

Appendix B Risk Assessment

		Risk Assessment											
Company Name		Al Firas General Contracting			Project Title: Yasmina Brooks School Expansion					Ref:RA–MS-TC-FP-00017			
Work Description		Testing and Commissioning of Foam System			Date: 17/05/2022					Revision: 00			
S/No	Activity	Hazards (Potential Hazards)	Risks (Consequences)	Risk Rating				Control Measure(s)	Residual Risk				
				Probability	Severity	P X S	RL (Risk Level)		Health & Safety Control(s)	Probability	Severity	P X S	RL (Risk Level)
1	Work area Preparation	Health & Safety <ul style="list-style-type: none">Slips, trip and falls of person/ material.Inadequate control or supervision by the line management.Poor housekeepingMaterial Handling and storage. Environmental <ul style="list-style-type: none">Construction activities and material used in the process.Waste generated during chipping and repairing activity.	Health & Safety <ul style="list-style-type: none">Major / Minor personal InjuryMusculoskeletal Disorders (manual Handling)Property damage Environmental <ul style="list-style-type: none">Land contamination due to waste generated during work activities.Air pollution in case of poor selection and maintenance of equipment.	4	3	12	High	<ul style="list-style-type: none">The work activities shall be carried out as per OSHAD-SF CoP-17.0 'Safety Signage Signals' guidelines.Work should be planned for safe means of access.All Lifting gears/Tools should be of sound working condition which shall be subject to statutory inspection and certification requirement (inspected by authorized inspector)Barricaded the area.Display Caution signage & Hazard warning symbols such as:<ul style="list-style-type: none">Authorized person onlyMandatory PPE requirement etc.Special attention shall be given to any likely environmental pollutant (pro-active monitoring)Tripod and wire / nylon rope shall be used for material lifting.All related aspects on environment and ecology shall be communicated to all concerned personnel to mitigate / reduce the negative impacts.Adequate Information, Instruction, Training (for working in confined space and emergency handling etc.) and competent	1	3	3	Low	

								Supervision all the time.				
2	Mobilization Loading and unloading of Material	<ul style="list-style-type: none"> Fall of material Inadequate supervision 	<ul style="list-style-type: none"> Crush Injury Property damage Fatality 	4	3	12	High	<ul style="list-style-type: none"> The work activities shall be carried out as per OSHAD-SF CoP-1.0 'Hazardous Materials' and CoP-14.0 'Manual Handling Ergonomics' standard and guidelines. All material offloaded areas to be barricaded provided with warning signs as OSHAD CoP 17.0 'Safety Signage and Signals' guidelines and standards. MSDS of the product shall be consulted for handling of chemical. Authorized personnel only to be engaged in the activity. Appropriate PPE for Workers to be used (Hi visibility vest, Cover all, safety shoes, hard hats and appropriate hand gloves at all times). Warning Signs will be erected to alert the pedestrians during loading and unloading operation. Access/egress to be provided for the movement of pedestrians. Competent Supervisors shall supervise and control all work activities. Materials to be stacked at designated areas in coordination with the supervisors at site. Information, instruction, and training shall be provided to personnel relevant to Jog. TBT to be conducted by the Foreman prior to work commencement. 	1	3	3	Low
3	Manual Load Handling Lifting and) transferring of materials from one location to	<ul style="list-style-type: none"> Material with sharp edges. Long Objects Overload/Uneven load Slippery surface Obstruction 	<ul style="list-style-type: none"> Muscle Sprain Cut Crush 	3	2	6	Moderate	<ul style="list-style-type: none"> All work activities shall be carried out as per CoP-14.0 'Manual Handling Ergonomics' & CoP-2.0 'Personal Protective Equipment' standard and guidelines. No overreaching activities. Check the path for tripping/slipping hazard in which the load would be carried. Prefer team lifting of load wherever 	1	2	2	Low

	(other							applicable.				
								<ul style="list-style-type: none"> Assess physical capacity of the persons involved in lifting. Access must be free from any obstruction. Adequate P.P.E. as per the task requirement (i.e.: Hard-hat, safety shoes, gloves and goggles). 				
4	Operating with Hand /Power Tools ▪(Drill machine ▪Paddle mixer ▪Roller	<ul style="list-style-type: none"> Defective Equipment and Improper use of equipment Loose fittings Flying particles Electrocution Sharp ends Damaged cables Improper Guarding Unrated and improper fixing of cutting disc Noise Dust Fire 	<ul style="list-style-type: none"> Cuts injury(hand) Abrasions Eye Injuries Burn Respiratory problems Environmental Damages 	3	2	6	Moderate	<ul style="list-style-type: none"> All manual handling shall be done according to OSHAD CoP 14.0 guidelines and standards. All the accessories shall be inspected as per OSHAD CoP- 35.0 'Portable Hand Tools' guidelines and standards. Any spark producing works required to be carried out to obtain hot work permit from the HSE department. Power tools shall be operated only by trained and certified personnel. Areas of tool use to be provided with barricades and a sign to alert the personnel's entering the areas on use of ear plugs. All the cables to regularly inspected and ensure that no "Live Bare Cables" and proper cable management system to be implemented. No cables to be laid directly on ground. All cables to be routed safely by providing stands with "S "type hooks for safe routing. The electrical / power tools to be properly inspected, prior to commencement. All electrical components to be checked and inspected regularly by electrician. The tools to be tagged for safe use. 110V power tools to be used fitted with yellow color code sockets. In case of 220 V (exceptional is if not available in the market) then an ELCB. to be provided (i.e., fitted with 30mA circuit 	1	2	2	Low

								<ul style="list-style-type: none"> braker) Sharp ends to be handled safely by use of heavy-duty hand gloves. Sharp ends to be protected by keeping in the cardboard provided boxes to secure and keep the material from being contact with any parts of body. Area of works to have adequate access/ egress. Materials to be stored away from the edges of the building. Changing of cutting wheels to be carried out by trained and authorized personnel (Usage of Disc Spanner and correct tools for fixation) Compliance with PPE requirements as per OSHAD SF-CoP-2.0 'Personal Protective Equipment' standard and guidelines. ie; Hand gloves, goggles, dust mask, Ear plug & safety harness to be worn& anchored to rigid point (if working to open edges) Fire extinguishers to be readily available near to the area of works. Area of works to be cleaned and maintained on daily basis to avoid any outbreak of fire due to accumulation of wastages. Waste to be disposed following the type of waste to the allocated skips. Generators used for the power source to be provided with drip trays to avoid and protect the ground from soil contamination. Ensure drip trays are clean and maintained regularly. 				
5	Handling/ Storage of Hazardous	Health and Safety <ul style="list-style-type: none"> Repair work Manual handling 	Health and Safety <ul style="list-style-type: none"> Eye exposure 	3	2	6	Moderate	<ul style="list-style-type: none"> Ensure safe storage, transportation, and application of all hazardous substances as per national regulations 	1	2	2	Low

	Materials (Foam)	<ul style="list-style-type: none">▪ Storage and stacking▪ Housekeeping <p>Environmental</p> <ul style="list-style-type: none">▪ Handling of chemical▪ Waste disposal▪ Poor housekeeping	<ul style="list-style-type: none">▪ Dermal effects▪ Fire▪ Ingestion, absorption, inhalations, etc. <p>Environmental</p> <ul style="list-style-type: none">▪ Air and land contamination					<p>and to guidelines of OSHAD CoP-1.0 “Hazardous Materials”</p> <ul style="list-style-type: none">▪ Substitute the extremely hazardous materials with less hazardous ones where practicable.▪ Reduce the amounts of hazardous materials stored on site to minimum practicable quantities.▪ Never allow spillages and clean them up promptly.▪ MSDS must be made ready and available for all operatives and ensure that they know its location. Ensure MSDS is located at the First Aid room and beware of antidotes.▪ Labeling system must be in place and operatives properly trained on how to identify them and the do’s and don’ts.▪ Operatives must have undergone proper training on Proper Storage and Safe Handling▪ Refresher courses must be provided for all operatives▪ Use proper PPE as per the instructions of the MSDS.▪ Ensure proper fire precautions.▪ No smoking shall be ensured▪ Minimum quantities of chemicals used shall be mobilized from store to work location and ensure not to store excessive material than necessary inside the confined space.				
6	Foam System - work	<p>Health and Safety</p> <ul style="list-style-type: none">▪ Repair work▪ Manual handling▪ Storage and stacking▪ Housekeeping▪ Inhalation of Fumes▪ Exposure to sharp	<p>Health and Safety</p> <ul style="list-style-type: none">▪ Ill-health▪ Skin/eye irritation▪ Eye/Skin exposure	3	3	9	High	<ul style="list-style-type: none">▪ Work activities shall be carried out as per OSHAD -SF CoP-1.0 'Hazardous Materials' and OSHAD CoP-54.0 'Waste Management' guidelines and standard.▪ Adequate Information, Instruction, Training and competent person /Supervision shall	1	3	3	Low

		<ul style="list-style-type: none"> edges. Housekeeping <p>Environmental</p> <ul style="list-style-type: none"> Handling of chemical Waste disposal Finishing work Noise Dust 	<ul style="list-style-type: none"> Respiratory Problems Environmental Land /air contamination (due to poor housekeeping) 					<ul style="list-style-type: none"> supervise the work activity. Personnel who are carrying out the work shall wear suitable protection for eye, hands, and respiratory protection as per OHAD SF-2.0 'Personal Protective Equipment' standard and guidelines. Storage areas of Adhesives to be provided with No Smoking signs. Contact with skin and eye to be immediately attended following the MSDS. Validated & serviced Fire extinguishers to be readily available near to the area of works. Area of works shall be barricaded, and necessary signage shall be placed. 				
7	Work at Night	<ul style="list-style-type: none"> Slip and trip/fall Heavy equipment movement. Vehicle movement Poor illumination Heat and humid Poor Visibility 	<ul style="list-style-type: none"> Major/ Minor personal injury Damage to Structures Electric Shock Muscular Fatigue Bruises and cuts 	4	3	12	High	<ul style="list-style-type: none"> Good housekeeping standards should be in place. All waste materials will be brought to the container or skip for disposal as per OSHAD SF- CoP 54.0 'Waste Management' guidelines and standards. Access routes to the place of work kept free of obstruction and always slip hazards. Only Competent drivers to operate machinery. Loose materials should be tied down or stored indoors. Beacon lights and head lamps for the machinery to be functional. Sufficient lighting to be provided to all locations and access if the work spot visibility falls. Local weather forecast information to keep informed of inclement conditions. Competent person shall supervise the activities. If hot and humid reach levels where employees are in danger from any activity, then work will 	1	3	3	Low

								be stopped.				
8	Work Completion	Health & Safety <ul style="list-style-type: none"> Poor housekeeping. Accumulated surplus materials. Environmental <ul style="list-style-type: none"> Poor Waste Management 	Health & Safety <ul style="list-style-type: none"> Slips / Trips / Falls can result to musculoskeletal disorders. Minor impact Injury due to pressure. Environmental <ul style="list-style-type: none"> Contamination of soil, waterways and oceans and entrance into the food web affecting the flora and fauna, if land filled or disposed. 	2	2	4	Moderate	<ul style="list-style-type: none"> The work activities shall be carried out as per OSHAD-SF CoPs- 54.0 'Waste Management'. Restore housekeeping after compliance and regular monitoring by the concerned HSE Officer. Ensure signing off (closing) of and logging of the permit at the end of each shift. All waste generated from the work shall be collected and segregated in designated waste containers (skips), at appropriate waste storage area. A Registered Service Provider will be appointed by AJB to collect and transport the waste materials that are generated from the activity in accordance with OSHAD CoP-54.0 "Waste Management. 	1	2	2	Low

Prepared By: Karim Alchaarani	Approved By: Michael Kaldas	Approved By: Nadeem Asghar
Designation: Quality Engineer	Designation: Project Manager	:Designation: Project HSE Manager
:Signature	:Signature	:Signature
:Date	:Date	:Date

Risk assessment matrix:

Area Impacted (a)	Insignificant Consequences (score=1)	Minor Consequences (score=2)	Moderate Consequence (score=3)	Major Consequences (score=4)	Catastrophic Consequence (score=5)
Human Health and Safety	Minor injuries, w hich may require self-administered first aid. Injured personnel can continue to perform normal duties	Injuries requiring on-site treatment by medical practitioner. Personnel unable to continue to perform duties	Serious injuries requiring off-site treatment by medical practitioner or immediate evacuation. Potential long-term ore permanently disabling effects.	Single Fatality	Multiple fatalities
Production Loss	Incident event w ithout causing production loss	Production loss or delay up to one week	Production loss or delay for over one month	Production loss or delay for over one month	Loss of licence to operate or ability to produce indefinitely
	Financial loss	Financial loss	Financial loss	Financial loss	Severe financial penalties or legal

Descriptor	Likely Frequency	Probability
Frequent	Occurs frequently	5
Often	Occurs several times per year	4
Likely	Has occurred more than once	3
Possible	Has Occurred	2
Rare	Never Occurred	1

		Risk Rating Matrix				
Probability		Severity				
		Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Rare (1)	AEL	1	2	3	4	5
Possible (2)		2	4	6	8	10
Likely (3)		3	6	9	12	15
Often (4)		4	8	12	16	20
Frequent / Almost Certain (5)		5	10	15	20	25
15 - 25	Extreme Risk	Activity or industry should not proceed in current form.				
08 - 12	High Risk	Activity or industry should be modified to include remedial planning and action and be subject to detailed EHS				
04 - 07	Moderate Risk	Activity or industry can operate subject to management and /or modification.				
01 - 03	Low Risk	No action required, unless escalation of risk is possible.				
Hierarchy of Control (Controls identified may be a the hierarchy in order to provide minimum operator exposure)						
Elimination		Eliminate the Hazard				
Substitution		Provide an alternative that is capable of performing the same task and is safer to use				
Engineering Controls		Provide or construct a physical barrier or guard				
Administrative Controls		Develop policies, procedures practices and guidelines, in consultation with employees, to mitigate the risk. Provide				
MS-xx		training, instruction and supervision about the hazard				
Personal Protective Equipment		Personal Equipment designed to protect the individual from the hazard				

Calculate the risk rating as follows: Risk Rating = S x P

Cutoff Point is > 3