksite (ROAD/ GWA yard)	Collision with 3rd Parties e.g. other vehicles, trains	Drive to condition of roads and adhere to all signage posted Speed restrictions in place in GWA yard (25 KPH) and around Flashbutt Depot (10 KPH) Ensure Hazard lights or flashing beacon lights are on at all times	FBW Depot Online Induction
	Site Visitors unfamiliar with site	Site delineation Clear signage indicating site office and parking Access arrangements with GWA Online site induction	FBW Depot Online Induction
Cranes and Lifting General usage of cranes at the Flashbutt Depot (includes all lifts conducted by gantry cranes at both short end and long end)	Uneven loading of gantry cranes	Operators to shift loads in unison and maintain load movements Wagon set in position to allow for even crane load distribution Gantry cranes designed to operate in unison Unloading to be undertaken per row and stacked similarly	WHS-WI-002 Plant and Equipment – Loading/ Unloading
	Struck by rail	All lifting equipment to be inspected prior to lifting and ensure it has been tested, tagged and dated. Only competent personnel to operate cranes Siren to be sounded when cranes begin operation Workers must not work under the load or be positioned between load and fixed object at any time Designated spotter during lifts to ensure safe distances are maintained at all times with two way radio at short end grinding stations Defined exclusion zone to apply when lifting for non-	FBW Depot Online Induction Lifting and Rigging Gear register Plant & Equipment Pre-start form Onsite Training & Competency Report



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	Fires started by stray sparks	Use minimum 3 people to lift larger electric Geismar (<i>modified</i>) electric web grinder Use correct lifting techniques Use mechanical lifting devices when possible Regular rotation of job tasks through grinding, crane operation and grinding Area surrounding grinding areas to be kept clear of vegetation and kept clean at all times Fire Extinguishers and Fire Blankets to be regularly spaced throughout the Flashbutt Depot	Fire Extinguisher Register
Grinding Rail Web (De-rusting)	Movement of rail during grinding	Rail is restrained by stops on a level concrete bed Weight of rail reduces movement	
	Trip/slip hazard of grinding residue	Regular clean-up of the area (using gloves approved for use and P2 masks to reduce dust exposure)	
	Manual Handling injury – overfilled waste bins	240Litre wheelie bins to be regularly emptied to avoid overfilling Mechanical bin-lifter attachment for forklift used to empty 240litre bins (<i>max load 100kg or half-full bin</i>).	
Re-Grinding Rail on stock pile (MP12 Profile Grinder) outside of the roller line area	Work at Height - Climbing on welded rail lengths above ground level	No profile grinding on rail stack above a maximum of 3 rail tier in height	
Track Movements Movements of rail traffic	Collision with rolling stock due to unauthorised rolling stock entry into #5 road	The points on either end of # 5 road to be clipped and locked to prevent entry into 5 road before rail can be unloaded	Port Augusta Flashbutt Welding Facility Work Instruction
	Collision with rolling stock due to rail movements on other roads within the GWA yard	Delineation of Flashbutt Welding Facility work area	
	Collision with rolling stock due to runaway of rail pairs during unloading rail	Handbrakes to be set and wheel chock placed to at least one set of wheels	

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Movement of rail wagons by rail train	Struck by moving wagons	Rail deliveries scheduled for night time where possible (minimise staff presence) When rail train enters depot, #5 road unlocked and all personnel notified No access across #5 road whilst rail train is shunting (delineation activated)	WHS-WI-132 Plant and Equipment – Using Mobile Plant – Linear Worksite
Movement of wagons by Loader	Struck by moving wagons or mobile plant Wagons runaway or shunted uncontrollably	Exclusion zone whilst moving Loader movements to be communicated to all workers prior to movements Loader operator to operate horn 3 times prior to moving wagons Loader to be connected to wagons to prevent runaway (chains or coupler)	WHS-WI-131 Plant and Equipment – Using Mobile Plant – Fixed Worksite
Unwelded rail on roller line Movement of rails along roller line throughout Flashbutt Depot	Pinch points Crush Injuries Unwanted roller line movement	Keep hands and body parts clear (minimum 5 metre exclusion for all non-operational personnel) Audible warning prior to roller line movement with time delay Constant communications between welders and the profile grinders – two way radio Roller line can only be operated by the welders and profile grinders First 4 weld joints are controlled by welders only & 5th joint is controlled by welders and profile grinders. NOTE: Communication between welder and dispatch end operator must occur before movement of rail Emergency stop lanyards located along the entire length of the roller line Stop block located near cooling fan to prevent long rail from returning back into the Flashbutt Welder zone whilst in production mode Installed slide bolt stopping rail from north end coming into welding area NOTE: ALL OPERATORS must Treat roller line as active at all times	FBW Depot Online Induction



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Welding Rail Welding rails with Flashbutt Welder	Operation of Flashbutt Welder	Flashbutt welder only to be operated by competent personnel SWMS specific to Flashbutt welder operation shall apply to operators of the Flashbutt Welder All non-operational personnel to remain outside of exclusion zone	Contract Flashbutt Welder Safe Work Method Statement
	Hot rail post welding	Exclusion zone between welder and cooling station Minimum site PPE requirements	
Cooling of Welded Rail Air and water cooling of rail after Flashbutt welding	Rotating Fan operation Exposure to non-potable process water during cooling operation Airborne contaminants whilst cleaning	Grill on fan, located on top of the roller line Barrier delineating exclusion area No personnel in vicinity when cooling rail is undertaken Guard around water cooling jets Cleaning to be undertaken on a monthly or periodic basis when roller line is not in operation	
Cut rail with friction saw to remove failed weld	Refer to SWMS for 'Cut Rail Using Rail Saw'	Refer to WHS-WI-100	WHS-WI-100 Cut Rail Using Rail Saw
Grinding welds at finishing end	Unexpected operation of roller line	Communication with the Flashbutt welder operator Green light indicator to show who is in control of roller line	Port Augusta Flashbutt Welding Facility Work Instruction
Weld inspection NDT and weld geometry checking of rail	Person struck by rail movement on gantry crane Repetitive bending and awkward posture	Exclusion zone when lifting (non-operational personnel to remain greater than 10 metres clear) Regular stretching, job rotation	



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<p>Loading welded rail lengths Stacking long 165m lengths from roller line to rail bed</p>	<p>Unstable Rail stack</p> <p>Pinch or crush injuries from manual manipulation to align rails when they reach the rail stack on the ground</p> <p>Work at Height - Climbing on welded rail lengths</p> <p>Struck by rail at height</p>	<p>Long lengths of rail to be stacked to a maximum of 2m in height using yellow painted rail bollard as guide</p> <p>Stacking to be undertaken in row order and in only one rail size</p> <p>Rail foot to be adjacent but not overlapping when stacked</p> <p>Rail must be fully on the ground with cranes/chains retracted</p> <p>No direct manual contact with 'live rail load' until load is grounded (ground or stacked).</p> <p>Competent person under radio control can walk the line and request adjustment in conjunction with crane operator</p> <p>Crow bars to be used to adjust rail position</p> <p>Height restriction on rail is 2m</p> <p>Rail to be stacked in a step formation to allow access to top of rail</p> <p>Crane movements of clamped rail only once all workers are at ground level outside exclusion zone</p>	
<p>Unloading old steel bearers from empty long rail rake</p>	<p>Sharp steel edges</p> <p>Falling steel bearers off side of rail rake</p>	<p>Full standard PPE including gloves approved for use</p> <p>Designated drop zone to unload steel bearers</p> <p>Scaffold stillages must be used to stack removed bearers</p>	
<p>Loading long rails into rail rakes</p>	<p>Work at Height - Climbing on to rail pile to attach rail clamp</p>	<p>Height restriction on rail is 2m</p> <p>Rail to be stacked in a step formation to allow access to top of rail</p>	



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	<p>Work at Height - Climbing on to rail wagon to position rail for transport</p> <p>Stability of loaded rails</p>	<p>Using 3 points of contact, climb onto the rail wagon using the adjacent stands</p> <p>Load rails in row order from the outside-in Use crow bar or appropriate tool to adjust rail position</p> <p>Ensure steel bearers are installed correctly Ensure rail foot of rails is adjacent but not overlapping</p>	
<p>Working during hot & cold weather conditions</p>	<p>Cold-related illness exposures and discomfort from heat loss</p> <p>Fatigue, dehydration and heat-related illness</p>	<p>Approved additional liner for wearing under hard hat to reduce excessive heat loss issued.</p> <p>NOTE: beanies, hoodies or personal caps incompatible with achieving safe fit of hard-hat must not be worn.</p> <p>Crew member awareness of heat stress symptoms and first aid personnel on site at all times.</p> <p>Job-task rotation, access to cool drinking water on site, installed fans at grinding and welding stations – air conditioned crib room for use during meal breaks.</p>	
<p>Plant and equipment repairs & maintenance</p>	<p>Faults or unsafe condition not identified</p> <p>Uncontrolled energy (electrical, mechanical) during inadvertent start-up</p> <p>Manual Handling injury – sustained awkward posture and heavy lifting</p>	<p>Pre-start inspections on all plant and equipment with identified faults to be noted and out-of-service tag system used.</p> <p>Only competent trained personnel to perform equipment isolations prior to maintenance work, with all energy sources tagged or locked out and tested prior to work commencing.</p> <p>Mobile work stands to be used to elevate equipment to suitable work height Designed grinder trolleys to be used to move and position grinders within welding shed as required</p>	<p>EPP-32-09 Lock Out, Tag Out Procedure</p>



References	
<p>Standards, Codes of Practice, Guidance:</p> <p>Comcare</p> <p>The Code of Practice for Construction Work</p> <p>Risk Management Policy and Procedure</p> <p>Network Rules and Procedures</p> <p>Other work method statements as relevant, such as:</p> <ul style="list-style-type: none"> - Air & Power Tools - Heights - Hot Works - Manual Tasks - Plant and Equipment – Loading/Unloading - Plant and Equipment – Using Mobile Plant – Fixed Worksite - Plant and Equipment – Using Mobile Plant – Linear Worksite - PPE - Cut Rail Using a Rail Saw 	<p>Plant / Equipment / Tools:</p> <p>Flashbutt Welder, Overhead Gantry Cranes, Fork Lift, EWP, Front End Loader, MP12 Rail Profile Grinders, MS9 Web Grinders, Hand Tools, Roller Line, Ultrasonic Rail Testing device, Straight Edge, P1 Gauge, Rail Saw, Depot Ancillary Plant (i.e. fans, fire extinguishers etc.)</p>
<p>Training Requirements:</p> <p>Operator Elevated Work Platform, Operator FEL, Operator FB Welding</p>	<p>Inspection / Testing requirements:</p> <p>Non Destructive Testing, COP section1 Rail</p>