

# Installation Of Gabion And Reno Mattress

<b>SWMS number:</b> SMS-06-SW-0958	<b>SWMS Name:</b> Installation Of Gabion And Reno Mattress			<b>SWMS Team:</b> Civil Construction Review Team
<b>Custodian (Position):</b> Services Manager Civil	<b>Assumptions:</b> Site Specific Risks Are Addressed And Assessed In Pre- Work Briefing			<b>Content reviewed by Technical expert (SME) and RailCorp safety professional (position including Div/Group)</b> Services Manager Civil and Safety facilitator, Safety Support Services Division.
<b>Approver (Position):</b> Civil Electrical Works Manager Infrastructure Renewals	<b>Plant/Equipment/Tools:</b> <ul style="list-style-type: none"> <li>Excavator, Crane, Lifting Equipment, Concrete Truck</li> <li>Barricades, Construction Equipment, Demarcation Fencing, Signs, Markers</li> <li>Silt Fencing</li> <li>Road Base, Gabion Rock, Reno Mattress Concrete</li> <li>Compactor, Filter Fabric, Cages</li> <li>Hand Tools</li> <li>Compressor</li> <li>Gripping gun</li> <li>Water Cart</li> <li>Step Ladder</li> </ul>	<b>Records/Reporting:</b> <ul style="list-style-type: none"> <li>Worksite Protection Plan</li> <li>Pre-work Brief</li> <li>Site Specific Management Plan</li> <li>Daily Plant Checklist</li> <li>Hazardous Substance Register, MSDS</li> <li>Services searches</li> <li>Electrical Permits</li> </ul>	<b>Permits/licences required:</b> <ul style="list-style-type: none"> <li>Electrical Permit Holder</li> <li>Excavator / Crane Operator Certificate</li> </ul>	<b>PPE required:</b> <ul style="list-style-type: none"> <li>Safety Boots</li> <li>High Visibility Vests</li> <li>Hardhats</li> <li>Protective Clothing</li> <li>Safety Glasses</li> </ul> <p>And as specified below.</p> <ul style="list-style-type: none"> <li>Gloves</li> <li>Ear Muffs, Ear Plugs</li> <li>During all Site Works a FIRST AIDER MUST be Present</li> </ul>
<b>Applicable Standards, Codes of Practice and guidance:</b> <ul style="list-style-type: none"> <li>OH&amp;S Act 2000</li> <li>OH&amp;S Regulation 2001</li> <li>Rail Safety Regulation 2003</li> <li>RailCorp Network Rules &amp; Procedures</li> <li>RailCorp Safety Management System.</li> <li>MSDS for all chemicals and hazardous Substances used on site</li> <li>Working near Overhead Power Lines</li> <li>EC14 – Guide to Electrical Workers Safety Equipment</li> <li>National Code of Practice for Manual Handling [NOHSC:2005]</li> <li>WorkCover NSW Plant Guide</li> <li>AS 2550.11-2004 Cranes, hoists and winches - Safe use - Vehicle-loading cranes</li> </ul>	<b>Inspection requirements</b>	<b>Service schedule:</b> Nil	<b>Training/Qualification required:</b> <ul style="list-style-type: none"> <li>Construction Industry Induction</li> <li>RISI (Rail Industry Safety Induction)</li> </ul> <p>And as specified below.</p> <ul style="list-style-type: none"> <li>Truck Pilot</li> </ul>	

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Number	Step	Hazard Or Human Error (Safety/Environmental Hazards Identified, Including Physical Environment, Human Errors, Plant And Equipment)	Risk ranking before controls	Control (to be Implemented to eliminate or reduce the risk to the lowest practicable level)	Risk ranking after controls	Responsibility	Job step to be completed In accordance with (name associated documentation)
1	Erect Barrier Fence	Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Contact With Services	A	Locate services prior to starting work. Mark services with paint, use qualified plant operators, hand digging in close proximity to services under supervision by appropriate services representative. Care to be exercised. Service searches to be on site and signed off.	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Excavation & Earthworks SMS-06-GD-0378 Services Search Checklist SMS-06-FM-0384
		Contact With Live O/H Wires	A	Maintain clearances at all times. Isolate power	C+	Qualified Permit Holder QEL29/MEI61 Team Leader Work Group Leader	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
2	Erect Silt Fencing As Required At Open Inlets Of Drains	Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
3	Stock Pile All Filling Materials, Unloading Of Cages And Wire From Trucks	Machine And Or Trucks Hit By Train	B+	Operators to be made aware of extent of safe-working area pilots used when necessary	C+	Team Leader Work Group Leader Worksite protection officer	Network rules and procedures work site protection plan Truck Pilots SMS-11-GD-0243
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001

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		Contact With Live O/H Wires	A	Maintain clearances at all times. Isolate power	C+	Qualified Permit Holder QEL29/MEI61 Team Leader Work Group Leader	Electrical Equipment SMS-06-GD-0268 Electrical Permits SMS-06-EN-0577
		Failure Of Lifting Equipment From Overloading	B+	Competent operators to assess loads carefully prior to lifting equipment to be properly maintained and marked	C+	Workcover Ticketed Operator And Dogman SMS-11-GD-0243	SSMP, Pre work Briefing SMS-06-FM-0163 Lifting Equipment SMS-16-FM-0089 Plant SMS-06-PR-0225
4	Mark Out For Excavation And Take Levels	Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
	Tie Cages Into Box Form Ready To Place	Compressor noise	C+	Implement exclusion zones. Use appropriate plant with noise control measures. Use ear protection where required.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Noise Management SMS-06-GD-0273
		Clipping Gun	C-	Gloves to be worn as necessary	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
	Excavation Of Filled Ground To Make Pad For Cages	Flying Objects	B-	Protective eye-wear must be worn	C-	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225

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7	Spread Road Base And Compact Pad For Under Side Of Cages.	Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Contact With Services	A	Locate services prior to starting work .mark services with paint, use qualified plant operators, hand digging in close proximity to services under supervision by appropriate services representative. Care to be exercised. Service searches to be on site and signed off.	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Excavation & Earthworks SMS-06-GD-0378 Services Search Checklist SMS-06-FM-0384
8	Lay Out Filter Fabric Over Pad	Dust	C-	Appropriate PPE to be worn (e.g. Dust mask)	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Noise From Plant	C+	Implement exclusion zones. Use appropriate plant with noise control measures. Use ear protection where required.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Noise Management SMS-06-GD-0273
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
9	Install Gabion And Reno Mattress	Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323

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9	Install Cages On Fabric Tie Together And Stretch Cages With Frame And Machine.	Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
10	Load Gabion Rock Into With Machine Hand Stack Rock In Cages	Dust	C-	Appropriate PPE to be worn (e.g. Dust mask)	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Flying Objects	B-	Protective eye-wear must be worn	C-	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
11	Tie Off Tops Of Cages	Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323

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12	Concrete Works	Personnel Struck By Concrete Truck	B+	Truck pilots to be used	C+	Team Leader Work Group Leader Worksite protection officer	Truck Pilots SMS-11-GD-0243
		Concrete	C-	Protective clothing. Gloves	D	Team Leader Work Group Leader Competent Person	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 MSDS
		Skin Irritations	C-	Wear gloves long sleeve shirts	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 MSDS
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Eye Injuries	C-	Protective eye-wear must be worn	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
13	Back Fill Behind Cages With Selected Fill And Compact	Noise From Plant	C+	Implement exclusion zones. Use appropriate plant with noise control measures. Use ear protection where required.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323 Noise Management SMS-06-GD-0273
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323

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14	Failure Of Lifting Equipment From Overloading	Failure Of Lifting Equipment From Overloading	B+	Competent operators to assess loads carefully prior to lifting equipment to be properly maintained and marked	C+	Workcover Ticketed Operator And Dogman SMS-11-GD-0243	SSMP, Pre work Briefing SMS-06-FM-0163 Lifting Equipment SMS-16-FM-0089 Plant SMS-06-PR-0225
		Flying Objects	B-	Protective eye-wear must be worn	C-	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Dust	C-	Appropriate PPE to be worn (e.g Dust mask)	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
14	Clean Up And Make Good Load Trucks And Remove Spoils	Cuts, Scratches And Abrasions	C-	Gloves to be worn as necessary.	D	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 PPE- SMS-06-GD-0323
		Manual Handling Injuries	B-	Correct manual handling techniques. Rotate staff on repetitive tasks. Use gloves if required	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Manual Handling SMS-06-GD-0001
		Personnel Struck By Machinery	B+	Implement exclusion zones. Use reversing beepers. Use ticketed operators. Plan work to avoid site congestion	C+	Team Leader Work Group Leader All Staff	SSMP, Pre work Briefing SMS-06-FM-0163 Plant SMS-06-PR-0225

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**NOTE: Each work group or team member must sign off on the SWMS to acknowledge they have been briefed about or instructed in the SWMS**

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RailCorp Level 2 Risk Matrix - Regional & Local (Workplace)		Likelihood/Frequency							<b>Definition for Use - Regional &amp; Local level (Workplace)</b>  Used for workplace hazards and safety risks that do not consider the whole of the network. Indicatively this matrix is appropriate for use where the hazards under consideration are up to 10% of the total network exposure. This includes regional and local workplace risk assessments.  As an example, the Level 2 scale would be used when examining the risk of slips, trips and falls on specific RailCorp platforms within a region or at a particular station, or the risk of fire within a depot.  There are 3 options for descriptors which can be used to determine the frequency category. One set of descriptors is provided for frequency, one for historical likelihood, and one for predictive likelihood in the workplace. Choose the most appropriate.  To score the risk, follow the steps:  1. Identify the magnitude of the credible consequence if the risk were to occur. If applicable, risks should be considered in terms of the safety (this matrix), commercial and environmental impact (using other matrices).  2. Identify the likelihood of this level of consequence occurring. (This is done after considering the effectiveness of the current controls in place)  3. Score the risk using the combination of likelihood and consequence ranking.  Note: Where there are a range of credible consequences which may lead to a different level of risk and/or where the controls may be different. It may be useful to score the risk more than once.
		Event Frequency	Less than once every 1000 years	Once every 100 to 1,000 years	Once every 10 to 100 years	Once every 1 to 10 years	More than once per year up to and including 10 times per year	More than 10 times per year	
		Historical (Likelihood)	Unheard of in the rail industry	Has occurred once or twice in the rail industry	Has occurred many times in the rail industry, but not in NSW	Has occurred once or twice in NSW	Has occurred frequently in NSW	Has occurred frequently at specific locations	
		Workplace Predictive (Likelihood)	Not expected to occur	May occur only in exceptional circumstances	Could occur at some time but not likely	You would expect it to occur at least once in the next 10 years performing similar activities	You would expect it to occur at least once this year performing similar activities	You would expect it to occur at least once this month performing similar activities	
			F1	F2	F3	F4	F5	F6	
		Consequence	Incredible	Improbable	Remote	Occasional	Probable	Frequent	
		>10 Fatalities	C6	Disastrous	B-	B+	A	A	
		2-10 Fatalities	C5	Catastrophic	C+	B-	B+	A	
		1 Fatality (2-10 Major Injuries)	C4	Critical	C-	C+	B-	B+	
		1 Major Injury	C3	Major	D	C-	C+	B-	
		1 or more Minor Injuries	C2	Minor	D	D	C-	C+	
		First aid treatment, or illness/injury not requiring treatment	C1	Negligible	D	D	D	C-	
									