

M4-EN.11 RISK ASSESSMENT TOOL

Hazard		Who (Employees that might be harmed)	Harm	Current Safety Measures
Source	Hazard description			
Offices – Supporting Services	<ul style="list-style-type: none"> • Inability to rapidly and safely evacuate workplace • Inability to confront fire • Slips and trips • Improper indoor air quality • Improper temperature • Improper lighting • Breaking in glass surfaces • Ergonomic strain of work-post • Eye fatigue due to computer screen 	<p>Employees working in the offices and at supporting services like secretaries, clerks, managers, accountants, cleaners etc.</p>	<ul style="list-style-type: none"> • Entrapement in the office • Burns • Musculoskeletal injuries • Respiratory hardness • General Injuries • Neck and back pains • Ophthalmologic problems 	<ul style="list-style-type: none"> • Efficient (by means of number and dimensions) safety exits that can easily open outwards, are never locked or obstructed, signal-indicated and lighted with redundant lighting • Mechanical doors should have a redundant manual handling system • Efficient escape routes that remain always unobstructed, signal-indicated and lighted with redundant lighting • Efficient number of fire extinguishers that are easy to access and use, recently retread and signal-indicated. If possible place a fire detection and extinguish that is frequently maintained • Properly trained personnel • Alarm systems maintained in a good operating fit • Efficiently wide pathways, housekeeping, cleanliness, re-motion of every obstacle lower than knee height or shelves opening towards the corridor, fixation of cables, proper floor maintenance • Efficient renewal with fresh air and control of continuous and proper operation of technical systems for air renewal when this cannot be achieved naturally • Keeping temperature in proper levels for the kind of tasks executed • Efficient lighting (natural if possible) • If electrical lighting is required then it should

				<p>not be glaring and redundant lighting should exist for the case of blackout</p> <ul style="list-style-type: none"> • Glass surfaces should be signal-indicated and if placed close to employees should be of safety glass • Seats and computer screens should be adjustable in height and lean and there should be frequent change of body positions that are not strainful. Frequent motion • Frequent interruption of work in screens interfering other tasks
<p>PRODUCTION FLOOR</p> <p>General safety</p>	<ul style="list-style-type: none"> • Improper indoor air quality • Improper temperature • Improper lighting • Improper signaling • Excessive noise • Aerosols 	<p>All employees working in the production floor, or those being present temporarily</p>	<ul style="list-style-type: none"> • Respiratory problems • Ophthalmological problems • Accidents • Hearing problems 	<ul style="list-style-type: none"> • Efficient renewal with fresh air and control of continuous and proper operation of technical systems for air renewal when this cannot be achieved naturally • Keeping temperature in proper levels for the kind of tasks executed • Efficient lighting (natural if possible) • If electrical lighting is required then it should not be glaring and redundant lighting should exist for the case of blackout • Glass surfaces should be signal-indicated and if placed close to employees should be of safety glass • Proper noise insulation of mechanical equipment and displacement of pumping equipment outside the production place • Use of ear protection in all stages of production • Often cleaning and automatic cleaners presence in spinning frames and winding frames and looms • Use of personal protective equipment especially in grinning sector
<p>Equipment and installations (operation)</p>	<ul style="list-style-type: none"> • Trapping in general • Struck by moving object • Ergonomic strain • Burn 	<p>All employees working in the production floor</p>	<ul style="list-style-type: none"> • Neck and back pains • Musculoskeletal injuries • Burns 	<ul style="list-style-type: none"> • Stopping stripes along dispenser • Weight photo-cell to avoid movement of press while human being is present • Enclosure of the whole press machine • Where possible interlock or photo-cell system

			<ul style="list-style-type: none"> • Stress, anxiety • Upper limbs entrapment • Mutilation 	<p>for automatic stoppage in case of presence in dangerous area especially near grinning frames</p> <ul style="list-style-type: none"> • Automation of press feeding and control system of pushers movement when power stops and guardings at the back of the pusher • Photo-cell in opener arm • Protection of moving and sharp surfaces at lustring frames with protective guardings • Transparent covers at Drawers, combers and combing preparation. Doffing automation. Interlock in warping frames • Doffing automatization • Stepping operation at looms and brake system. Arrow protection at the specific looms • Protective gauze when cotton suction • Lustring automatization and enough space ensurance at the down part od lustring frame • Seed cotton feeding cleaning before sunction. Keeping system of cotton parcels in case of emergency at press. • Cotton parcel opening automatization • Cotton parcel handling automatization in packing sector kai opening sector in spinning frames • Wastage collection and refeeding automatization • Ergonomic design of bucket • Automatization in winders handling from combing preparation to combers, changing canes and cones at roving frames, spinning frames and winding frames • Job rotation
Maintenance	<ul style="list-style-type: none"> • Release of kinetic energy • Release of hydraulic - pneumatic energy • Electrical danger • Contact with sharp surfaces 	All employees working in maintenance services	<ul style="list-style-type: none"> • Electrocution • Entrapment • Upper limbs injuries • Mutilation 	<ul style="list-style-type: none"> • Proper lighting • Efficient space • Isolation of the area and prohibition of entry of other employees • Backing up of heavy parts before disassembling

				<ul style="list-style-type: none"> • Shutoff of pressurized water – air supply, depressurization and disassembling of supply before starting with maintenance • Shutoff of electrical power supply and disconnection • Proper backup and personal protection during work in height
Vehicle movement	<ul style="list-style-type: none"> • Risks from private cotton supply lorries • Risks from suppliers’ clients’ trucks • Risk from forklift trucks • Risk from derricks in grinning sector • Risks from personnel cars 	<p>Forklift operators Clients Employees from other departments</p>	<ul style="list-style-type: none"> • Accidents • Falls • Struck by trucks • Head, arms, hand, legs injuries • Permanent disability • Death 	<ul style="list-style-type: none"> • Strict control of incoming – outgoing vehicles in gate • Installation of certain pathways for each vehicle kind • Guidance of third party vehicles in workplace • Isolation of the area when a derrick is working • Strict control of incoming – outgoing vehicles in gate • Installation of certain pathways for each vehicle kind • Guidance of third party vehicles in workplace • Isolation of the area when a derrick is working • Checking of vehicles’ good shape, especially braking system, backwards beeper, mirrors and lights • Personnel allowed only in specially designed seats of the vehicle • Use of vehicles only from skilled authorized personnel • No use of forklift trucks in tasks not specified • Low speed, especially when loaded • Load up to the point where visibility is not disturbed • Travel so as to keep load always leaning towards the vehicle • Signaling of vehicle pathways • Fixed mirrors in corners • Training of all related personnel
Manual	<ul style="list-style-type: none"> • Risks during use of metallic objects • Risks during box handling 	All employees in all departments	<ul style="list-style-type: none"> • Musculoskeletal disorders • Upper limbs 	<ul style="list-style-type: none"> • Training of personnel on correct load lifting • Automatization of handling with special lifting equipment where possible

handling			entrapment	<ul style="list-style-type: none"> • Use of lifting equipment and buggies in all boxes where possible
Strain due to body position	<ul style="list-style-type: none"> • Risk due to prolonged standing • Risk due to hands working in height over the shoulder • Risk due to bending 	All employees in all departments	<ul style="list-style-type: none"> • Musculoskeletal disorders 	<ul style="list-style-type: none"> • Avoiding standing position by putting proper seats where possible, or with small intervals • Doffing automatization • Job rotating • Canes changing automatization at roving frames and spinning frames • Changing of foot pushing system at spindle with a manual one
Slips and trips	<ul style="list-style-type: none"> • Risk of trip in badly lighted areas • Risk of foot trap in drainage, missing cover or cable • Risk of slip • Risk of struck against fixed object of low height 	All employees in all departments	<ul style="list-style-type: none"> • Accidents • Falls • Head, arms, hand, legs injuries • Permanent disability 	<ul style="list-style-type: none"> • Efficiently wide pathways, housekeeping, cleanliness, remotion of every obstacle lower than knee height or shelves opening towards the corridor, fixation of cables, proper floor maintenance • Efficient natural lighting where possible. • Efficient lighting (natural if possible) • If electrical lighting is required then it should not be glaring and redundant lighting should exist for the case of blackout
Falls	<ul style="list-style-type: none"> • Risk of falling on underlying floor • Risk of falling during maintenance • Risk of falling during cleaning 	Employees working in height	<ul style="list-style-type: none"> • Accidents • Falls • Head, arms, hand, legs injuries • Permanent disability 	<ul style="list-style-type: none"> • Rail of 1 m with a mast of 15 cm in every surface lying above 75 cm. Immediate replacement of any missing covers • Use of anti-fall equipment during specific maintenance tasks • Use of scaffolds or special personnel lifting vehicle with a continuous presence and control of the operator when work in height is required
Fire	<ul style="list-style-type: none"> • Risk of spark production and fire • Risk of cotton ignition at the openers • Risk of cotton ignition before lustring • Risk of chemical substances ignition in weaving • Risk of yarns ignition, fabric ignition • Risk of fire in workplace • Risk of fire transfer to by-standing 	All employees in alla departments	<ul style="list-style-type: none"> • Accidents • Falls • Burns • Respiratory problems • Panic • Stress • Anxiety 	<ul style="list-style-type: none"> • Efficient (by means of number and dimensions) safety exits that can easily open outwards, are never locked or obstructed, signal-indicated and lighted with redundant lighting • Mechanical doors should have a redundant manual handling system • Efficient escape routes that remain always unobstructed, signal-indicated and lighted with redundant lighting • Efficient escape charts for cases of danger

	<p>workplaces</p> <ul style="list-style-type: none"> • Wrong selection of fire extinguishers • Risk of panic and chaos due to fire 			<p>should be placed in meeting points and corridors</p> <ul style="list-style-type: none"> • Attention at cotton first stage humidity and limits should be known at every textile manufacturing stage • Efficient number of fire extinguishers that are easy to access and use, recently retread and signal-indicated. If possible place a fire detection and extinguish that is frequently maintained • Frequent inspection of fire extinguishing means and systems according to fire service guides • Fire resistant doors and a system for checking ventilation • Proper signaling of fire extinguishing means and proper training of personnel on its use • Founding of a fire protection squad, development of a plan for risk management and information of squad members on their specific responsibilities • If possible a visual and auditory warning signal for fire and personnel evacuation. • Efficient number of Personal Protective Equipment and fire extinguishing means to be stored in a specially signaled area
<p>Electrical risks</p>	<ul style="list-style-type: none"> • Bad maintenance of electrical installations • Worn cables and plugs • No grounding of electrical installations in places with non-insulated floor • Risk of electrical shock in humid places • Risk of electrical shock from contact to naked wire, worn hand tools, etc • Risk of electrical shock from overheating and strain of cables • Risk of electrical shock during 	<p>All employees</p>	<ul style="list-style-type: none"> • Electrocution • Permanent injuries • Death 	<ul style="list-style-type: none"> • Installation and maintenance of electrical infrastructure only from skilled and authorized personnel • Frequent check and inspection of electrical installations • Immediate replacement of broken switches and plugs, as well as worn-out equipment and cables • Immediate replacement of fuse cartridges that burn with new ones of the same nominal intensity. However, if they burn often, identification and repair of the potential impairment or change in the load of the specific line. Check for turnout box covers in

	<p>maintenance of electrical installations</p> <ul style="list-style-type: none"> • Risk of electrical shock of an employee coming to the rescue 			<p>guards installations in every part of a device or machine under voltage before electrical power supply is connected</p> <ul style="list-style-type: none"> • Grounding for every electrical installation, device or machine, especially if it is in area without insulated floor. This also concerns small devices like drillers. Shutoff of power supply before any tasks of cleaning, repair, maintenance or movement of machinery. Especially in cleaning, in order to avoid water, soap, etc. that leave humidity before power supply is reconnected • Avoid contact with switches, plugs and electrical equipment or devices with wet or very sweaty hands • Proper training of personnel on First Aid in electrical shock victims • Use of proper hand-tools with insulated handles
<p>Chemical risks</p>	<ul style="list-style-type: none"> • Non properly ventilated area for the use of emulsifiers, stabilizers, anti-corrosives, biocides, aromatics and high pressure additives • Improper indoor air quality due to breathable droplets or smother of oil and fumes that can be produced during machine operation • Risk of mistaken use of metal cutting fluids • Risk of contamination of personal effects or clothing of personnel from chemical substances • Non-available Material Safety Data Sheets of chemical substances - dissolvers • Risk of infection of employee coming to the rescue from chemicals 	<p>Employees working with chemical substances</p>	<ul style="list-style-type: none"> • Breathing difficulties • Dermatitis • Respiratory problems • Poisoning • Confussion • Stress • Burns 	<ul style="list-style-type: none"> • Efficient renewal with fresh air naturally, or when it can only be by artificial means, to check their effective and continuous operation • Proper training of personnel in correct handling of metal cutting fuels • Use of the proper Personal Protective Equipment for skin, eye and face protection from chemical substances • Handling of metal cutting fluids should take place in a well ventilated area under controllable conditions • Ensuring that protective equipment has been thoroughly cleaned with water after use and checked for slashing (e.g. needles or cuttings in gloves, especially in finger covers) • All contaminated clothes should be professionally cleaned before used again • Employees should avoid contact with contaminated equipment, as well as putting respiratory protection off with their gloves,

				<p>which could lead to burns in face</p> <ul style="list-style-type: none"> • Material Safety Data Sheet of every substance should be demanded by importer, producer or vendor of the substance • Proper training of personnel on issues of First Aid of chemical accidents victims
<p>Personal Protective Equipment</p>	<ul style="list-style-type: none"> • Erroneous selection • Erroneous use • Non-use • Bad maintenance 	<p>All employees having given PPE</p>	<ul style="list-style-type: none"> • Confussion • Allergic reaction due to PPEs' materials • Injuries due to non-use 	<ul style="list-style-type: none"> • Use of only certified Personal Protective Equipment • Selection of the proper equipment for every post and charging to employee • Personnel training on use and maintenance of Personal Protective Equipment • Hearing Personal Protective Equipment use in all production stages • Head, eye and hand protection to all working in maintenance • Anti-slip shoes in all stages of production • Anti-fall equipment for occasional work in height
<p>Stress at work</p>	<p>Problems with colleagues Stress by floor-walkers Stress by the boss Incapability of inferiors Monotonous and repetitive work Absence of breaks</p>	<p>All employees</p>	<ul style="list-style-type: none"> • Absenteeism • High staff turnover • Poor time-keeping • Errors • Poor decision making • Bullying • Isolation • Aggressive communication • Sleep problems • Irritability • Alcohol or drug abuse • Back problems • Phychosomatic problems 	<ul style="list-style-type: none"> • Clarity of employee's role and responsibilities • Development of knowledge, skills and capabilities • Organization of work (rotation, vacations, pauses etc) • Avoidance of repetitive and monotonous work • Training of managers and workers to raise awareness and understanding of stress, its possible causes and how to deal with it • Provision of adequate management support for individual and team • Performance of Risk Assessment