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# A Novel Study of Hazard Identification and Risk Assessment in Textile Industry

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Abstract: The work environment of textiles is risky and portrayed by different simultaneous chemical, physical and mechanical hazard exposure, which would prompt wounds of textile labourers. Health risks from working in the textile industry. This manuscript contains the details on the hazards and risk level present in one of south India's leading textile industry. This study also briefs about the need, method and result of the HIRA technique. The HIRA technique is adopted in the old rotary printing department and dyeing department to assess the risk levels in terms of quantified values. The control measures were also developed for each area and activities identified with potential safety issues. It is found that the identified hazards majorly categorized under Physical, chemical, ergonomics, material handling, health and electrical hazards. The risk level is quantified for all the hazards in the printing and dyeing department by multiplying the values of severity and probability.

Keywords: Risk, Hazards, textile, dyeing, health, severity

### I. INTRODUCTION

Hazard Identification and Risk Assessment (HIRA) deals with the identification and quantification of risks that are exposed to, due to accidents resulting from the hazards present or handling of hazardous substances in the workplace.

This involves Hazard analysis which essentially is identification and quantification of the various hazards that are likely to occur in the industry as well as quantification of the consequences due to a particular hazard.

The risk analysis estimates the probability as well as severity of a particular hazard over an exposed group of people, plant equipment or both.

For any industry to be successful, it has to be safe, reliable, and sustainable in its operations. The industry has to identify the hazards and assess the associated risks and to bring the risks to tolerable level.

Hazard Identification and Risk Assessment (HIRA) is carried for identification of undesirable events that can lead to a hazard, the analysis of hazard of this undesirable event, that could occur and usually the estimation of its extent, magnitude, and likelihood of harmful effects.

It is widely accepted within industry in general that the various techniques of risk assessment contribute greatly toward improvements in the safety of complex operations and equipment.

The objective of this work of hazards and risk analysis is to identify and analyse hazards, the event sequences leading to hazards and the risk associated with hazardous events.

Many techniques ranging from the simple qualitative methods to the advanced quantitative methods are available to help identify and analyse hazards.

The use of multiple hazard analysis techniques is recommended because each has its own purpose, strengths, and weaknesses.

HIRA assists in identifying the most likely hazards which can have significant impact on workplace safety in an industry.

It helps in devising effective management measures as well as engineering measures for both preventive as well as post-disaster management.

### II. HAZARD IDENTIFICATION AND RISK ASSESSMENT

Hazards are the sources or situations which have the potential to cause undesired events. Risks are the combination of likelihood which creates a chance for the undesired events. All industries and workplace consist of Hazards and Risks which creates and cause the chances of accidents. In order to reduce those hazards and risks, the hazard identification and risk assessment have to be performed periodically. Hazard Identification and Risk Assessment is a tool used by industries to identify the hazards and providing control measures as per the risk priorities of each hazard. After the hazards are identified the risks can be assessed by quantitative and qualitative method to determine whether the identified risks are significant or non- significant.



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HIRA is a combination of deterministic, probabilistic, and quantitative method. The deterministic methods take into consideration of the products, the equipment and quantification of the various targets such as people, environment, and equipment. The probabilistic methods are based on the probability or requency of hazardous situation apparitions or on the occurrence of potential accidents. The uantitative methods analyse various data numerically. The steps involved in HIRA are

- 1) Classify Work Activities
- 2) Hazard Identification
- 3) Risk Assessment
- 4) Monitor and Review

### III. PROCESS DESCRIPTION

Its yarn storage area,

Front pass of Yarn loading point,

The different yarn is segregation,

The yarn box move to fabric knitting room by the help of vehicle.

### A. Fabric Knitting Machine

Knitting machine process

Knitting is a process of using long needles to interlink or knot a series of loops made by one continuous thread. Each loop or knot connects to another one, and when enough loops have been made, the result is a flat piece of material called a textile

Type of knitting machine

- 1) Circular Knitting Machine: In this machine the needles are implanted on a circular cylinder, which when used creates a seamless tube of fabric, by joining the stiches from the needles.
- 2) Single Jersey Machine: As opposed to double jersey machine, the Single jersey machine has only one cylinder one which one set of needles and sinkers are placed on. The diameter of this cylinder is generally around 30 inch, which can vary according to the machines type and requirement. The fabric manufactured on a Single jersey machine is known as "Single jersey fabric", they have a plain thickness, almost half if compared to the Double jersey fabric. Both front and back side of this fabric is visibly different
- 3) Double Jersey Machine: Double jersey machines have two sets of needles; one on dial and as well as on cylinder. There are no sinkers in double jersey machines. known as double jersey fabric
- 4) Interlock Double Jersey Machine: In this type of double jersey machines, the needles on the cylinder and the dial are placed opposite and alternatively. Interlock machine uses two types of latch needles instead only one type which is used generally in circular knitting machines.
- 5) Terry Single Jersey Machine: Terry fabrics are manufactured on Terry circular knitting machine using "Plush knitting technique". In this technique generally—the one set of sinker loops are made longer than the ground fabric sinker loops this longer set of sinker loops form the velvet like pile on the fabric, both the threads, of pile and ground fabric are worked together to give a stable structure.

### B. Dyeing Machine

The machine which is used to dyeing or coloring of materials like yarn, fabric, garments or any other materials is called dyeing machine. Dyeing machines come in all shapes and sizes to accommodate the various forms and quantities of textile materials TYPES OF DYEING MACHINE

### 1) Soft Flow Dyeing Machine

In the soft flow dyeing machine water is used for keeping the fabric in circulation. The conception difference of this equipment from a conventional jets that operates with a hydraulic system is that the fabric rope is kept circulating during the whole processing cycle (right from loading to unloading). There is no stopping of liquor or fabric circulation for usual drain and fill steps. The principle working behind the technique is very unique.

There is a system for fresh water to enter the vessel via a heat exchanger to a special interchange zone. At the same time the contaminated liquor is allowed channel out through a drain without any sort of contact with the fabric or for that matter the new bath in the machine.

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### 2) Jet Dyeing Machine

Jet dyeing machine is the most modern machine used for the dyeing of polyester fabric with disperse dyes. In these machines, both the fabric and the dye liquor are in motion, thereby facilitating a faster and more uniform dyeing. In jet dyeing machine, there is no fabric drive reel to move the fabric. The fabric movement by only force of water. It is economical, because of low liquor ratio. It is users friendly because comparison with long tube dyeing machine, to control the fabric movement four valves required. In jet dyeing machines and fabric dyeing machine, there is only one valve. Absent of reel, reduce connecting electric power, maintenance of two mechanical seal and breakdown time, if jet pressure and reel speed not synchronized.

In jet dyeing machines a strong jet of dye liquor is pumped out from an annular ring through which a rope of fabric passes in a tube called a venturi. This venturi tube has a constriction, so the force of the dye liquor passing through it pulls the fabric with it from the front to the back of the machine.

Thereafter the fabric rope moves slowly in folds round the machine and then passes through the jet again, a cycle similar to that of a winch dyeing machine. The jet has a dual purpose in that it provides both a gentle transport system for a fabric and also to fully immerse the fabric in liquor as it passes through it.

In all types of jet machines there are two principle phases of operation:

- 1) The active phase in which the fabric moves at speed, passing through the jet and picking up fresh dye liquor
- 2) The passive phase in which the fabric moves slowly around the system back to the feed-in to the jets

Jet dyeing machines are unique because both the dye and the fabric are in motion, whereas in other types of machine either the fabric moves in stationary dye liquor, or fabric is stationary and the dye liquor moves through it.

The design of the jet dyeing machine with its venturi means that very effective agitation between the fabric rope and the dye liquor is maintained, giving a fast rate of dyeing and good levelness. Although this design can create creases longitudinally in the fabric, the high degree of turbulence causes the fabric to balloon out and the creases disappear after the fabric leaves the jet. However, the rapid flow of the dye liquor can lead to a high degree of foaming when the machines are not fully flooded. The machines operate at low liquor ratios of about 10:1, so as with beam dyeing, exhaustion is good and water and energy consumption efficient.

### C. Stenter Machine

Stenter machine is not only a dryer but also used for many other purposes. Here knitted and woven fabric in open width form is treated. This multipurpose machine is used for the following purposes:

- 1) Drying
- 2) Heat setting
- 3) Width control
- 4) Curing
- 5) Finishing chemical application
- 6) Selvedge printing
- 7) Uniform moisture control for pad batch dyeing
- 8) Loop control
- 9) Weft straitening
- 10) Pigment dye application
- 11) Any thermo fixation
- 12) Padding mangle

Here finishing like OBA treatment, dry-cross finish, moist cross finish, wrinkle free finish, easy care finish can be done along with width and shrinkage control.

### **WORKING PROCEDURE**

Continuous drying is done in a stenter frame by convection. Blowers impinge hot air on both the top and bottom of fabric as the fabric passes through the chamber of the machine. Its frames are equipped with an endless chain on each side to grip the fabric by both <u>selvages</u> as it enters chamber.

The distance between the chains can be increased or decreased. In every chamber there are burners and blowers. The temperature of each chamber can be controlled individually. The fabric gripping in stenter, two systems are available:

- a) Clip to grip coarse fabrics like twill fabric.
- b) Pin to grip fine fabric.



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### D. Mechanical Finishing

A simple device which simulates the effects of calendaring is the domestic iron. Hot ironing makes garment smooth flat by removing its crinkles and creases. Besides making the fabrics free from creases by calendaring,

- 1) it is possible to raise the luster of the fabric,
- 2) make it compact by closing the threads,
- 3) impart a soft feel and 'thready' or
- 4) linen like appearance to it

It reduces the yarn slippage as well as thickness of the fabric by varying the calendaring operation.

The need of calendaring arises mainly because the fabric when it is wet processed and dried, is in the least lustrous state and its surface is not smooth because of presence of highly crimped and wavy threads. To meet this need the fabric is passed between the rollers or bawls of a machine termed 'Calender' and this mechanical process

### a) Raising

Raising is a process of lifting of a layer of fibres from the surface of the fabric so as to form a hairy surface or pile. The process imparts a warm and soft handle to both on the woven and knitted fabrics; in fact, the formation of a pile on the fabric can make it exceptionally soft. The pile also includes a large amount of air and since air is a bad conductor of the heat, the raised fabrics feel vary warm as well assoft. In the early days, only cotton and woolen fabrics were raised, but now besides these fabrics, man-made fibre fabrics also raised. If the fabric contains a woven or coloured pattern, the weave and pattern get subdued on raising and various colour blends. It is easier to raise the fabric in the wet state than in dry state. Therefore, moist raising is most widely adopted.

### b) Shearing

Shearing means removing or taking off fibre ends by cutting. It is carried out to cut fibres of random length to produce a level pile and prevent pilling in case of synthetic fibres by resulting of the height of the fibres particularly to produce clean staple fibre fabrics. Napped fabrics are mostly sheared.

Knitted fabrics are sheared on a machine having a single cutting head per unit where in case of woven fabrics multiple sheared are used. The pile heights are regulated by adjusting the distance between the cloth rest and rotary blade.

### c) Sanforising

A method of producing unshrinkable cotton fabric is to give it a thorough wash in a washing machine so as to allow it to shrink freely and then dry and finish it without stretching. This method however is not reliable and not suitable for commercial production.

### d) Napping

In napping the surface of the cloth is raised, cut even and smoothed by a napping machine known as planetary napper.

### e) Sueding

When a vary mild effect of raising is required a special type of machine called sueding machine is used. This consists of a vertical set of small diameter rotating rollers covered with an abrasive surface such as sand paper or emery cloth. There is a rubber covered pressure roll which presses the fabric against the abrasive covered cylinder. The abrasion of the fabric surface takes place when the fabric is open width presses between the pressure roller and abrasive covered cylinder. A vary sort pile thus raised according to the pressure of the fabric against these rollers which rotate in a direction of opposite to that of the fabric.

### f) Setting and Heat-setting

During manufacturing processes like spinning, weaving or knitting, the fabric is subjected to stresses and strains and release of these distortions in fabric leads to distortions in fabric structure and woven design and also uneven shrinkage. The purpose of the setting is to stabilize the woven structure of the fabric in a regular and permanent manner by relaxing the stresses. The effect is bought about by agencies like heat, moisture, and pressure and generally no chemicals are used in the process.

HIRA RISK

YARN GODOWN



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			N R	Electrical Shock.	Can cause pain and numbness.	Health hazard			F	rc			٧		٧	4	2	1	8	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat						
1	Electrical operation	R		chargeing of electrical vehicle battery. (may be short circuit of battery	May cause of fatal accident.	Health hazard	,			IPC				٧	4	4	3	1	12	High Risk	Employee awareness to be given for proper charging, use ppe's and stand on rubber mat. Separated place for charging area.						
			N R	Fire due to short circuit.	Property damage.	Fire hazard			F	ВС			٧			3	2	1	6	High Risk	Follow the panel board check list and frequently cleaning Provide fire equipment such as somke detector, fire extingusher.						
2	Loading and unloading of box (or)bags	R		Lifting of over weight	Can cause back and joint pain	Ergono mic hazard / Health hazard		,		IPC			٧	٧		3	2	3	18	Medium Risk	As per standard lift upto 50kg for man and30kg for woman.						
3	Box storage	R		Improber box stacking	Can cause high injury of human	Ergono mic hazard / Health hazard		,		IPC			4	٧		4	2	2	16	Medium Risk	Given awareness to employees to stacking method						
			N R	Electric vehicle and trolly may hit the person or porperty.	Crush injury or property damage or both may occur.	Ergono		,		ВС				٧		5	3	1	15	Medium Risk	Provide proper employee training on electric vehicle and trolly operation and usage.		L				We only use the electric
4	Electric vehicle and Trolly	R		Pushing and pulling of trolly.	Can cause back and joint pain,	mics				IPC			4			3	2	1	6	Medium Risk	Use proper lifting equipments and operated by trained persons.						vehicle
	movement	R		Improper handling of trolley or movement of trolley in ramp side	Can cause Cresh the figures and muscle	Hazard \ health hazard		,		IPC			٧		٧	5	3	1	15	Medium Risk	Wear the PPE's (Safety shoe)						and avoid using trolley
5	Insufficient illumination		N R	Person are hit the materials and Falling objectives, Entanglement	Can cause Eye strain and Head aches	Health hazard			F	IPC			٧	٧		2	2	1	4	Low Risk			L				
6	Electric fan operation	R		of workers clothes and hairs due to	Can cause of injury of human	Health hazard		,		rc			٧		4	4	2	1	8	Low Risk			L				
7	Cleaning process	R		Dust from the electric vehicle and atmospare air so dust is occupied in yarn box	1)Can cause respiratory problems 2)Property damage.	Health hazard	,			IPC					٧	4	3	1	12	Medium Risk	To be provide elimate sheet						
		R		Cobweb occupied in the switch box	1)Can leads to fire 2)Property damage.	Fire hazard		,	E	ВС			4			4	2	2	16	High Risk	Improve the cleaning process. and properly follow cleaning seehdule						

### Yarn Godown

The proposed action for the Hazards in Yarn godown is to electrical hazards in textile operation maybe related to electrical vehicle charging materials. Accident related to improper handling electrical vehicle charging,

Injuries from charging activities, maybe due to adapter problem or connecting terminal damage. To avoid those electrical rubber mat ,to avoid unauthorized persons are handling charging station, charging station handling should remain within restricted zone under supervision, with particular attention paid to proximity of electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways.

Conduct regular inspection and repair of machine tools, in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as Helmets, Insulating gloves, safety shoes. Respiratory Hazards: Dust generated in textile includes corttonbox dusts, which are present in yarn godown,

The improper of cleaning process Incase of fire incident to indicate the fire alarm switch and automatically sense the smoke detector and additionally provide fire extinguisher.

### • Fabric Knitting

The proposed action for the hazard in Fabric knitting is to electrical hazard and trolley movement, cleaning process in this operation maybe related to fabric machine. This machine due to create noise level .Its rotating parts maybe Entanglement of workers clothes and hairs due to rotating part, Finger or hand struck by in rotating parts.



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The fabric due to shifting in fabric storage area by the help of trolley, Injury from the needle point changing and hot oil replacement shifting of materials maybe due to handling activity .to avoid those handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity of electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of machine tools, in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as ear plug, apron ,head cap .Respiratory Hazards: Dust generated in Fabric knitting machine includes yarn dusts, which are present in fabric knitting area.

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1	Electric operation		N R	Electrical Shock.	Can cause pain and numbness.	Health hazard			Е	LC			٧			4	2	1	8	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat						
			N R	Fire due to short circuit.	Property damage.  Can cause of ear	Fire hazard			Е	ВС			٧			3	3	1	9	High Risk	Follow the panel board check list and frequently cleaning Provide fire equipment such as somke detector, fire extingusher. Use PPE ( Ear plug )			L	L		
2	Machine operation ( Rotating of parts and belt drive)	R		of the machine  Entanglement of workers clothes and hairs	problem  Can cause of injury of human	Health hazard	N	A		LC					√ √	4	2	1	8	Low Risk	To properly maintain the noise level						
4	Technician operation	R	N R	1) Oil refilling, 2) Needle replace, 3)Hot surfaces in machine, Etc problem	1) Can cause falling objects. 2) Can cause injury of finger ( or) body injury.	Health hazard		A	E	ВС				7	<b>V</b>	2	2	1	4	Low Risk							
5	Sharp tools	R		I)Fabric cutting by the help of scissor. 2)Machine service tools.	Can cause falling scissor and other tools so borken the bone or damage the muscle.	Health hazard			Е	BC			٧	٧		4	3	1	12	Medium Risk	Sharp tools should be tied and other machine (needle point aluminium rod) tools not be placed on machine top side and rotating parts.						
		R		Lifting of over weight (yarn box)	Can cause back and joint pain	Ergono mic hazard / Health hazard		А		IPC			٧			3	2	1	6	Low Risk					L		
6	Fabric loading area	R	N R	Fabric only placed on Rack or Roll stand (Platform) Falling of stored Fabric	1)Can cause damage the Fabric 2)Can cause falling objects, 3) Can cause injury of human	Ergono mic hazard / Health hazard	N			ВС			٧			4	3	1	12	Medium Risk	Provide proper employee training on stacking methods.only follow by authorised person only						
		R		Cotton dust from the fabric	Can cause respiratory problems Crush injury or	Health hazard	N			IPC					√	2	2	1	4	Low Risk				L	L		
		R		Trolly may hit the person or porperty.	property damage or both may occur	Ergono		А		ВС			٧			4	2	1	8	Low Risk			L	L	L		
7	Trolly movement	R		Pushing and pulling of trolly.	Can cuase body and joint pain	mics Hazard	N			IPC			√			4	3	1	12	Medium Risk	Use proper lifting equipments and operated by trained persons.		L				
		R		Improper handling of trolley or movement of trolley in ramp side	Can cause Cresh the figures and musele	\ health hazard		А		IPC			٧		4	5	3	1	15	Medium Risk	Wear the PPE's (Safety shoe)						
		R		1)Entanglement of workers clothes and hairs due to rotating part 2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard		А	Е	IPC					4	4	3	1	12	Medium Risk	Given awareness to employees to rotating pats and (PPE's)wear apron,head cap.						
		R	N R	Lighting Insufficient illumination	It cause eye sight problem     Machine parts can hit the human body	Health hazard	N			IPC			٧			2	2	1	4	Low Risk							
		R		Continuous exposure to light	Eye stress, eye irritation and head aches	mic hazard / Health hazard	z			ВС			٧	<b>V</b>		4	2	1	8	Low Risk							
8	Inspection machine	R		Lifting of heavy fabric operation (Lifting machine collapse)	Property damage     Body parts caught into the lifting machine.	Ergono mic hazard / Health hazard		А		IPC			٧			3	3	1	9	Low Risk							
		R		Workers contacting with moving parts of machinery	Can cause of injury of human  Can cause	Health hazard	N			IPC			٧			4	2	1	8	Low Risk				L	L		
		R		Cotton dust from the fabric	respiratory problems	Health hazard	N			IPC					√	3	2	1	6	Low Risk			L	L	L		
		R		Long standing and continuous checking of fabric	Leg pain (varicose veins) and if the lux level is low it may cause eye problem	Ergono mic hazard / Health hazard	N			IPC			٧			3	4	1	12	Medium Risk	Proper floor checking mat has to be given and proper lux level should be maintained						
		R		Long standing and continuous usage of wrist (Stickering operation)	Can cause Leg pain And wrist pain	Health hazard	z			IPC			٧	<b>V</b>		3	4	1	12	Medium Risk	Proper must provide periodical interval.				L		
		R		Dust from the machine cleaning and floor cleaning	Can cause respiratory problems	Health hazard	N			IPC	Ш				√	2	2	1	4	Low Risk				L	L		
9	Cleaning procss	R		Machine not proper cleaning	Can leads to fire	Fire hazard		А	Е	ВС			<b>V</b>			4	4	1	16	High Risk	1)Given cleaning awareness and training to employees, 2)Machine service Should be properly maintain machine sechdule 3)Provide fire equipment such as somke detector, fire extingusher.						
		R		Cobweb occupied in the pannel and cable	Can leads to fire     Property damage.	Fire hazard		А	Е	BC			<b>V</b>			4	3	1	12	High Risk	Improve the cleaning frequency			L	$\perp$		
9	Working operation			1) Yam insert the stand. 2) Fabric tack down the machine. 3)Inspection the fabric 4)Pushing and pulling of trolly (Trolly may hit the person or porperty) 5)Storage the fabric	1)Can cause of injury of human 2)property damage. 3)Insufficient illumination	Health hazard										3	2		6	Low Risk	DAwarness to be given for proper working instruction, 2)Provide proper lightning in the inspetion machine, 3)Provide employee awarness about rotarring parts and emergench Button	3	2		6	Low Risk	



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### • Dyeing

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		N R	Electrical Shock.	Can cause pain and numbness.	Health hazard			Е	LC			٧		٧	4	2	1	8	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat						
1	Electric operation	N R		Property damage.	Fire hazard			Е	ВС			٧			3	2	1	6	High Risk	Follow the panel board check list and frequently cleaning Provide fire equipment such as somke detector, fire extingusher.						
	•	R	Loose connection of Switching operation	injury of human and pain.	Health hazard		A		IPC			٧			4	3	1	12	Medium Risk	Provide proper employee training on switch handling procedure		L				
		R	Sensor problem o bypass the sensor	Can cause of injury of human and fabric materials damage	Health hazard		A		IPC			٧	٧		5	3	1	15	Medium Risk	Given awareness to employees to sensor details.  Should not be bypass the sensor.		L				
		N R	Confined space	Respiration problem	Health hazard		A	Е	IPC			<b>V</b>	<b>V</b>	٧	3	2	2	12	High Risk	Provide proper employee training on confined space, Authorised person only entry the confined space, We are entry the confined space wea the PPE's. JPressure gauge (or) pressure						
		R	Pressure vessel	Can leads to explosion of pressure vessel.	Health hazard			Е	ВС			٧	٧	L	4	3	1	12	Medium Risk	display and should have marking safe working. 2)Pressure should not greater than but unfortunately pressure	1	L				
		R	Pressure vessel doors	Dnot entry into the thies machine while at running condition.	Health hazard		A		IPC			٧	٧		4	4	1	16	Medium Risk	increase at the time working for safety valve.  3)Doors should be mulit bolted doors and should have interlocking if cover wareness to the employees to						
	Dying machine operation	R	Safety valve due to no opeate in high pressure	explosion of machine	Health hazard and Property damage Health			Е	ВС			٧	٧		5	2	2	20	High Risk	valve handling details.  2)Pressure should not greater than safe working pressure.  3)Regular maintance and regular		L				
	(TONY & AKMM)	R	Drain valve ( Auto- / Manual function ) not function Pressure valve	explosion of machine	hazard and Property damage			Е	ВС			٧	٧		4	2	2	16	High Risk	inspection has been done by safety valve,drain & pressure valve functions 4)Machine service Should be properly maintain machine sechdule		L				
		R	due to no opeate is high pressure (AKMM machine only)	Can leads to explosion of machine	Health hazard and Property damage			Е	ВС			٧	٧		4	2	2	16	High Risk	5) safety valve not function so (manual) to start the cooling pocess of the machine and immediately open pressure valve pert open drain valve						
2		R	Handling of door 1)Automatic (or) manuval function of Door ,not proper locking door. 2)By pass the doo pisston's 3)machine run time door open		Health hazard	N	A		IPC			<b>V</b>	٧	٧	4	2	1	8	Low Risk							
		R	Hot water spillage / Hot objects	injury	Health hazard		A	Е	IPC			٧		٧	4	3	1	12	Medium Risk	Provide proper training on pipe line handling insulation, hot surface pipe line work should be use Heat resistant gloves.		L				
		R R	Falling down due to obstacles (Trolley, Box,Can,Spillage of chemical etc)	Can cause heavy injury of human	Health hazard		A		IPC			<b>V</b>	٧		3	2	1	6	Low Risk							
	Dying machine operation (TONY &	R	Machine chemical storage tank (Manuval feeling of chemical)	Can cause silppery	Health hazard		A	Е	IPC			<b>V</b>		٧	4	3	1	12	Medium Risk	Provide proper training on chemical handling instruction, chemical handling for employee wear the PPE's.						
	AKMM)	R	Display handling (Malfunction of machine)	1)Can cause of explosion of machine, 2)Can cause injury of human, 3)Property damage.	Health hazard	N			ВС			<b>V</b>	<b>V</b>		3	2	1	6	Low Risk							
		R	Unwanted sound and fitting damag of Feeding motor with rotating part	or may fatal	Health hazard		A	Е	ВС			٧		٧	4	3	1	12	High Risk	Machine service sechdule Should be properly maintain. All the polt nut proper torque						
3	Loading & Unloading for fabric	R	Lifting of over weight	Can Cause back and joint pain	Ergonomics Hazard \ health hazard		A		IPC			٧			4	2	1	8	Low Risk							
		R	Trolly may hit the person or porperty	Crush injury or property damage or both may occur			A		ВС			<b>V</b>			4	2	1	8	Low Risk							
4	Trolly movement	R	Pushing and pulling of trolly.	Can cuase body and joint pain	Ergonomics Hazard \	N			IPC			<b>V</b>			4	3	1	12	Medium Risk	Use proper lifting equipments and operated by trained persons.						
		R	Improper handling of trolley or movement of trolley in ramp side	Can cause Cresh the figures and	health hazard		A		IPC			<b>V</b>		٧	5	3	1	15	Medium Risk	Wear the PPE's (Safety shoe)						



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SL. NO	TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	E	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	Remarks/Control Ref
5	Steam line	R		Leakage of steam	Can cause burn injury	Health hazard		A	Е	LC			<b>V</b>		1	4	2	1	8	Low Risk							
		R		Eye contact while during operation	Can Cause eye irritation	Health hazard		A		ВС			1	٧	٧						Given awareness to employees to						
		R		Inhalation of chemical	Can cause Respiratory problem	Health hazard		A		IPC			٧	٧	٧						wear the PPE's. Authorised person are only handle the chemical.		L				
6	Chemical handling	R		skin contact	Can cause skin allergy or skin irritation	Health hazard	N			IPC			٧	٧	٧	4	3	2	24	High Risk	Any irrutation of body and eyes we are use the eye wash station and shower station. All the chemical we are place only						
		R		Chemical storage place can spillage of chemicals	Can cause silppery and may harmful the human.	Health hazard	N	A		IPC			٧	٧	٧						secondary container.						Use the spillage kit
		R		Wet floor & slippery surface	Can cause slippery and cause body injury,	Health hazard	N			IPC			1	٧	1					Low Risk							
7	Disposal of Dyeing fabric waste water	R		Splashing in the eyes while washing chemical fabric or materials	Can cause eye injury,	Health hazard	N			IPC				٧	٧	3	2	1	6	Low Risk							
	waste water	R		Due to Dying fabric and waste water are generated.	It is not disposed and maintained properly it will cause contamination to the air,land and water	Environmen tal hazard		A		LC			٧	٧		5	3	1	15	Medium Risk	Collect Waste Water properly and send to ETP.						
8	Cleaning procss	R		Dust from the machine cleaning and floor cleaning	Can cause respiratory problems	Health hazard	N			IPC			٧		1	2	2	1	4	Low Risk							
	Creating process	R		Machine not proper cleaning	can leads to fire	Fire hazard		A		IPC			1		1	4	4	1	16	High Risk	1)Given cleaning awareness and training to employees, 2)Provide fire equipment such as somke detector, fire extingusher.						
		R		Handling of door (Automatic and manuval function of Door) (machine run time door open)	Can cause human injury	Health hazard	N			ВС			<b>V</b>	٧	<b>V</b>	4	2	1	8	Low Risk							
		R		Over loading of fabric	1)Can cause human injury 2)Property damage.	Health hazard		A		ВС			1			3	2	1	6	Low Risk							
		R		Dnot hit the machine by the trolley and fabric box	1)Can cause human injury 2)Property damage.	Health hazard	N			IPC			٧			3	2	1	6	Low Risk							
9	Hydro Extractor (Dyeing)	R		Electric shock ( due to wet hand not be opearte the panel board switching functions)	Can cause pain and numbness.	Health hazard		A		LC			٧			3	2	1	6	Low Risk							
		R		Unloading water pipe line (Due to fabric Dyeing and washing the waste water are generated.)	It is not disposed and maintained properly it will cause contamination to the air,land and water	Environmen tal hazard		A		LC			<b>V</b>	٧	1	5	3	1	15	Medium Risk	Collect Waste Water properly and send to ETP.	l					
		R		Entanglement of workers clothes and hairs due to Main motor and belt drive	Can cause of injury of human	Health hazard	N			IPC			٧			4	2	1	8	Low Risk							
		R		Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard	N			IPC			٧			4	2	1	8	Low Risk							



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		OPERAT ON	ı			С	onditi	on			Curr	ent Cor	ntrols				Pre ri	isk					Post	risk		Ref
SL. NO	TYPE OF OPERATION	ROUTINE NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	E	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	Remarks/Control Ref
		R	Rotating table Over loading of fabric and leg to touch the rotating plate	1)Can cause human injury 2)Machine rotating part damage.	Health hazard		A		IPC			<b>V</b>			3	2	1	6	Low Risk							
		R	Rope Squeer (Instert the fabric at the rotating parts)	1)Can cause fingers and hand injury	Health hazard	N			IPC			<b>V</b>			3	2	1	6	Low Risk							
		R	Amberla (Fabric insert)	1)Can cause fingers and hand injury	Health hazard	N			IPC			1	1		3	2	1	6	Low Risk							
		R	Fabric cutting by the help of Rotating sharp Blade (E+L blade).	Can cause falling cutting tools so borken the bone or damage the	Health hazard		A	Е	ВС			<b>√</b>	٧		3	3	1	9	Low Risk							
		R	Machine service tools and spare parts.	muscle.																						
10	Slit opener(Dyeing)	R	Dnot hit the machine by the trolley and fabric box	1)Can cause human injury 2)Property damage.	Health hazard	N			IPC			<b>V</b>			3	2	1	6	Low Risk							
		R	Electric shock (due to wet hand not be opearte the panel board switching functions)	Can cause pain and numbness.	Health hazard		A		LC			<b>V</b>			3	2	1	6	High Risk	Use proper insulated wiring with earthing .						
		R	Fabric water unloading from mangel ( Due to fabric water is drain )	It is not disposed and maintained properly it will cause contamination to the air,land and water	Environmen tal hazard		A		LC			<b>V</b>	٧		5	3	1	15	Medium Risk	Collect Waste Water properly and send to ETP.						
		R	Entanglement of workers clothes and hairs due to Main motor and belt drive	Can cause of injury of human	Health hazard	N			IPC			<b>V</b>			4	2	1	8	Low Risk							
		R	Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard		A		IPC			<b>V</b>			4	2	1	8	Low Risk							

### Dyeing

The proposed action for the Hazards in dyes kitchen shop is to implement First and foremost, using a less toxic or environment friendly abrasive media will give less dominant after effects on the atmosphere. Water based blasting media may be preferred due to its dust reduction property.

The proposed action for the hazard in dyeing is to chemical handling ,confined space, electrical hazard and trolley movement, cleaning process in this operation maybe related to fabric machine. This machine due to create health .Its rotating parts maybe Entanglement of workers clothes and hairs due to rotating part, Finger or hand struck by in rotating parts. The fabric due to shifting in fabric storage area by the help of trolley,

Injury from the door handling ,maintain proper temperature and steam line handling and rejection water go to the etp collection tank maybe due to handling activity .to avoid those handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity chemical explosion ,and the electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of machine tools safety valve ,drain valve ,temperature maintain properly in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as PPE (The nitrigul glove and respiratory mask, gum boot, pvc apron) .Respiratory Hazards: Dust generated in chemical handling includes dyes formation of dusts, which are present in dyeing machine area.



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### Stenter

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	(Textile Division)  Page 1 of 3		_		Occupational He	ealth & Saf	ety H	lazaro	d Iden	tification &	k Risk	Asse	ssme	nt (H	IRA)	Stud	,				Rev. No Rev. Date				15.11.		
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		OPER:	RATIO N					Conditi				Cum	ent Cor	ntrols				Pre	risk					Post	t risk		
SLN O	TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	Α.	E	Concerns LC/BC/ IPC	Binination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY	LIKELIHOOD SCALE	EXPOSUR	RISKSCORE	RISKLEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISKSCORE	RISKLEVEL	Remarks/Co ntrol Ref
			NR	Electrical Shock.	Can cause pain and numbness.	Health hazard			Е	LC			٧		٧	3	2	1	6	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat Follow the panel board check list and						
1	Electric operation		NR	Fire due to short circuit.	Property and machine damage	Fire			Е	BC			٧			3	1	1	3	High Risk	frequently cleaning Provide fire equipment such as somke detector, fire extingusher.						
		R		Loose connection of Switching operation Sensor problem or	Can cause fabric travel hot surface area Can cause fabric travel	hazard		A		IPC			٧	,		4	3	1	12	High Risk	To requiarly check the swith and sensor should not be bypass the sensor and switching operation						
		R R		bypass the sensor Needle and eye Guard (Needle can broken	hot surface area  Can cause injury of	Health		A		IPC LC			1	٧ ٧	<b>√</b>	4	2	1	16	High Risk							
				while during operation) Entanglement of workers clothes and	eyes and fingures  Can cause injury of	hazard		A						_		4	2	1	8	Low Risk							
		R		hairs due to main motor pully Entanglement of	legs	hazard		A		IPC			<b>V</b>		٧	4	4	1	16	Medium Risk	Provide proper employee awarness of needle guard and eyeguard,insert the motor cover properly.						
2	Sewing machine operation	R		worker clothes or fingurs due to moving parts and rotating parts	Can cause injury of eyes and fingures	Health hazard		A		IPC			٧		٧						Machine service Should be properly maintain machine sechdule.						
		R		b	Can cause burn injury	Health hazard	N			IPC			<b>V</b>	٧	٧	3	2	1	6	Low Risk							
		R		Machine run by the help of leg handle ,impoper condition of rupper mat	Electric shock	Health hazard	N			IPC			<b>V</b>			4	3	1	12	High Risk	Provide the electrical rubber mat ,frequently checking the rubber mat.						
		R		Yam cone fixed by the help of stand	Property damage.	Health hazard	N			IPC			<b>V</b>			3	2	1	6	Low Risk							
		R		Insufficient illumination of needle	Can cause injury of	Health hazard			Г	IPC	П		<b>V</b>			3	2	1	6	Low Risk					П		
		R		point (Mangle operation) 1)Finger or hand struck by in rotating parts. 2)Entanglement of workers clothes and	l)Can cause of finger injury or hand injury 2)Can cause of injury of skin	Health hazard		A		IPC			٧	<b>√</b>	<b>V</b>	4	2	2	16	Medium Risk	1)Awareness has given to the operators wear the PPES and rotating parts details,						
		R		hars (Mangle operation ) 1)Chemical spilling on human body 2)Chemical spillage make slippery floor 3)Chemical spillage may chance to contaminate air	1)Can cause skin and eye irritation 2)Can cause risk of falling 3)Can cause respiratory problem	Environm ental \ health hazard		A		LC			٧	٧	٧	5	2	2	20	Medium Risk	2)Clean the floor properly after mixing the chemical, 3)Provie the machine cover (or)pull card switch.						
		R		(Fram operation -The fabric entry to rotating and platform) 1)Finger or hand struck by in rotating parts. 2)Entanglement of workers clothes and hairs	Can cause of finger injury or hand injury 2)Can cause of injury of skin or crush	Fire		A		ВС			٧		٧	4	2	2	16	High Risk	I)Given awareness to employees to machine handling procedure, and wear the PPEV Hear resistive						
3	Stenter machine operation (Fabric curing)	R		maintain, Door open for machine runing	Can leads to fire of fabric Can cause increase the body temperature or burning injury	hazard		A		ВС			٧	٧	٧	3	2	2	12	High Risk	glove,pron,mask) 2)Provide fire equipment such as somke detector, fire extingusher.						
		R		condition (Cooling champer - Fabric rotating of cooling area) 1)Finger or hand struck by in rotating parts. 2)Entanglement of workers clothes and hairs	1)can cause skin and eye irritation 2)Can cause of finger injury or hand injury	Health hazard	N			IPC			٧	٧	٧	5	2	2	20	Low Risk							
		R		(Oil pipe line • Hot oil fllow of pipe line) The leakage of oil		Ergonom ics Hazard \ Health hazard			E	ВС			7		1	5	2	2	20	High Risk	1)Handling only authorised person, and wear the PPE's.     2)thermo back machine out let gate valve close and machine off.						
		R		(Plating and folding - Fabric go to pin) Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard	N			IPC			٧			5	1	2	10	Low Risk							
		R		Workers continuously standing	Can cause of varicose veins	Ergonom ics Hazard	N			IPC			٧	1		4	2	1	8	Low Risk							
		R		Continuous exposure to light	Eye stress, eye irritation and head aches	Health hazard	N			IPC			<b>V</b>			4	2	1	8	Low Risk							



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SLN O	TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	E	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD SCALE	EXPOSUR	RISK SCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD SCALE	EXPOSUR	RISK SCORE	RISK LEVEL	Remarks/Co ntrol Ref
		R		1)Entanglement of workers clothes and hairs 2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard		A	Е	IPC					٧	4	2	1	8	Low Risk							
		R		Lighting Insufficient illumination	It cause eye sight problem     Moving parts can hit the human body	Health hazard	N			IPC			٧			2	2	1	4	Low Risk							
		R		Continuous exposure to light	Eye stress, eye irritation and head aches	Health hazard	N			BC			٧	٧		4	2	1	8	Low Risk							
4	Inspection machine	R		operation (Lifting machine collapse)	Property damage     Body parts caught into the lifting machine.	Health hazard		A		IPC			٧			3	3	1	9	Low Risk							
		R		Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard	N			IPC			٧			5	2	1	10	Low Risk							
		R		Workers continuously standing	Can cause of varicose veins	Ergonom ics Hazard	N			IPC					1	4	2	1	8	Low Risk							
		R		Dust (cotton dust from the	Can cause respiratory problems	Health hazard	N			IPC			1			3	2	1	6	Low Risk							
		R		fabric ) ( Plating and folding ) Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard	N			IPC			٧	٧		4	2	1	8	Low Risk							
5	Insufficient illumination	R		Person are hit the materials and Falling objectives,	Can cause Eye strain and Head aches	Health hazard			Е	IPC			1	1		5	2	1	10	Low Risk							
		R		Trolly may hit the person or porperty.	Crush injury or property damage or both may occur	Ergonom		A		ВС			1			4	2	1	8	Low Risk							
6	Trolly movement	R		Pushing and pulling of trolly.	Can cuase body and joint pain	ics Hazard \	N			IPC			1			4	3	1	12	Medium Risk	Use proper lifting equipments and operated by trained persons.						
		R		Improper handling of trolley or movement of trolley in ramp side	Can cause Cresh the figures and musele	health hazard		A		IPC			1		٧	5	3	1	15	Medium Risk	Wear the PPE's (Safety shoe)						
7	Loading & Unloading of fabric	R		Lifting of over weight	Can Cause back and joint pain	Ergonom ics Hazard \ health hazard		A		IPC			1			5	4	1	20	Medium Risk	Pin and heavy fabric materials are handle only trolley						Man worker Only operate the trolley
8	Finished Fabric loading area	R		Fabric only placed on Pin only	1)Can cause damage the Fabric     2)Can cause falling objects,     3) Can cause injury of human	Health hazard		A		IPC			٧	7		3	2	1	6	Low Risk							
		R		Cotton dust from the fabric	Can cause respiratory problems		N			IPC			1		1					Low Risk							
		R		Eye contact while during operation	Can Cause eye irritation			A		ВС			٧	1	1					Low Risk							
		R		Inhalation of chemical	Can cause Respiratory problem	Harb		A		IPC			٧	٧	٧					Low Risk							
9	Chemical handling	R		skin contact	Can cause skin allergy or skin irritation	Health hazard	N			IPC			٧	٧	٧	5	2	1	10	Low Risk							
		R		can spillage of chemicals	Can cause silppery and may harmful the human.		N	A		IPC			1	٧	1					Low Risk							
		R		Wet floor & slippery surface	Can cause slippery and cause body injury,	Health hazard	N			IPC			٧	1	1					Low Risk							
10	Disposal of chemical mixed fabric waste	R		Splashing in the eyes while washing chemical fabric or materials	Can cause eye injury,		N			IPC				1	٧	5	2	1	10	Low Risk							
	water	R			It is not disposed and maintained properly it will cause contamination to the air,land and water	Environm ental hazard		A		LC			٧	٧		5	3	1	15	Medium Risk	Collect Waste Water properly and send to ETP.						



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SL.º	N TYPE OF OPERATION	ROUTINE	NON BOUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	E	Concerns LC/BC/1PC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISKLEVEL		SEVERITY	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL.	Remarks/Co ntrol Ref
		R		leakage of steam	Can cause burn injury	Health hazard			Е	ВС			^	٧		5	3	1	15	Medium	provide insulation of the steam line.     2/Regular maintance and regular inspection has been done.     3/Provide awarness about steam and its effect.						
11	Thumble dryer	R		Handling of door (Automatic and manuval function of Door) (machine run time door open)	Can cause human injury	Health hazard		A		IPC			1	٧		4	2	1	8	Low Risk							
	,	R		Fabric loading and unloading imprperly	Can Cause human injury Property damage.	Health hazard	N			IPC			1			4	2	1	8	Low Risk							
		R		Entanglement of workers clothes and hairs due to Main motor and belt drive	Can cause of injury of human	Health hazard	N			IPC			1		٧	4	2	1	8	Low Risk							
		R		Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard		A		IPC			1			4	2	1	8	Low Risk							
		R		Dust from the machine cleaning and floor cleaning	Can cause respiratory problems	Health hazard	N			IPC			1		٧	2	2	1	4	Low Risk							
12	Cleaning process	R		Machine not proper cleaning	Can leads to fire	Fire hazard		A		IPC			1		٧	4	2	2	16	rugu nisk	1)Given cleaning awareness and training to employees, 2)Provide fire equipment such as somke detector, fire extinguisher.						

### Stenter Machine

The proposed action for the hazard in stenter is to chemical handling and rotating parts, electrical hazard and trolley movement, hot surface machine, cleaning process in this operation maybe related to stenter machine. This machine due to create health .Its rotating parts maybe Entanglement of workers clothes and hairs due to rotating part, Finger or hand struck by in rotating parts .The fabric due to shifting in fabric storage area by the help of trolley,

Injury from the door handling ,maintain proper temperature and steam line handling and rejection water go to the etp collection tank maybe due to handling activity .to avoid those handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity chemical explosion ,and the electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of machine tools safety valve ,drain valve ,temperature maintain properly in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as PPE (The nitrigul glove and respiratory mask, gum boot, pvc apron) .Respiratory Hazards: Dust generated in chemical handling includes dyes formation of dusts, which are present in stenter machine area.



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### Mechanical Finishing

The proposed action for the hazard in mechanical finishing is to drum rotating parts and knife or plate ,electrical hazard and trolley movement, hot surface machine ,cleaning process in this operation maybe related to mechanical finishing machine. This machine due to create health .Its rotating parts maybe Entanglement of workers clothes and hairs due to rotating part, Finger or hand struck by in rotating parts .The fabric due to shifting in fabric storage area by the help of trolley,

Injury from the drum rotating parts, knife handling and steam line handling, maybe due to handling activity .to avoid those handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of machine tools in properly in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as PPE (The pvc apron, dust mask, ear plug) .Respiratory Hazards: Dust generated in machines includes dusts, which are present in mechanical finishing machine area.

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AII .	LIMITED UNIT - (Textile Division)	I	-		Occupational l	Health &	Safe	ty Ha	zard	Identific	atio	n & 1	Risk A	ssessmo	nt (HI	RA) Stu	dy				Rev. No			0	5		
	Page 1 of 5																				Rev. Date			15.11.	.2022		
Depar	tment: MECHANICAL HING	9	Area/	line: MECHANICALFI	NISHING			Dept.	Doc N	io.:					Revn No	/Revn Da	ate:										
	,	OPE	RATI				С	onditio	on				Current (	Controls			Р	re risk	k				Post	risk		Т	
SLN O	TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	А	Е	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	Remarks/ Control Ref
			NR	Electrical Shock.	Can cause pain and numbness.	Health hazard			Е	LC			٧		1	3	2	1	6	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat Follow the panel board check list and						
			NR	Fire due to short circuit.	Property damage.	Fire hazard			Е	ВС			√			3	2	1	6	High Risk	Provide fire equipment such as somke detector, fire extingusher.						
1	Electric operation	R		Loose connection of Switching operation ( Drum roller and blade operation )	Can cause of injury of human and pain.	Health hazard		A		IPC			<b>V</b>			5	3	1	15	Medium Risk	To reqularly check the swith and sensor, should not be bypass the						
		R		Sensor problem or bypass the sensor ( Drum roller and blade operation ).	Can cause of injury of human and fabric materials damage	Health hazard		A		IPC			<b>V</b>	√		5	3	1	15	Medium Risk	sensor and switching operation						
2	Loading & Unloading for fabric	R		Lifting of over weight	Can Cause back and joint pain	Health hazard		A		IPC			<b>V</b>	√		3	2	1	6	Low Risk							
		R		Trolly may hit the person or porperty.	Crush injury or property damage or both may occur	Ergono		A		ВС			<b>V</b>			4	2	1	8	Low Risk							
3	Trolly movement	R		Pushing and pulling of trolly.	Can cuase body and joint pain	mics Hazard	N			IPC			√			4	3	1	12	Medium Risk	Use proper lifting equipments and operated by trained persons.				П	П	
		R		Improper handling of trolley or movement of trolley in ramp side	Can cause Cresh the figures and muscle	\ health hazard		A		IPC			٧		7	5	3	1	15	M 15	Wear the PPE's (Safety shoe)						
		R		(Draft roller and Winder,Connective c rod operation) 1)Entanglement of workers clothes and hairs 2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard	N			IPC			٧	٧		4	2	1	8	Low Risk							
		R		(Drum roller operation) Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard		A		IPC			<b>V</b>	<b>V</b>													
4	Fabric finishing machine operation 1)Raising machine, 2)Combing	R		( Plating and folding ) Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard		A		IPC			٧		7	4	2	1	8	Low Risk							
	machine.	R		(Dust collection pipe line) The chocking the pipe line due to Dust or cloath	· Can lead to fire	Fire hazard / Environ										5	4	1	20	High Risk	Every hours checking the Waste collection motor and pipe line						
		R		( Dust collector motor ) The chocking the motor due to Dust or cloath		ment hazard			Е	BC			<b>V</b>	<b>V</b>							(chocking of the waste cotton)						
		R		Workers continuously standing	Can cause of varicose veins	Ergono mics Hazard	N			IPC			4			4	2	1	8	Low Risk					Ц	$\rfloor$	
		R		Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard	N			IPC			٧			4	2	1	8	Low Risk							



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	T			RATI N				(	onditi	on				Current	Controls			1	Pre ris	k				Post	risk		
SLL		TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	Е	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY	LIKELIHOOD SCALE	EXPOSUR	RISK SCORE	Remarks/ Control Ref
			R		(Draft roller and Winder, Connectiv e rod operation) 1)Entanglement of workers clothes and hairs 2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard	N			IPC			1	1		4	2	1	8	Low Risk						
			R		(Blade operation) Finger or hand struck or cut by in rotating parts	Can cause injury	Health hazard			Е	IPC			1	1	1	5	3	1	15	Medium Risk	Given awareness to employees to wear Metal glove and apron,head cap, 2)Provide proper cover.					
5	;	Shearing machine,	R		( Plating and folding ) Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard		A		IPC			1			4	2	1	8	Low Risk						
			R		(Dust collection pipe line) The chocking the pipe line due to Dust or cloath	Can lead to fire	Fire hazard										1	4		16	High	1)Provide proper training on waste collection method,					
			R		(Dust collector motor) The chocking the motor due to Dust or cloath		Environ ment hazard			Е	ВС			1	1		4	*	1	10	Risk	2)every hours checking the Waste collection motor and pipe line					
			R		Workers continuously standing	Can cause of varicose veins	Ergono mics Hazard	N			IPC			1			4	2	1	8	Low Risk						
			R		Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard			Е	IPC			1	1		4	2	1	8	Low Risk						



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			RATI N				С	onditio	n				Current (	Controls			P	re risl	:				Post	isk		
SL.N O	TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	Е	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD SCALE	EXPOSUR	RISKSCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	Remarks/ Control Ref
		R		(Oil pipe line) The leakage of oil	Can cause burn injury Oil affect the Land	Health hazard/ Environ ment hazard			E	IPC			٧	٧	1	4	2	2	16	Medium Risk	Machine service Should be properly maintain machine sechdule.					
6	Continus tumble	R		(champer operation) Hot surfaces of the machine, the sensor not proper function	Can cause increase the body temperature. Can cause fire of fabric	Fire hazard		A		ВС			1	٧	٧	3	2	1	6	High Risk	Given awareness to employees to wear apron,mask and sensor information, Sensor value temperature sensor value should be known					
		R		(Plating and folding) Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard	N			IPC			1			4	2	1	8	Low Risk						
		R		Workers continuously standing	Can cause of varicose veins	Ergono mics Hazard	N			IPC			1	1		4	2	1	8	Low Risk						
		R		Leakage of steam	Can cause burn injury	Health hazard			E	ВС			1	٧		4	3	1	12	Medium Risk	provide insulation of the steam line.     2)Regular maintance and regular inspection has been done.     3) Provide awarness about steam and its effect.					
,	Thomas desired	R		Handling of door (Automatic and manuval function of Door) (machine run time door open)	Can cause human injury	Health hazard		A		IPC			1	1		4	2	1	8	Low Risk						
'	Thumble dryer	R		Fabric loading and unloading improperly	Can Cause human injury Property damage.	Health hazard	N			IPC			1			4	2	1	8	Low Risk						
		R		Entanglement of workers clothes and hairs due to Main motor and belt drive	Can cause of injury of human	Health hazard	N			IPC			1		٧	4	2	1	8	Low Risk						
		R		Loose connection of Switching operation	Can cause of injury of human and fabric materials damage	Health hazard / Fire hazard		A		IPC			1			4	2	1	8	High Risk	To reqularly check the switch opeation					
0	Cleaning	R		Dust from the machine cleaning and floor cleaning	Can cause respiratory problems	Health hazard	N			IPC			1		7	2	2	1	4	Low Risk						
8	Cleaning procss	R		Machine not proper cleaning	Can leads to fire	Fire hazard		A		IPC			1		1	4	4	1	16	High Risk	1)Given cleaning awareness and training to employees, 2)Provide fire equipment such as somke detector, fire extingusher.					



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### • Final Inspection

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Depar	Page 1 of 4 tment: FINAL INSPECTION		Ares	line: FINAL INSPECTI	ION			Dent	Doc N	No.:					Reve	No./F	tevr *	Date:			Rev. Date				15.11	.2022	
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SLN O	TYPE OF OPERATION	ROUTINE	NON ROUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N	A	Е	Concerns LC/BC/ IPC	Elimination	Substitution	Engineering Control	Administrative Control	Personal Protective Equipment (PPE)	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	CONTROL MEASURE	SEVERITY SCALE	LIKELIHOOD	EXPOSUR	RISK SCORE	RISK LEVEL	Remarks/C ontrol Ref
			NR	Electrical Shock.	Can cause pain and numbness.	Health hazard			Е	LC			<b>√</b>		<b>V</b>	3	2	1	6	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat						
1	Electric operation		NR	Fire due to short circuit.	Property damage.	Fire hazard			Е	вс			4			3	2	1	6	High Risk	Follow the panel board check list and frequently cleaning Provide fire equipment such as somke detector, fire extingusher.						
		R		Loose connection of Switching operation	Can cause of injury of human and pain. Can cause of	Health hazard		Α		IPC			√			4	2	1	8	Low Risk							
		R		Sensor problem or bypass the sensor Person are hit the	injury of human and fabric materials damage Can cause Eye	Health hazard		Α		IPC			√	<b>V</b>		4	2	1	8	Low Risk							
2	Insufficient illumination		NR	materials and Falling objectives,	strain and Head aches	Health hazard			Е	IPC			<b>V</b>	<b>√</b>		2	2	1	4	Low Risk							
		R		Trolly may hit the person or porperty.	Crush injury or property damage or both may occur	Ergonom		А		вс			√			4	2	1	8	Low Risk							
3	Trolly movement	R		Pushing and pulling of trolly.	Can cuase body and joint pain	ics Hazard \ health	N			IPC			<b>V</b>			4	3	1	12	Medium Risk	Use proper lifting equipments and operated by trained persons.						
		R		Improper handling of trolley or movement of trolley in ramp side	Can cause Cresh the figures and muscle	hazard		А		IPC			√		<b>V</b>	5	3	1	15	Medium Risk	Wear the PPE's (Safety shoe)						
		R		1)Entanglement of workers clothes and hairs 2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard		А	E	IPC					<b>V</b>	4	2	1	8	Low Risk							
		R		Lighting Insufficient illumination	It cause eye sight problem     Moving parts can hit the human body	Health hazard	N			IPC			√			2	2	1	4	Low Risk							
		R		Continuous exposure to light	Eye stress, eye irritation and head aches	Health hazard	Z			вс			√	<b>√</b>		4	2	1	8	Low Risk							
4	Inspection machine	R		Lifting of heavy fabric operation (Lifting machine collapse)	1) property damage 2) body parts caught into the lifting machine.	Health hazard		А		IPC			<b>√</b>			3	3	1	9	Low Risk							
		R		Workers contacting with moving parts of machinery	Can cause of injury of human	Health hazard	N			IPC			<b>√</b>			4	2	1	8	Low Risk							
		R		Workers continuously standing	Can cause of varicose veins	Ergonom ics Hazard	N			IPC	П				<b>√</b>	4	2	1	8	Low Risk							
		R		Dust (cotton dust from	Can cause respiratory	Health hazard	N			IPC	П	$\exists$	√			3	2	1	6	Low Risk			Г				
		R		the fabric )  Loading &  Unloading of fabric (Lifting of over	Can Cause back and joint pain	Health hazard	N			IPC			<b>√</b>	<b>V</b>		4	2	1	8	Low Risk							
		R		weight)  1)Entanglement of workers clothes and hairs  2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard	N			IPC			٧	<b>V</b>	<b>V</b>	4	2	1	8	Low Risk							
		R		Doffer ( Moving part hit the head )	Can cause head injury	Health hazard		Α		IPC			√	<b>√</b>		5	3	1	15	Medium Risk	1)Given awareness to employees to Doffer function, 2)Daily check the limit switch function and emergency switch function						
5	Fabric packing machine Operation	R		Loading & Unloading of fabric (Lifting of over weight)	Can Cause back and joint pain	Health hazard		Α		IPC			√	<b>~</b>		4	2	1	8	Low Risk							
		R		Loading of fabric by the help of Pin	1)Can cause joint pain 2)Can cause head injury	Health hazard	N			IPC			√			5	3	1	15	Medium Risk	Proper handling of fabric						
		R		Lighting Insufficient illumination	1) It cause eye sight problem 2) Moving parts can hit the human body	Health hazard	N			IPC			<b>V</b>			2	2	1	4	Low Risk							
		R		Workers continuously standing	Can cause of varicose veins	Ergonom ics Hazard / Health hazard	N			IPC			√	<b>√</b>		4	2	1	8	Low Risk							
		R		Lifting of fabric	Can Cause back and joint pain	Ergonom ics Hazard / Health hazard	N			IPC			<b>V</b>	<b>~</b>		4	2	1	8	Low Risk							
	Conveyor belt	R		Conviyor belt (1)Entanglement of workers clothes and hairs 2)Finger or hand struck by in rotating parts)	Can cause injury of human	Health hazard	Z			IPC			4	7		4	2	1	8	Low Risk							
6	rolling weight machine	R		Sensor problem or bypass the sensor	Can cause of injury of human and fabric materials damage and other surface materias are damage	Health hazard / Materials damage		Α		IPC			<b>V</b>	<b>V</b>		4	2	1	8	Low Risk							
		R		Lighting Insufficient illumination	It cause eye sight problem     Woving and rotating parts can hit the human body	Health hazard			E	IPC			<b>V</b>	<b>V</b>		3	2	1	6	Low Risk							
	G .	R		Dust from the machine cleaning and floor cleaning	Can cause respiratory problems	Health hazard	N			IPC	Ш		√		√	2	2	1	4	Low Risk							
7	Cleaning procss	R		Machine not proper cleaning	Can leads to fire	Fire hazard		A		IPC			√		<b>V</b>	4	4	1	16	High Risk	1)Given cleaning awareness and training to employees, 2)Provide fire equipment such as somke detector, fire extingusher.						



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### Ware House

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SLN o	TYPE OF OPERATION	HOUTINE	NON BOUTINE	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	z		×	CONCER NS LC/BC/ IPC	NOLUMNITON	RESTRUTION	ENGNEERING CONTROL	ADMINISTRATIVE CONTROL	PERSONAL PROTECTIVE EQUIPMENTS (PVE)	SERIE	SCALE	EXORR	RECORE	BKLIYE.	CONTROL MEASURE	SERIN	SOLL	ENORE	RESCORE	BKUYU	MENANES/CONTOL ALF
			NR	Electrical Shock.	Can cause pain and numbness.	Health hazard			K	LC			√		٧	3	2	1	6	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat						
1	Electric operation		NR	Fire due to short circuit.	Property damage.	Fire hazard			EC.	вс			~			3	2	1	6	Fligh Risk	To popedy maintain earth level, Lise proper insulated wiring with use the inhiber mat. Follow the panel board check list and frequently cleaning. Provide fire equipment such as somke denector, fire extinguisher.						
		R		Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard		^		IPC			√			4	2	1	8	Low Risk							
		R		Chargeing of electrical vehicle battery.	May cause of fatal accident.	Health hazard		^		IPC			V	V		3	2	1	6	Low Risk							
2	Insufficient illumination	R		Person are hit the materials and Falling objectives,	Can cause Eye strain and Head aches	Health hazard			Е	IPC			√	√		2	2	1	4	Low Risk							
		R		May hit the person or posperty(Rack).	Crush injury or property damage or both may occur				Е	вс			√	~	√	4	2	1	8	Low Risk							
3	Fork lift movement	R		Handle damage or handle locking problem	May cause of fatal	Health hazard				вс		$\perp$	√	7	√							Ш					
		R		problem Wheel damage Piston or hydrolic pressure	May cause of fatal accident And property damage				E	BC BC		_	7	V	4	4	1	4	16	High Risk	Use proper lifting equipments and operated by trained persons.						
$\vdash$		R R		Switching problem Beam pending					E E	BC BC	$\vdash$	$\dashv$	7 77	٧	7 77	$\dashv$	$\dashv$					$\vdash$					
4	Rack	R		Fitting damage Loose connection of polt and nut	May cause of fatal accident And property damage	Health hazard	П			BC BC	Н	$\dashv$	7	$\dashv$	7	4	2	2	16	High Risk	Periodically checking frequency increase	П					
		R		1)Entanglement of workers clothes and hairs 2)Finger or hand struck by in rotating parts	Can cause injury of human	Health hazard		^	R	IPC					4	4	2	1	8	Low Risk							
	Inspection machine	R		Lighting Insufficient illumination	1) It cause eye sight problem 2) Moving parts can bit the human body Eye stress, eye irritation and head aches.	Health hazard	z			IPC			~			2	2	1	4	Low Risk							
		R		Continuous exposure to light	Eye stress, eye irritation and head aches	Health hazard	2			вс			V	V		4	2	1	8	Low Risk							
5		R		Lifting of heavy fabric operation (Lifting machine	1) property damage 2) body parts caught into the lifting machine.	Health hazard		А		IPC			V			3	3	1	9	Low Risk							
		R		Cottapse) Workers contacting with moving parts of machinery Workers continuously standing Dust (cotton dust from the fabric) Loudou &	Can cause of injury of human	Health hazard Ergono mics	Z			IPC			~			4	2	1	8	Low Risk							
	Inspection machine	R		continuously standing	Can cause of varicose veins	Hazard	7		Ш	IPC	Ш	_	4	_	~	4	2	1	8	Low Risk		ш					$\vdash$
		R	⊢	(cotton dust from the fabric) Loading & Unloading of	Can cause respiratory problems	Health hazard	z		$\vdash$	IPC	Н	$\dashv$	√	$\dashv$	$\dashv$	3	2	1	6	Low Risk		Н	H				$\vdash$
		R		Loading & Unloading of fabric (Lifting of over weight)	Can Cause back and joint pain	Health hazard	z			IPC			٧	×		4	2	1	8	Low Risk							
		R		Lifting of fabric  Conviyor belt (1)Entanglement of workers clothes and hairs 2)Finger or hand strock by in	Can Cause back and joint pain  Can cause injury of human	Health hazard Health hazard	z			IPC			7	1	~	4	2	1	8	Low Risk							
6	Weight and Fabric roll traveling machine	R		sensor problem or bypass the sensor	Can cause of injury of human and fabric materials damage and other surface materias are damage	Health hazard / Materials damage		^		IPC		1	~	٧	~	4	2	1	8	Low Risk							
		R		Lighting Insufficient illumination	materias are damage  1) It cause eye sight problem  2) Moving parts can hit the human body	Health hazard		^		IPC	П	1	~			2	2	1	4	Low Risk							
		R		Hot surfaces of the machine	body  1)can cause increase the body temperature. 2) can cause Respiratory problem	Health hazard			R	IPC			٧	٧	~	3	2	1	6	Low Risk							
		R		Eye contact while during operation (Chemical handling)	Can Cause eye irritation	Health hazard		А		IPC			4	٧	7						Flush eyes with water and give awareness to swear goggles and face shelld mask.						
		R		Inhalation of chemical chemical Skinoratal (Chemical handling) Chemical use the Guillage of chemicals or foam chemicals or foam	Can cause Respiratory problem	Health hazard	z			IPC			~		~	5	2	2	20	Medium Risk	Given awareness to employees to wear mask_apron, safety gloves.						
		R		(Chemical handling)	Can cause skin allergy or skin irritation	Health hazard	×			IPC			٧	_	√							Ш					
7	CWR machine	R		machines (Spillage of chemicals or foam )	Can cause of falling of human	Health hazard	×			IPC			~		<b>V</b>						secondary containor has been provided.						
		R		leakage of steam (Steam line)	can cause burn injury	Health hazard			R	LC /BC			٧	v	٧	3	2	1	6	Medium Risk	<ol> <li>provide insulation of the steam line. 2)Regular maintance and regular inspection has been done.</li> <li>Provide awarness about steam and its effect.</li> </ol>						
		R		Splashing in the eyes while washing chemical fabric or materials	Can cause eye injury,	Health hazard		Λ		IPC			٧		√	4	2	1	8	Low Risk		Ш					
		R		Trolly may hit the person or porperty.	Crush injury or property damage or both may occur Can cuase body	Health hazard		^		вс	Ш		<b>V</b>			4	2	1	8	Low Risk							
$\vdash$		R		Pushing and pulling of trolly. Dust from the	and joint pain Can cause	hazard	z		$\vdash$	IPC	$\square$	-	٧.	-		3	2	1	6	Low Risk		$\Box$					
s	Cleaning procss	R	_	Dust from the machine cleaning and floor cleaning	problems	Health hazard	z		$\square$	IPC	Ш	4	٧	$\dashv$	٧	2	2	1	4	Low Risk	1)Given cleaning awareness and training		L				
		R		Machine not proper cleaning	can leads to fire	Pire hazard		Λ		IPC			√		√	4	1	4	16	High Risk	<ol> <li>Given cleaning awareness and training to employees,</li> <li>Provide fire equipment such as somke detector, fire extingusher.</li> </ol>						

### Ware House

The proposed action for the hazard electrical hazard and physical hazard, fork lift and trolley movement, cleaning process in this operation maybe related to ware house. The fork lift due to create health hazard. Its rotating 360\* stacker and fork lift any materials or human or rack parts maybe kit the person or fatal accident create the fork lift, so will be followed in ware house safety procedure, pins are insert and remove by the help of stacker machine, the stacker machine charging place separate place

Injury from the fork lift driver or other person and fork lift handling of maybe due to handling activity .to avoid those all process fully knowledge and trained person and handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity electrical cables and equipment's. Locate rack tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of fork lift machine tools in properly in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as PPE (The safety jacket or safety apron, safety helmet, safety goggle, safety shoe) .Respiratory Hazards: Dust generated in fabric and atmospare air includes fork lift movements, which are present ware house area.



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### Boiler

The proposed action for the Hazards in boiler and thermo back is to implement Position yourself so that you are not hit by objects moving down the conveyor. Ensure that you can see the conveyor system when you are at the operating controls. Ensure that guards are in place for all moving parts of the drive system and in all zones where hazards such as in-running friction burns or boiler ire process entry are present (includes above, sides, and below the conveyor). Guard all pinch points between the conveyor system and fixed objects. Locate guardrails around low level conveyors and areas where conveyors pass through the floor/ceiling. Locate emergency stop cut-off switches near the operator and along the length of the conveyor at approximately 30 metres (100 feet) apart (or closer). Ground belts on belt conveyors to prevent static build-up.

The proposed action for the Hazards in wood and coal storage is to implement by conducting pressure test for the steam and oil pipeline and automated and manual valves are strategically placed along the pipeline route to enable the pipeline to shut down immediately and sections can be isolated quickly as and when required.

The proposed action for the hazard in boiler and thermo back machine is to hot surface area, wood and coal handling, hot oil chamber, steam line ,electrical hazard and trolley movement ,cleaning process in this operation maybe related to boiler and thermo back machine. This machine due to create health .Its rotating parts maybe Entanglement of workers clothes and hairs due to rotating part, Finger or hand struck by in rotating parts .The wood due to shifting in fabric storage area by the help of trolley,

Injury from the steam line and oil pipe line, maybe due to handling activity .to avoid those insulate and cover the steam and oil pipe line handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of machine tools in properly in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as PPE (The heat resistive glove and leather apron, goggle and safety shoe ,safety helmet, dust mask) .Respiratory Hazards: Dust generated in boiler machines includes dusts, which are present boiler and thermo back machine area.

L ave									r											Irana Na	_		_	ELERN CO	1./20	
-11	Fage 1 of 4			Occupant	and Health & Safety	*			-			EA)	-							Barry Prins						
-			~	Name of BOOKS, ACM				Gregor, El						*	~~	term the	-									
***		-	MANAGE		EVALUATION OF MAKE	MODE OF	~	-	-	rugger)	NIMANII	CHERTS IN	DONNERSE	MINAL BURGE	uno.	UNERCO	1000	8038	иги		nos son	tagares ca	DXII	BUOM	Thrist	BYGGGERA
			~=	Education Shareh.	Case course pain and numbers.	Edward .		П		***		-	Т	~	-	-		-		To properly realization earth level, Use peopler translated wiring with combing, and the reliber man.		П	П	П		
1.			NK.	Fire above to advant circum.	Programy damage.	Fire		П	ĸ	вс		~	Т	Т						Friding the panel broad check for and fingunity change. Percite for opposite such a number detector, fire ontogenter.		П	$\neg$			
Ι.	Facility injurialists	-		Lorent connection of Switching operation	Can cause of injury of features and pate.	Privately Prevent		^	$\neg$	H=0		-	$\top$	$\top$	-			**	Nacional Mark	Provide proper orapicyce maining on minds burnifung procedure		П	$\neg$	$\neg$		
		-		Summer produkts or hypomethe summer	Can cause of injury of burness and fabric materials durings	Pricedelle Precent		^	$\neg$	me:		7	~	Т	-	-		14	Name of Street	directs.		П				
2	Locating and anticating of woman	*		Litting of over weight	Can cases back and joint pain	Privately. Prevent	~	П	$\neg$	HNC:		-	$^{-}$	$\top$	-	-	2		Low Hab			П	$\neg$	$\neg$		
		,		Heat crowings	SE ANDRES	-		^		***		-	~	~	-	*	*	-	Name and Address of the Owner, where the Owner, which is	13-An authorized person should handle the horize, continuous reconstructing of temperature and temperature first setting 23-American to wear site PPES (approximation gloves & Claim Read)						
		-		High processes	Com course belowing			^		mec.		-	~	~	-	-	-	200	Newtonero Mark	1). Not confined out of pressure abounded beautiful of the booking confined out of Personal gauge and others also suffery realized realized.						
		,		Corey member can ment mane and eyes wrom the worker expenses to design posts would no while the broker marchine is according constitution.	tend representation of the second		ı			##C		, ,	~			,										
1	Sparanian Stanform	ĸ		Flore Oly ands	Porn inputy that to host thy such.	P foodst-		^	$\rightarrow$	HNC:	-	- 4						-	Mark	Training great to workers to wear PTV:		$\vdash$	$\rightarrow$	$\rightarrow$		
1		-		Leakage of mean from pipulme	Buen injury may occur due to storen busings on human heady	Ethoophib Processed		Ш	т.	BeC .		~	~	~	-			**	** mink	Introduction that pipeline and awareness given to write pipel when working near steam flows		Ш		_		
		-		Staffery valve due to no represe in high procuses	Can heads to explosion of machine					rec .			~	~	-	-	-	200		UpCateurs prevarious to the employees to valve harding details.  Associated details and greater than safe weeking prevarious.						
		-		Bhowdown valve ( Auto / Maread function) and function	Com brada to emphasism of machine				т.	вс		-	~	~	-	-	-	14		Administration of the completion of the completi						
		-		Presente value due to no operate in high promote (ARCASM machine rody)	Care leads to explosion of markets					Bec:		-	~	~	-	-	-	146		tends on these the blooders and pressure suit of a second						
	Poster Martin	-		Bedler etémacy	falling of charactery made prosperty durings and burnan durals		~			nec.		-	~		-	-	-						T			
		-		Controper bolt loading. fulling of Coal materials	Option of the control	i tombit		^		B4C		7	~		-	*		-	Ran							
		-		Her surfaces of the muchine	These cases increase the landy temperature. 2) can come Benjaminory problem.	P Goodste Secretari		^		me:		-					-	***	Newsteam Rank			Ш		$\perp$		
1		-		Theoreuspee: odf ference 136 orderings off feet cell feroms paperitus; 25/methage of cell	Can come shapery and come body sepay.	P familie		^	-	100			-	-		-			Name of Street	Regular imprecion and proper maintenance was done regularly		$\vdash$	_	-		
		-		Heat onergy	Can cause hour stress and skin peobless	12000		^	1	IIV:		-	~	~					New Marie	1). An authorized person should handle the person of the p		П	T	T		
-	Thermopae heater	-	П	High possess	Can come blooding architer is harmful an	Pfundels baccard		~	╛			-	~	~	-	-			Name of Street	13-An authorized person doubt bendle the besker, continuous monthstage of Pressure gauge and church the safety safe value		П	╛	$\neg$		
			П	Conveyer both Londing falling of Crud manufals	TyCon come bule distringe, 2)thequivalery positions due to coal dust	E familiele. Pressured		^	$\neg$	BeC:		~	-	Τ	-			-	Low Rack			П	一	$\neg$		
		-	T	Flor surfaces of the machine	TyCan cause increase the brody torquestate. 25 Can cause Respiratory problem		Г	^	$\exists$	H=C1	T	-	-	~	-			-				П	T	T		
Г		-			If we must coul for long posteri, as that their temperature will increase and road temperature much 200 to 200°c for will			П	ĸ	нс		-	~	v	Γ	П	П					П				
	Could and would stronge area	ĸ		ŀ	If we state and for land green, as the same green, as the same green, as to come and could be same as to could be same as to could gree consumers.  If we same weak for the temperature of the land temperature of the land temperature of the land temperature of the land temperature of the land temperature of the land temperature of the land te	Pin /				вс		,	~	~	*		•	**		1) We are not assuing cool and wood for long stree and longs under most shoot in exceld disco- sive and longs under most shoot in exceld disco- 20/vised to provide Fire hydrone or spetide system.						
1		-		Industrian of coal dass	Respiratory problem			^		1000		~		~		-		**	~******	Training given to weathers to wond from much and also water was sprayed together interval to avoid date.  Therewise project maining to weathers to wond the project of the project of the project of the Beauty project of the project of the project of the project of the project of the project of the project of the project of the project of the project of the project		$\Box$	I			
1		-		femore have centered the wood stronge area	Com, research impary out benedy our decasts.	P. Constant		^		nec :		-		~		-		.,	Addison. Mark	the Parks (constrout, based glasses, before graph).		П				
		-		Wood and coal falling down,	Discount inputy of European demagn.	Plantin. Paraeri		Ш		1.40		-		~		-		-				Ш				
		-		Eye scenario while during representation Imbalanton of observated	Can Casse eye instance Can come Residence	Providebility of the second of		^	-	HNC:		- 7					ıΠ					$\Box$	-I	-		
1		-		Ship common	Can come Requestory problem Can come skin allengy or skin initiation	Phonesis Phonesis Percent		^	$\rightarrow$	nec:	-1	- 1			-1					Cityen or areas to coupling on the war the PPE's. Authorized person are only hardle the	$\vdash$	$\vdash \vdash$	$\dashv$	$\rightarrow$		$\vdash$
1 -	Characted Handling	-	$\vdash$				~	$\vdash$	$\dashv$	iisc:	$\vdash$	- 1	+	+	١.	-	-	14	~	Given are arothers us compliance us wear eller PPEPA. Anotheritand persons are conly barelle du- charation, and allowed and open we are one the eye weath station of barely and open we are one the eye weath station and alarmer enabless. All the charation was place only according.	$\vdash$	$\vdash$	$\dashv$	$\rightarrow$		
		-		Persicular finance or characted one the machines (hydroge of characteds or finance)	Can come of falling of	E-market	~	Ш	4	1000		-	~	~	$\perp$	Ц	Ц					Ц	4	4		
-	Testesistan operantum	-		Distance of the last pipe live of the property	Fatal or injury may occur when full from height.			^		ne:		-				3	,			3) Phonoido pumpor woulding planforms as do she work. 2) Awarenium was given to workers to work 2) Awarenium was given to worker to work and factoric work above 2 monter height and factoric.						
-	Enghance of Bulker	*		Secure and her water treath to the land	DCan case: Final and busing bejory.	Promote C			as.	BeC.		~					ΙĪ					$\Box$				
-	Emphasion of Thermopae heater	*		CHI and hor oil reach to the land	Office come Forel and becoming topony. Office office to the band martines. Secon Come probating the size			$\Box$	т.	BeC:		7				· I	-	25				Ш		$\perp$		
tele	Healter elaminey	-		Over min the atmosphere air  Dues from the machine cleaning and three cleaning			-	^	$\rightarrow$	mc mc	-1	7		7		-		_	Low Reb			$\vdash$	-	$\rightarrow$		-
				Elect from the marking cleaning and three chaning  Marking and proper cleaning	Can beat to fire	Pine.	~		$\dashv$	me:	$\dashv$		_	1	-		$\rightarrow$	14		SCOven channing awareness and training to		$\vdash$	$\dashv$	+		$\vdash$
	Charley proces	-					$\vdash$	^	$\dashv$		$\vdash$		+	Ť	1	1	-	_		TJCitron channing awareness and training to employees; Tjerreness are employees to such as service described, the entrajector	$\vdash$	$\vdash$	$\dashv$	$\dashv$		$\overline{}$
L		_	Ш	Color-sh occupied in the period and cable	I)Can leads to fire 2)Property damage.	Pine	Ш	<u> </u>		nec:	Ш		_	1	L.			12		Impaces the cleaning frequency	L	Ш				$\Box$



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### ETP & RO PLANT

Alb	IENAKA MILLS PRIVATE LIMI (Truth Distan)	TEDU	NIT - I																		Feeture No.				100/	TF/08	
L	(1144)				Occupational H	lealth & Safe	ity Ha	zard I	dennifi	cation i	& Risk	Anne	**TIKE	it (HII	RA) Št	udy					Bru. Nie				•	•	
	Page 1 of 2																				Brn. Date				16,0	3822	
Depart	ETP		Arra/lia	m ETP				Dept. 0	Dave Nime						Revn N	in/Re-	Dem										
		OPER	ATRON				α	ONDITI	ON	П	,	CURRE	NT CO	NTOLS				Pre	**				_		a risk		
SE_NO	TYPE OF OPERATION	ROTTNE	NONBOURNE	IDENTIFY THE RISK	EVALUATION OF RISK	MODE OF BINE	×			CONC ERNS LC/R C/ ERC	HAMINATION	NUMBER	ENGENEENS CONTROL	ADMINISTRATIVE CONTING	PERSONAL PROTECTIVE EQUIPMENTS (PPS)	SEVERETY	UKBBROOD	BX NORTH	3800 308	SEN LIVE	CONTROL MEANURE	SCALE SCALE	LIKELINOOD	EXPORTE	MEN NOOR	MAX LIVE	EMAIN/OONTO.
Г			NR	Electrical Shock.	Can cause pain and numbross.	Health hazard			E	ıc			٧		٧	3	2	1	6	High Rok	To poperly maintain earth level, Use proper insulated witing with earthing, use the rubber mat						
	Electric operation		NR	Fire due to short circuit.	Property damage.	Fire hazard			Е	вс			٧			3	2	1	6	High Role	Follow the purel board check list and frequently cleaning Provide fire equipment such as somite detector, fire extinguisher.						
		R		Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard		А		IPC			4			4	2	1	8	Low Risk							
L		R		Sensor problem or bypass the sensor	Can cause of injury of human and fabric materials damage	Health hazard		A		IPC			٧	٧		4	2	1	8	Low Risk							
		R		Eye contact while during operation	Can Cause eye irritation	Health hazard		A		вс			1	٧	٧							L		L			
,	O-mind N - T	R		Inhalation of chemical	Can cause Respiratory problem Can cause skin allergy or	Health hazard Health	N	A		IIC			4	4	4					Medium	Given awareness to employees to wear the PPE's. Authorised person are only handle the chemical.			$\vdash$	+		
2	Chemical Handling	R		Skin contact  Perticular chemical use the machines	skin initation  Can cause of falling of	hazard Health	-	$\vdash$		IPC	$\dashv$	$\dashv$	_		H	5	2	2	20	Risk	Any imutation of body and eyes we are use the eye wash station and shower station. All the chemical we are place only secondary container.	L	$\vdash$	$\vdash$	+		-
L		R		(Spillage of chemicals or foam)	human	hazard	N	A		IPC			٧	٧	٧								L	L	╀		_
3	Filter operation	R		Promute vessel	Can leads to explosion of pressure vessel.	Health hazard and	L		Е	вс			٧	٧	٧	5	4	1	20	High Rose	1)Pressure gauge (or) pressure display and should have safety valve and/or bursting disc. 2)Pressure should not greater than safe working pressure.		L	L	L		
4	ETP tank cleaning	R		Respiratory Problem and tisk of falling (seet floor & slippery surface)	Can cause health problem	Health hazard		A		IPC			4	4	٧	5	2	2	20	Medium Risk	Advised to use the confined space S.O.P properly and advised to use proper pps/s						
5	Ro water tank cleaning	R		Falling hazard (uver floor & slippery surface)	Can cause injury of human	Health hazard	N			IPC			٧		٧	5	2	2	20	Medium Risk	services to see lander blees						
6	Waste water collection tank	R		l)Spillage of chemical waste water to generate the contaminate the air & land	Can cause respiratory problem     Thurst contamination	Health hazard /Environm ental hazard	×			IPC			4		٧	5	3	1	15	Medium Risk	1). Awareness has so given the operator to wear respiratory mask and pipe lines are properly connected with the task 2). Avoid over flow of the waste chemicals						
,	Waste disposal tank	R		Studge waste improper of collection & handling	1)Can cause health problem 2)Can cause contamination of land	Health hazard / Environme neal hazard			Е	вс			٧	٧	٧	5	3	1	15	Medium Risk	1) Awareness has to be given to collect the waste properly and dispose it to the Authorized person, and wear suitable pper's: 20:TP wante should be in seprate place and entry should be extricted.						
		R		Chemical contant exceed above the permissible limit	Can cause contamination of water	Environme neal hazard	N			IPC			٧	٧	٧	5	3	1	15	Medium Risk	To check the treated water as per TNPCB Requirements						
	Mixing channel (Water treatment of chemicals adding)	R		I)Chemical spilling on human body 2)Chemical spillage make slippery floor 3)Chance to contaminate sir	D'Can cause skin and eye irritation     SyCan cause risk of falling     SyCan cause texpiratory problem	Environme neal hazard		A		IPC			٧	٧	٧	,	2	1	30	Low Rick							
		R		Workers continuously standing	Can cause of varieous voices	Engonomic • Hazard	N			пс			٧	4	٧	4	2	1	*	Low Risk				L			
<u> </u>		R		Worker working in top side	Can cause falling objects	Health hazard	_	$\vdash$	Е	ıc	$\dashv$	_	4	٧	٧	4	2	1	8	Low Risk		_	_	$\vdash$	+	_	-
		R		4th ro water rejection water convert to the stone process in evaprator	Can cause respiratory problem     Earth contamination	Health hazard / Environme ntal hazard		A		ıc			4	٧	٧	4	2	1	*	Low Risk							
9	Evapranor	R		Hor surfaces of the machine	D'Can cause increase the body temperature.     Can cause Respiratory problem	Health hazard		A		IPC			4	4	٧	3	2	1	6	Low Risk							
		R		Leakage of steam	Can cause burn injury	Health hazard	Γ		Е	IPC	$\neg$		٧	4	٧	3	2	1	6	Low Risk			Γ	П	Т		
10	Technician operation	R.		Diffusionance for pipe line & has pipe line, 20-line work (solding penesse) 20-line shanger, 40-linear-drive problem, 50-linear-drive problem, 50-linear-penels handling 70-linear-penels handling 70-linear-penels handling 50-linear-penels handling	Final or injury may occur when fall from height.	Health hazard							٧	٧	٧	5	2	2	20	High Risk	Drootde peoper working plateions to do the work.     Assumes was given to workers to wear eafery bid and beliner when work above 2 meter height and below the tank.						

### ETP and RO Plant

The proposed action for the hazard sludge waste collection ,chemical handling, collection of waste water tank, processing tank ,electrical hazard and trolley movement ,cleaning process in this operation maybe related to Etp and Ro plant. This ETP waste due to create health hazard .Its rotating drum parts maybe in clothes and hairs Finger or hand struck by in rotating parts .The sludge waste proper segregation and sludge waste are compressed machine. this machine will be great the air this air affect the human and air pollution.

Injury from the waste water and waste disposal handling of maybe due to handling activity .to avoid those all process fully knowledge and trained person and handling procedure given to the employees some materials handling only authorized person only should remain within restricted zone under supervision, with particular attention paid to proximity electrical cables and equipment's. Locate machine tools at a safe distance from other work areas and from walkways. Conduct regular inspection and repair of machine tools in properly in particular protective shield and safety devices/ equipment's. Use appropriate PPE (Personal Protective Equipment's) such as PPE (The pvc apron, glove, safety helmet, gum boot, goggle ) .Respiratory Hazards: Dust generated in ETP plant includes sludge waste, which are present ETP and RO plant machine area.



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### Power House

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L	LIMITED UNIT - (Textile Division)	)			Occupational Hea	alth & Safe	ety Hazar	rd Ide	ntification	& Ri	sk Ass	sessn	nent (	HIR	A) Stu	ıdy				Rev. No				1	0	
	Page 1 of 2																			Rev. Date				15.11	.2022	
Depa	rtment: POWER HOU			/line: POWER HOUS	Ε		Dep	st. Doc	No.:					Revn	No./I	Revn I	Date:									
SL. NO	TYPE OF OPERATION	ROUTINE	NON ROUTINE NO	IDENTIFY THE RISK	EVALUVATION OF RISK	MODE OF RISK	N A	E	CONCER NS LC/BC/ IPC	ELIMINATION	RREN		VE CONTROL		SEVERITY SCALE	LIKELIHOOD SCALE	EXPOSUR	RISK SCORE Neis	RISK LEVEL	CONTROL MEASURE	SEVERITY	LIKELIHOOD	_	RISK SCORE	RISK LEVEL	REMARKS/CONTOL REF
П		Г	NR	Electrical Shock.	Can cause pain and numbness.	Health hazard		Е	LC		0,	٧		٧	3	2	1	6	High Risk	To poperly maintain earth level, Use proper insulated wiring with earthing, use the rubber mat				П		
1	Electric operation	R		Fire due to short circuit.	Property damage.	Fire hazard	N		IPC				٧	4	3	2	1	6	High Risk	use the rubber mat  Follow the panel board check list and frequently cleaning Provide fire equipment such as somke detector, fire extingusher.						
			NR	Loose connection of Switching operation	Can cause of injury of human and pain.	Health hazard		E	ВС			٧			4	2	1	8	Low Risk							
2	Panel board operation	R		1)Indication lamp not function, 2)Handle working condition 3)Meter not function, 4)Problem of earth leakage 5)Relay function	May cause of fatal accident And property damage	Health hazard and fire hazard		E	ВС			٧	٧	٧	5	2	2	20	High Risk	1)Awamess to be given proper handling ,ase ppe's and stand on nibber mat 5,00e proper insulated wining with earthing and install proper circuit bracker 3)Authorized person only operate the panel						
3	UBS battery	R		1)Terminal short circuit, 2)Low level of water 3)Terminal corrosion 4)Battery terminal improper connection and explosion of battery	May cause of fatal accident And property damage	Health hazard and Fire hazard		Е	BC			4	٧	٧	5	3	1	15	High Risk	Nwamess to be given proper handling of battery and authorized person only maintain;     2)Regular check list follow up						
4	Transformer	R		1)Magnetic flux 2)Increase in temperature 3)Not working Meter, 4)Not working circuit, 3)Not maintain oil level, 6)Service of transformer or maintace work failure of transformer.	1)can affect electronic material 2)chances of blasting 3)live lines can harm ful 4)Proper earthing for transformer discharging	Health hazard and Fire Hazard		Е	LC			*	4	4	5	2	2	20	High Risk	1). Awareness to avoid electronic material 2). Required to maintain the level of the cooling oil 3). Provide harricade for transformer area, langer sign board display 4). Awareness to be given for proper handling ,use ppu's and to use rubber max						
5	Genset	R		1)High noise 2)Vibration 3)Smoke 4)Spillage of diesal 5)Check the diesal tank leakage 5)Maintain ratiator water level 6)Service of generator or maintace work ,failure of Generator.	1)can cause of earing loss 2)can cause numdness 3)can cause respiratory problem 4)may cause fire accident and property damage or fatal accident 5)Power supply off and not in auto mode,	Health hazard,Fire Hazard and Environm ental Hazard		E	LC			4	٧	٧	5	3	1	15	High Rok	1)Provide aquastic and ear muff if the noise level goes beyond 80 db. 2)Install genset with proper bed to avoid vibration grev centive maintenance chart is required 3)Awareness to wast proper requiremory and check emission 3)Awareness to handling diesal and follow the filling procedure, storage container should be in seprate place with secondary constainer,to avoid over flow provide level indicater on storage task, 5) Awareness to be given for proper handling ,use ppe's and nobber muf if it is necessary						
6	Electrical waste	R		If it is not disposed properly it will cause contamination to the land	Earth contamination	Environm ental Hazard	А		LC			٧	٧	4	4	2	1	8	Medium Risk	Awareness has to be given to collect the waste properly and dispose it to the Authorized person						
7	Compressor	R		1)High noice 2)Vberation 3Rotating part 4)Air receiver tank make high pressure 5)Drain valve 6)Safety valve	1)can cause of earing loss 2)can cause numbness 3)can harmful for human body 4)can create blasting accident	Health hazard		Е	LC			4	4	٧	5	4	1	20	High Risk	Diprovide squaste and car muff give to electrican the noice above 80 db.  2)compressor install with proper bed to avoid vibration specerative maintanaince char is require 3)Proper pully guard to be provided 3)Proper pully guard to be provided total.  Increase the proper share and pressure on the tal.  Varieties to be given proper handling use ppe's and stand on rabber mar  4) separated from the production area with required harvegation and danger symbols.						
8	lift operation	R		1)Damaged rope and excessive weight 2)electrical fire	1)can cause risk of falling injury 2)can cause property damage and human loss	Health Hazard and Fire Hazard		E	ВС			4	٧	4	5	2		0	High Risk	1)Properly maintained and shall be thoroughly examined by competent person atleast once in every period of six month, allow only limited weight . lift should be in ground level at the time of maintenance.						
9	Drilling machine	R		1)Improper Handling of machine 2)Improper material Fixing 3)Damage or Broken condition (up and down) Handle 4)Broken condition of bottom plate 5)Improber connection of drill bit	1)can cause risk of falling injury 2)can cause property damage and human loss	Health hazard	А		IPC			4	٧	٧	5	4	1	20	Medium Risk	Awarness to be given proper drilling machine handling, and wear the PPE.						
10	Cutting machine	R		1)Improper Handling of machine 2)Improper material Fixing 3)Darmage or Broken condition (up and down) Handle 4)Improber connection of Cutting tools	1)can cause risk of falling injury 2)Can cause injury of hand 3)Can cause of earing loss 4)Can cause property damage and human loss	Health hazard	А		IPC			4	٧	٧	5	4	1	20	Medium Risk	Awarness to be given proper cutting muchine handling, and wear the PPE.						
11	Welding machine	R		1)Improper wire connection 2)Improper earth wire and rod connection 3)Damage the welding handle 4)Not use welding goggles 5)Damage the switching	1)Can cause of electric shock 2)Can cause of eye iritattion	Health hazard		E	IPC			4	٧	٧	5	3	1	15	Medium Risk	Authorized person only allowed, proper covered in welding area, Advised to use the confined space S.O.P properly and advised to use proper ppe's						
12	Formation of Electrical waste	R		1) Generation of E.waste 2) Generation of used battrics 3) Usage of diesel	1) Can Cause polluting the Land	Environm ental hazard	А		LC			٧	٧	٧	5	3	1	15	Medium Risk	if it is not disposed /maintained properly it will cause contamination to the land, should be disposed off properly through authorized recycler						



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Power house

Proper management of the risks associated with aboveground storage tanks is essential. Everyone who works on or around the equipment or the fuel storage locations should be trained to identify and eliminate risks. They should also know how to conduct routine inspections of fuel storage containers, dispense fuel and operate pump shutoffs properly.

The generator machine run at the generate the noise so wear the ear muff, generator is automatically run by the power cut time, generator handle good knowledge electrical person only allowed, the transformer is high voltage so any body circuit open or close wear the ppe and good handling electrical person only applicable. The transformer oil or other problem we are atten this person wear the ppe and proper earthing for transformer, panel board handling or breaker handling and really circuit person only knowledge electrical person only allowed, the E-waste are disposed in only authorized person, all the machine and panel board connect proper double earthing

### Key Performance Indicator

### KPI table

S.NO	KPI	KPI Details	Requirements	Target
1	Legal documents	Fire safety license	Cross verification process by one year	100%
2	Test certificate (Boiler,Dying,,ETP,Forklift operator)	Medical checkup ( Cancer & DNA test,Lung test,Eye test )	Cross verification process by 6month	100%
3	License Holder	Electrician, fork lift operator, bus drivers	Cross verification process by 6month	100%
4	Transportation vehicles	Ensure safety condition and fire extinguisher	All the workers using transportation vehicles	100%
5	New employees	Fire & Safety details and E&D point details,	As company requirments	100%
6	Employee special training	Fire Fighting trainer, First aid trainer,	External program conducting by one year	100%
7	Fire safety trainer	10% to 15% of the total employee in the company should be in fire safety training	Internal program conducting by six month	100%
8	First aid trainer	2% to 5% of the total employee in the company should be in fire safety training	Internal program conducting by six month	100%
9	PPE training	PPES using methods	Internal training conducting by one month	100%
10	Chemical training	Chemical handling and Spill kid training	Internal training conducting by one month	100%
11	Health & safety committee meeting	AS concerned persons only	Internal committee meeting by two month	100%
12	Chemical details	List of chemical, All chemicals MSDS and SDS, chemical pictogram inculding transported sub 7chemical box,	Cross verification process by one month	100%
13	Drinking point	Is it 8compatible with t9he working place (falling hazard)	Cross verification process by one weekly	100%
14	Conduct a Risk assessment once in 6 months	New layout changes, Process changes	Maintain post risk score below 10 points	100%
15	Incident details	small injury - , major - , death - ,	Maintain the record in department and nurse	100%
16	Accident details	minor ,major, death.	Maintain the record in department and nurse	100%



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17	Fire safety equipments	Fire pump room ,fire hydrant,fire	Good working condition	100%
		extinguisher,Fire alarm switch.	at any time	
18	PPES	Maintain minimum stock level of	Above 20-25% from the	100%
		concerned department	required stock	
18.1	PPES	Monitoring of PPEs condition	Cross verification	100%
			process by one month	
19	Risky machine	Ensure the safe condition of risky	Preventive Maintenance	100%
		machine ( Equipments details :- Lift,fork	schedule & routine	
		lift , generator ,compresssor,dying		
		machine ,stenter machine, chain pully,		
		sensor , door safety limit		
		switch,emergency switch)		

# Table – KPI Report schedule

S.N	Document Name	n		æ	ı	æ	n		-	45	o	0	4)	Remarks
О		Jan	Fe 5	Ma r	Apr il	Ma	Jun	Jul	Au	Se p	O <sub>c</sub>	S >	De	
1	Eyewash station inspection report	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
		X	X	X	X	X	X	X	X	X	X	X	X	
	Lifting equipment's (Forklift and													
2	Stacker) should be	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
	maintain	X	X	X	X	X	X	X	X	X	X	X	X	
3	Drinking point	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
		X	X	X	X	X	X	X	X	X	X	X	X	
	List of risky machines &													
4	Inspection record	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
	( Sensors, Emergency stop													
	button, Door sensors, Lift chain													
	pulley, Forklift, Pallet truck &													
	Lift)													
5	Environmental impact check list	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
6	Gentral health and Safety awareness report	XX	ХХ	XX	хх	XX	XX	XX	ХХ	XX	XX	XX	XX	
7	Chamical handling and spillage	XX	ХX	XX	ХХ	XX	XX	XX	ХХ	XX	XX	XX	XX	
	kit tarining													
8	Electrical panel board inspection	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
	report													
9	Boiler inspection report	XX	ХХ	XX	ХХ	XX	XX	XX	XX	XX	XX	XX	XX	
10	PPE issue & Stock record	XX	ХХ	XX	ХХ	XX	XX	XX	XX	XX	XX	XX	XX	
11	PPE verification record (	XX	ХХ	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
	inspection of PPEs													
	condition)													
12	Fire Extinguisher inspection	XX	ХХ	XX	XX	XX	XX	XX	ХХ	XX	XX	XX	XX	
	report													
13	Emergency light Inspection report	XX	ХХ	XX	ХХ	XX	XX	XX	XX	XX	XX	XX	XX	
14	Fire alarm Inspection report	XX	ХХ	XX	ХХ	XX	XX	XX	ХХ	XX	XX	XX	XX	
15	Smoke detector Inspection report	XX	ХХ	XX	ХХ	XX	XX	XX	ХХ	XX	XX	XX	XX	



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16	Incident and accident, near missx: report		xx		xx	XX	xx	XX	xx	XX	xx	xx	If any reportable accidents occur need to update and submit to Inspector of factories within 48 Hours
17	ERT training record	->		-X-		-X-		-X-		-X-		-X-	
18	Fire drill	->	<b>(</b> -	-X-									
19	Risk Assessment					ü						ü	Updatting If Layout changes or New machine installatio n
20	Medical checkup for following operator (Boiler,Dying,,ETP,Forkli ft operator)					ü						ü	
21	First aid trainer					ü						ü	
22	Firefighting training					ü						ü	
23	Test certificate (Boiler,Dyeing,ETP,Forklift operator)					ü						ü	
24	License Holder					ü						ü	
25	Legal documents	üü											
26	Transportation vehicles	üü											

### Table – KPI Report schedule

xxxx	Weekly updating
xxx	15days updating
xx	Monthly updating
-X-	Two months updating
Ü	once in 6 month
üü	once in year



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### Table -Daily walk on field observe

WALK	ON FIELD OBSEI	RVE				
Respons	ible person:	Inspection Date:		Next D	ue Date:	
SL.NO	DETAILS	CHECKING DETAILS	OK	NOT OK	NOT APPLICABLE	IF FOUND ANY DEVIATION ( UPDATE IN DECATHLON FORMAT)
1	First aid box	Clearly visible				
		Easily accessible				
		Medicine available				
2	Fire	Clearly visible				
	extinguisher	Easily accessible				
		Available operating instruction				
3	Fire alarm	Clearly visible				
	switch	Easily accessible				
		Available operating instruction				
4	Smoke sensor	Clearly visible				
	-	Check the function				
	First aid and	Available of trainer person list				
5	Fire fighter list	Check the training skill				
6	PPE Box	Clearly visible				
	-	Easily accessible				
	-	PPE available				
	-	Condition of PPE				
7	Drinking point	Stand condition				
		Spillage of water				
		Condition of water				
	-	Condition of Water can				
8	Exit and	Sign board clearly Visible				
	emergency exit	No blockage of exit and emg exit door	t			
9	Emergency exit light	Sign is clearly visible Two light available				
10	Passage way	Clearly visible Easy to evacuate No block any objects				
11	Evacuation	Clearly visible				
	plan	Mention machine and fire equipment's details				
		Check if any update				
12	Evacuation Details	Available of Emergency evacuation procedure				
		Available of Emergency response team chart				
13	Evacuation	Clearly visible				



	routs Board	Check the route direction				
	Touts Board					
14	A	Check the board Damages				
14	Assembly point	Worker knowledge of Assembly				
		point				
		Assembly point location and				
1.7	DDE	number				
15	PPE	PPE instruction Board				
		Consult dpt wear the PPE's				
1.6	GI I	Identify the damage				
16	Sharp tool	Tied the sharp tools,				
	( Trimmer or	Check the condition Trimmer				
	scissor)	or scissor,				
		Verify the accountability check				
17	Г	list				
17	Emergency	Check the condition of				
	Switch	Emergency switch  Worker knowledge of				
		emergency switch  Operator which condition				
		Operator which condition Operate emergency switch				
10	Noodle around	Condition of Needle guard and				
18	Needle guard	eye guards				
		Identify the damage				
		Worker use the Needle & eye				
		guard				
		Condition of pulley guard				
		Identify the damage				
		Maintain cleaning of motor				
		Wantam creaming of motor				
19	Pulley Guard					
20	Motor coupling	Condition of guard				
20	guard	Identify the damage				
21	SSB panel	No damage Switches				
	board	No dust				
		Cleaning of panel board				
		condition				
		Indication lamp condition				
		Warning sign				
22	LDB Panel	No damage Switches				
	board	No dust				
		Cleaning of panel board				
		condition				
		Any Dummy apply the gap				
		Warning sign				
23	Machine Panel	No damage Switches and	1			
	board	indicating lamp, display				
		No dust				
		Cleaned condition of panel board				
24	Rubber mat	Available of electrical rubber mat				
1	I L			_1		





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# Table – 23 Monthly walk on field observe

	Menaka Mills Pvt Ltd	•				
WAL	K ON FIELD OBSERV	/E				
Respo	onsible person:	Inspection Date: Next Due D	ate:			
SL.N	IO DETAILS	CHECKING DETAILS	ОК	NOT OK	NOT APPLICABLE	IF FOUND ANY DEVIATION ( UPDATE IN DECATHLON FORMAT)
		LEGAL AUTHORIZATION AND PE	RIDI	CAL C	HECK	•
		Loose wire,				
		Burning wire,				
		Multi looping,				
		Damage wire,				
		Improper jointing wire,				
1		Identify Melting & over heating.				
	Elecal	Danger Symbol,				
2	warning Sign	HV / LT mention.				
		Available of electrical rubber mat,				
3	Electrical rubber mat	Identify the rubber mat damage,				
		Available of Boiler test certificate				
		Available of compressor and presser vesse	1			
_		tank test certificate,				
4	Legal doc	Available of Generator (emission) test Certificate,	t			
		Available noise and lux test certificate,				
		Check the Safety valve,				
		Check the Pressure release valve,				
		Check the working condition of pressur gauge,	e			
		Check the Botton valve.				
5	Boiler Safety	Check cut off / on,				
		Boiler max pr 7.5KG,				
		Check the Safety valve,				
		Check the Pressure release valve,				
i		Check the pressure gauge,				
		Check the drain valve auto function.				
6	Dyeing Safety	Check the temperature sensor,				
		Check the Electrician license,				
	Valid persion only	Check the fork lift operator license,				
7		Check the Boiler operator certificate,				
		Work permit follow,				
		LOTO follow,				
		Wear proper PPE,				
0	Machina comvice	Apply Warning sign board,	1			
8	Machine service	Check the Preventive maintaince details.				
		Accident and incident report,				



9	Work place safety	Near miss report,			
		New electrical installation,			
		New machine Installation,			
10	Installation	New building construction,			
RISK	& SAFETY MANAGE	MENT			
		Identify the Pregnant worker and breast	,		
		feeding worker,			
		Availability of caretaker,			
		No allowed heavy load work and don't entry			
		hazards area ,			
		No allowed in over time,			
		No allowed night shift,			
	Pregnant	Proper break time and extant the break time,			
11	worker(PW) &	Regular update of PW & BFW,			
	Breast feeding	Allowed in medical leave (Emergency time),			
	worker(BFW)	Ensure work place risk in PW & BFW.			
		Available of Risk assessment,			
		Ensure all the department Risk Assessment			
12	Risk Assessment	(Updating If Layout changes or New			
		machine installation ),			
		Ensure environmental hazard and ergonomic			
		hazard, fire hazard.			
		Sufficient level of PPE stock,			
		Free cost of replace the PPE's,			
		Check the PPE condition,			
	PPEIG	Check the PPE box condition,			
	PPE'S	Find the improper PPE wearing person,			
1.2	(e.g. engineering	To reduce exposure to noise use to proper			
13	controls, reduce				
	exposure time, insulation wall)	Identify the Dpt wise PPE's warning sign			
	msulation wan)	board fixed,			
		Ensure all the production building fix the	;		
		first aid box,			
		Clearly visible FAB,			
1.4	Einst sid how	Easily accessible FAB,			
14	First aid box	Medicine available FAB,			
		No blockage of FAB,			
		Work permit s/m followed,			
		LOTO procedure followed,			
		Wear the proper PPE,			
		Use the warning sign board,			
		Identify the Loose wire, Burning wire,			
		Multi looping, Damage wire, Improper			
		jointing wire, Identify Melting & over			
		heating.  Available of electrical rubber mat, Identify			
15	Electrical Risk	the rubber mat damage.			
		All the SSB,DP,LDP proper wire insulate			
		mi me ssb, Dr, LDr proper wire insurate			



		and proper dummy provide, cable are covered by pvc pipe or other relevant materials.
		Check the earth value monthly once,
		Check the preventive maintaince schedule,
		Accident report (major, minor, medium).
		Near miss report.
		Work permit report.
		Noise report.
16	Record	H&S committee meeting report,

CHE	MICAL MANA	GEMENT SYSTEM		
		List of Chemical.		
		List of MSDS,		
		Sufficient level of secondary container,		
		Sufficient level of FE,		
		Availability of FAB and medicine,		
		Availability of spill kit,		
		Available of emergency evacuation procedure,		
		Available of emergency chart,		
		Available of evacuation map,		
		Available of FF & FA trainer,		
		Availability of eye wash station,		
		Availability of humidity meter,		
17	Chemical	Available of warning sign board,		
	Storage area	Available of PPE sign board,		
		Check the condition of secondary container,		
		Identify the damage and spillage,		
18	Secondary	Regular inspection of secondary container.		
	container			
		Clearly visible of spill kit,		
		Easily accessible,		
		Available of spill kit materials,		
19	Spill kit	Available of Spill kit operating instruction,		
		MSDS & SDS there are should be following details are		
		verified :		
		Product Name,		
		Manufacturing Address,		
		Effect the chemical,		
		Human Health affect,		
		Pictogram symbols,		
		Suggestion PPES,		
		MSDS & SDS full update version,		
20	MSDS an	Version 3 years once reverse the MSDS,		
	SDS	The employees should be knowledge of the MSDS		
		information.	 	
		PPE using awareness,		



		Spill kit Awareness,		
		Eye wash and shower station Awareness,		
		General health and safety Awareness,		
		Fire drill awareness,		
		Fire fighting training,		
21	Awareness	First Aid training,		
		Available of operating instruction,		
		Easy Access able,		
		Check the valve,		
22	Eye wash and	Sufficient level of water and water pressure,		
	shower station			
		Check the condition of PPE box,		
		Check the condition of PPE,		
		Find the improper PPE wearing person,		
23	PPE & PPE box	Availability of PPE,		
		Proper segregation of waste can & carton box storage		
24	Empty can and	area,		
	box	Chemical can after clean then can move to empty can		
		storage area,		

IRE	E SAFETY EVACU			
		Clear visible of exit and Emg exit door,		
		Clear visible of exit and emg exit board,		
		Clear visible of Yellow line and red arrow making,		
		Clear visible of evacuation map,		
		Clear visible of Fire safety equipment,		
		Clear visible of first aid box,		
5	Building	Applicable centralized fire alarm system,		
		No Object storage(Waste materials, chemical, carton box)		
		Steps start and end zebra marking,		
5	Stair case	Availability of Hand dill,		
		No close the exit and emg exit door (including break and		
		lunch time period, same as night duty lunch time),		
		No blockage of exit and emg exit rounds (free from		
		obstacles),		
		No automatic door,		
7	Exit and Emg	No flammable material stored in rounds and door,		
	exit	Clear visible of Exit and emg exit Sign board,		
		Emg exit width 80 cm,		
		Clear visible of exit light sign,		
		Check the Doom light direction,		
3	Emergency light	Check frequently Battery back up (Update check list),		
	Yellow and red	Clear visible of yellow line mark and red arrow marking,		
)	marking	Identify any defect of marking,		
		Centralized fire alarm s/m,		
		All the building Sufficient level of fire alarm s/m,		



		T			
		All the worker Identify the FA,			
		Clear visible of Fire alarm s/m,			
		Available of operating instruction,			
		Available of hammer,		  -	
		Free from obstacle,			
		Evacuation of worker Minimum 5 mit of working,			
30		Available of UBS battery backup,			
	system				
		All the building Sufficient level of sound,			
		Its different Sound easy identify the worker.			
		Evacuation of worker Minimum 5 mit of working,			
31	Fire alarm Sound	Employee how to operate FA.			
		Update check list,			
32	Fire alarm Test	All time working condition with maintaince and service of		ļ	
		FA,			
		The building Sufficient level of fire extinguisher,			
		Clear visible of fire extinguisher,			
		Easy accessible of fire extinguisher,			
33	Fire equipment	Available of operating instruction board,			
		Yearly once Refilling FE,			
		Monthly once checking of FE,			
		Update the FE card,			
		Update the check list,			
34	Fire extinguisher	Employee how to operate FE,			
		Building Sufficient level of smoke detector,			
		different Sound easy identify the worker,			
35	Smoke detector	Frequently check the battery.			
36	Smoke detector	Update check list			
	test			ļ	
		First aid trainer - 2% of worker,			
		Fire fighting trainer - 10% of worker,			
		Available FA & FE certificate,			
37	Trained person	The building FE & FA mention			
		Drill Awareness of worker,			
		Drill conducted by two month once			
		(Crosse verification of record),			
		This drill applicable for Buyer and visitor and other			
38	Evacuation Drill	worker		ļ	
		(Factory inside of all the people applicable).			
		Everyone knows with our Assembly point num,			
		Line followed by the Assembly point			
39	Assembly point	Head counting Authorised person only,			
LIVI	NG ENVIRONME		l		
		Availability of transport vehicle,		<del></del> 1	
		Driver only applicable for valid license holder,			
		Available of medical certificate in driver,			
		Check the vehicle live (FC),			
		Check the Preventive maintaince details,			
I	I				



		Available of first aid box and Medicine,				
		Available of fire extinguisher,				
		Check the break condition,				
40	Transport	Check the light condition,				
		Check the neatness of rest room,				
		Availability of cleaning materials,				
		Available of continuous water				
		Per day 3 time of cleaning,				
		Cleaning time wear the PPES,				
		Clear visible of MSDS,				
41	Toilet	Available of restroom check list,				
		Clear visible of sign board,				
		Availability of drinking water,				
		Check the Stand condition				
		No Spillage of water				
		Check the Condition of water				
42	Drinking point	Check the Condition of Water can,				
		Work place H&S environment,				
		Proper ventilation,				
		Proper illumination,				
		Acceptable temperature,				
		Free access the toilet,				
		Free access the drinking point,				
		Free of use transport,				
		Proper wear the PPE'S				
43	Employee work place	Proper cleaning maintain,				
		Available of Employee medical certificate,				
		Available drinking point,				
		Available hand washing place,				
		Available of first aid box and Medicine,				
	·		•	•		
44	Canteen	Available of fire extinguisher,				
44	Canteen	Available of fire alarm switch,				
		Available of ERT chart and emergency procedure,				
		Available of Evacuation map,				
		Sufficient shitting table,				
		Only allowed in Responsible person,				
		Available of toys,				
		No allowed in sharp toys,				
		Available of drinking water,				
		Available of toilet,				
45	Crèche room	Ensure the inside no chemical.			+	
	10011	Treatment only Responsible person (Doctor and Nurse),				
		Available of Doctor and Nurse,				
		Available of bed,			+	
		Available of Medicine,				
	i	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1	i



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		Proper waste disposal and record,		
		Available of drinking water,		
		Available of toilet,		
46	First aid room	Identify the hygienic cleaning,		
		All ways maintain Factory neat and clean,		
		Availability of dustbins,		
		Regular cleaning of dustbins,		
47	Cleaning	Keep always dry condition of floor,		
		proper segregation of waste storage area		
		(E waste, Oil waste, machine waste, chemical waste, fabric		
		waste),		
		Identify factory Inside the if any unnecessary place storage		
48	Waste storage	of waste,		
	area	Check the Waste disposal record,		
		Identify the GCT approval person is Waste collected		

Responsible person:  Due Date:  Checking parameters	Inspection Date:				Novt										
			Responsible person: Inspection Date: Next												
Charling parameters															
Checking parameters					If Found Any										
Clam Eas Ho	Safet Phyi	If CO2	Inspec	Operat	Deviatio										
S. Locat Ty Capac p y Pressure se	y Pin cal	-	tion	ing	n										
No ion   pe   ity   Condi   access   level   Cond	& apperi	Che	Tag	Instruc	(Update										
tion lible lition	seal ance	ck	Provid	tion	in										
to	provi	Wei	ed		DECAT										
Hang	ded	ght			HLON										
(Ok / (Yes / (Low/Normal (Good/I	B (Yes (Good/Dam	(Below/No	(Yes/	(Yes/	format)										
Not No) /High) ad)	/ No) aged)	rmal)	No)	No)											
Ok)															

Fire extinguisher monitoring inspection log

Table -25 Emergency light monitoring inspection log

11	MENAKA MILL PVT LTD UNIT - I												
Emergency Light Monitoring - Inspection Log													
Responsible person: Inspection Date: Next Due Date:													
		Che	cking para	meters								If Found	
			Batte	Disp	Swi	Doom	Light	Working	Duriation of Light	Physic	Dama	Any	
S.	Locati		ry	lay	tch	Light	condition		working	al	ged	Deviatio	
No	on	Ту	Condi	sig	wor	Direc				appeara	Wire	n	
		pe	tion	ns	king	tion				nce	S	(Update	
				wo								in	
				rki								DECAT	



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			ng											HLON
		Good/	Worki	Goo	(Yes/	Goo	Fuse	Bulb	Bel	Betwe	Abo	(Goo	(Yes/	format)
		Bad	ng	d /	No)	d	not	not	ow	en 5	ve	d/	No)	
			/	Dama		Work	work	work	5	to 8	8	Damag		
			Not	ged		ing	ing	ing	Min	Min	Min	ed)		
			wo											
			rki											
			ng											
	l													

Table -26 Fire alarm switch (or) Manual call point monitoring inspection log

	-	20 1110 unu	in switch (or	,	Joint monitori	ing inspection	105						
MENA	KA MILL PV	T LTD UNIT - I											
Manual Call Point Monitoring - Inspection Log													
Responsible person: Inspection Date: Next Due Date:													
	Checking par	rameters						If Found	Any				
Location	Easy	FLB	Glass	Hammer	Physical	Wire	Operating	Deviation					
	accessible	Connectivity	Condition	availability	appearance	Condition	Instruction	(Update	in				
		- Check By						DECATHLO	ON				
		Removing						format)					
		Glass											
	(Yes/No)	(Working/ Not	(Good/	(Good/	(Good/	(Good/	(Yes/No)	1					
		working)	Damaged)	Damaged)	Damaged)	Damaged)							
					•	•	•	•					
	l Call Poinsible per	MENAKA MILL PV  I Call Point Monitorin  Insible person:  Checking pa  Easy accessible	MENAKA MILL PVT LTD UNIT - I  I Call Point Monitoring - Inspection Log nsible person:  Checking parameters  Checking parameters  Easy accessible Connectivity - Check By Removing Glass (Yes/ No) (Working/ Not	MENAKA MILL PVT LTD UNIT - I  I Call Point Monitoring - Inspection Log  Inspection Date:  Checking parameters  Checking parameters  Easy FLB Glass  Connectivity Condition  - Check By Removing Glass  (Yes/No) (Working/ Not (Good/	MENAKA MILL PVT LTD UNIT - I  I Call Point Monitoring - Inspection Log  Inspection Date:  Checking parameters  Easy FLB Glass Hammer availability  - Check By Removing Glass  (Yes/ No) (Working/ Not (Good/ (Good/	MENAKA MILL PVT LTD UNIT - I  Call Point Monitoring - Inspection Log  Inspection Date:  Checking parameters  Checking parameters  Easy FLB Glass Hammer Physical accessible Connectivity Condition availability appearance  - Check By Removing Glass  (Yes/ No) (Working/ Not (Good/ (Good/ (Good/	MENAKA MILL PVT LTD UNIT - I  I Call Point Monitoring - Inspection Log  Inspection Date:  Checking parameters  Checking parameters  Easy FLB Glass Hammer Physical Wire appearance Condition  - Check By Removing Glass  (Yes/No) (Working/ Not (Good/	Call Point Monitoring - Inspection Log   Inspection Date:   Next Due Date:	MENAKA MILL PVT LTD UNIT - I  I Call Point Monitoring - Inspection Log nsible person: Inspection Date: Next Due Date:  Checking parameters  Easy FLB Glass Hammer Availability accessible Connectivity Condition Cupdate DECATHLO Format)  - Check By Removing Glass  (Yes/No) (Working/ Not (Good/ (Good/ (Good/ (Good/ (Yes/No) Condition Condition Condition Condition Condition Cupdate DECATHLO Format)				

### Table -27 Smoke detectors monitoring inspection log

				<i>U</i> 1	0	
	MENAKA MILL	PVT LTD UNIT	' - I			
Detectors N	Ionitoring - Inspecti	on Log				
sible person	1:	Inspec	ction Date:	Next	Due Date:	
Location	FLB Connectivity check with smoke  (Working/ Not	Physical appearance (Good/ Bad)	Wiring condition  (Good/	Blinking light  (Yes/	Cobweb / Dust particles clean  (Yes/No)	If Found Any Deviation (Update in DECATHLON format)
	6,			,		
	sible person	Detectors Monitoring - Inspectionsible person:    FLB	Detectors Monitoring - Inspection Log sible person:    FLB	Location FLB Physical Wiring Connectivity appearance condition check with smoke  (Working/ Not (Good/ Bad) (Good/	MENAKA MILL PVT LTD UNIT - I  Detectors Monitoring - Inspection Log sible person:  Inspection Date:  Next  FLB Connectivity check with smoke  (Working/ Not (Good/ Bad) (Good/ (Yes/	MENAKA MILL PVT LTD UNIT - I  Detectors Monitoring - Inspection Log  sible person:  Inspection Date:  Next Due Date:  FLB Physical Wiring Blinking Cobweb / Connectivity appearance condition light Dust particles clean  (Working/ Not (Good/ Bad) (Good/ (Yes/ (Yes/No)))



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### Table -28 Fire hydrant monitoring inspection log

11		MENA	KA M	ILL F	VT LTD	UNIT - I									
Fire	e Hydra	nt Monite	oring -	Insp	ection Lo	g									
Res	ponsib	le person:					Inspecti	on Date:				Ne	xt Du	e Date:	
		Availabi	lity		Checking	g parameter:	S								If Found
		Hose			Eas	Phyical	Nozzl	Hose	Gat	Hose				Opera	Any
Box H y apperianc e to to e Condit Pressure ting														Deviatio	
S. Locat Key Noz os access e of Hose Hose Hydra valv ion level Instruc														n	
No ion Prov zle e ible Box Coupli nt e (Leaka tion (															(Update
	olion Prov zie e ibie Box Coupii nt e (Leaka tion (Opdate in														
			No'	al			conne	Coupl	el						DECAT
			S	- 2			cted	ing	rota						HLON
				No				conne	tion						format)
				's				cted							
		(Yes/			(Yes/	(Go	(Yes	(Ye	(Easy/	(Go	L	Nor	Hi	(Yes/	
		No)			No)	od/	/	s/	Hard)	od/	О	mal	gh	No)	
						Dama	No)	No)		Dama	W				
						ged)				ged)					

### Table -29 Fire hose reel monitoring inspection log

	Hose ree	l Monitorin	ENAKA MII g - Inspectio			· I ection Date:				Next	Due Date:	
S.N o	Locatio n	Easy accessib le	Phyical apperian ce of Hose reel drum	Nozzle Conditi on (Easy Twistin g)	Hose Dru m rotat ion	Gate valve conditi on	Hose Conditio n (Leakage s)		Pressure	e level	Operati ng Instructi on	If Found Any Deviation (Update in DECATHL ON format)
		(Yes/ No)	(Good /Damaged)	(Good /Damage d)	(Easy/ Hard)	(Good/ Bad)	(Good /Damaged)	Lo w	Norm al	Hig h	(Yes/ No)	

### Table -30 Eye wash station monitoring inspection log

MENAKA M	ILL P	T LTD U	NIT - I									
Eye wash and	showe	station M	Ionitoring	g - Inspec	tion Log	5						
Responsible	Inspe	ction	Next	Due Dat	e:							
person:	Date:											
											If	Found
						sufficient	Nozzle	fitting	Operat	ting	Any	
•								•				•



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		Easy	Hand	Foot	Shower	water	condition	damage	Instruction	Deviation
		accessible	valve	valve	valve	pressure		or water		(Update in
S.No	Location							leakage		DECATHLON
		(Yes/	(Easy/	(Easy/	(Easy/	(Yes/	(Good	(Yes/ No)	(Yes/ No)	format)
		No)	Hard)	Hard)	Hard)	No)	/Damaged)			

### Table -31 Drinking point monitoring inspection log

					01	moring inspecti	<i>U</i>			
MENAK	KA MILL P	VT LTD UNI	T - I							
Drinking	g point stati	on Monitoring	g - Inspectio	n Log						
Respons	ible In	spection	Ne	ext Due Date:						
person:	D	ate:								
				sufficient		fitting damage	Rubber mat	Check the		
		Easy	Dinking	level of	Nozzle	or water	condition	water	If	Found
		accessible	valve	water	condition	leakage		taste	Any	
S.No	Location								Devia	ntion
		(Yes/No)	(Easy/	(Yes/No)	(Good	(Yes/No)	(Good	(Ok / Not	(Upda	ate in
			Hard)		/Damaged)		/Damaged)	ok)	DECAT	HLON
									format)	

### Table -32 Air receiver tank monitoring inspection log

				PVT LTD													
Air	receive	er tank	Mon	itoring - I	nspec												
						In	spection D	ate:					Next Du	e Dat	e:		
											Is the						
											drain						
											pipe		Is the				Maxi
										All	line	Safety	in			Curr	mum
	Pres			Name		Year	CAP/VO	Condi	Air	drains	valve	valve	coming		MAX.W	ent	allow
Sl.	sur	Locat	Seri	and	Nat	on	LUM	tion	lea	handle	installe	easily	and	Press	ORK.	press	able
no	e	ion	al	addres	ure	manfact	Е	of	kag	easily	d on	access	out	ure	PR	ure	storag
	ve		num	s of	of	uring		the	e	access	the	iable	going	gaug		of	e tank
	sse		ber	manuf	proc	_		tank	for	iable	lowest		pipe	e		the	worki
	1			acturer	ess				tan		point		line			tank	ng
	det								k		of the		valve				pressu
	ail										compr		installe				re
											essor		d on				
											tank		the top				
													and				
													lowest				
													point				
													of the				
													compre				
													ssor				
													3301				



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Table -33 Environmental impact monitoring inspection log

				1						-	UNI'		Броон		<u> </u>				
Enviro	onmental Ir	npact Che	ck L	ist															
Respo	onsible per	son:			In	specti	on D	Date:				Nex	t Due	Date:					
					Seco	ndar			Mate	erial	Mate	rials	Any		MSI	OS	Usir	ng	If Found
			Mat	terial	у		Any	1	cont	ainer	store	d	Flam	mabl	&	Spill	PPE	S	Any
			s	are	Cont	aine	Lea	kage	S	are	under	r	e t	hings	Cont	rol	whil	le	Deviatio
Sl.N																			
О	n al d Availabl Spillage properly roof near e g the (Update																		
		Stored	Pr	oper	e	in	four	nd			&	in			Disp	laye	mate	erial	in
			ly		prop	er					Vent	tilate			d		s		DECATHLO
					cond	ition					d								N format)
											cond	lition							
			О	No	Ok	No	О	No	Ok	No	Ok	Not	Yes	No	Yes	No	Ye	No	
			k	t		t	k	t		t		Ok					S		
				k				k		k									
							·												

Table -34 Electrical panel board monitoring inspection log

Me	naka mill	s pvt ltd	unit-1											
Ele	ctrical pa	nel board	linspection	on -log										
Re	sponsibl	le persoi	n: Inspec	ction Date:	Next	Due	::							
SI. N o.	Locati on	PANE L NO	Cleani ng conditi on	Phyical apperia nce Indicati on lamp	Indica on lam Wo ing con tion	ip irk di	Phyical apperi ance Switch	Switch workin g conditi on	Loo se wire	Heat Leaka ge	Prop er closi ng door	Warni ng signs (dange r and voltag e sign)	Electric al rubber mat condit ion	If Found Any Deviati on
			OK / NOT OK	(Good/ Damage d)	OK NOT OK		(Good/ Damage d)	OK / NOT OK	OK / NO T OK			Yes / No	(Good/ Damage d)	



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Table -35 Safety equipments – corrective action report

			I	· · · · · · · · · · · · · · · · · · ·	
N SA	MENAKA MILL PVI		REPORT		
<u> </u>	ELITEQUIAMENTS C.	STREETLY D TIGHTON	ter out		
Inspe	ction Done By:	Date of Inspection:	Na	ame of the Equipment:	
SL	Deviation	Corrective	Completion	Responsible	Verified by
	Found	Action	Date	person	person

Table -36 work permit system

WORK PERMIT I	DESCRIPTIO	ON	1	<u> </u>			
1)Date:	Time start: T		me end:				
2)Job Location:							
3)Job Description:							
4)Associated							
work permit (if any):							
Туре	Permit	Туре	Permit No	Туре	Permit No		
	No						
HAZARDS AND I	DECVILLO	)NI					
Hazards	RECAUTIC	PPE		Flectrics	al Isolation	Authorised	ELE
1 iuzurus				Electrica	ii isolution	Incharge	DEL
Falling		Safety helmet		LOTO Done			
Objects Fall		Safety shoe		Isolator put off &			
from height		Safety Harness		Locked Test for non			
Overhead		Gloves		operative			
Danger		Life line		Service		Authorised	MNT
Moving		Face sheld Other		Isolation		Incharge	
machine				Depressurised			
Auto start				Valve o	closed &		
equipment				Tagged			
Traffic				Line blanked			
movement		OTHER PRECAUTIONS		Process Isolation		Authorised opeator	
HV / LV / Line		Safety Net		Valve closed &			
near by Other		Scaffolding		Tagged Line			
		Crawl	Board	blanked			
		Signage		Line disconnected			
		Barrication					
PERMIT ISSUE A		ΓANCE					
Permit Requestor							
I understand the work scope, Hazards, Precautions to be tacken and ensure compliance.							
	I wi	ill conduct a safety	talk in this regard	to the personnel and	d record on the ba	ick side of this pe	rmit.
Name	S	Sign Date & Time					



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Permit Authoriser I have reviewed the work scope, Hazards and pecautions and authorise for proceeding the work Name Sign Date & Time ENDORSEMENTS FOR EXTENSION / CANCELLATIONS Date Time Valid upto Authoriser After hour Operator Requestor (AM Authoriser PM) PERMIT CLOSURE Permit Requestor The job described in this permit has been completed, all safety devices put back, area cleared and person on the job. withdrawn Date & Time Name Sign Permit Authorisr

### SAFETY TALK

Sign

Name

i have been explained on the content of this work permit (work scope, hazard precautions) and provided necessary ppe's .i shall strictly follow and will be held responsible or any deviations.

Date & Time

Table – 36.1 safety talk worker details

I have reviewed the work site, satisfied and accept for closing this permit

Sl.no	Name	Signature

### IV. CONCLUSION

Hazard Identification and Risk Assessment (HIRA) study were made on the textile and various hazards of different process and their associated equipment's were found. Recommendations are provided to reduce high level risk to low level. Noise level is measured in various areas of the industry and suitable control measures are suggested. In textile industries, the working environment is high in temperature and hence heat stress, chemical handling index is calculated for the workers working in the Boiler and Dyeing area, ETP & RO plant suitable preventive measures are given. Health hazards associated with each process are found and suitable mitigation measures are given for safe handling of the chemicals.

The KPI (KEY PERFORMANCE INDICATPOR) ,its new implementation of MENAKA MILLS UNIT-1 PVT LTD .the factory new update version of KPI table format and KPI schedule, sop o safety and health, list of deviation and monitoring inspection log ,list o PPE's tabulated department wise , transport safety, key person, daily and monthly on field observe ,work permit system.

The KPI and HIRA assessment details and schedule should be correctly followed and give to working awareness then successive run by factory.



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