Sealed Air
Smithfield, NSW 2164

VENUS AUTOMATION

HAZARD IDENTIFICATION, RISK ASSESSMENT AND RISK CONTROL RECOMMENDATIONS FOR XEKL 455 MT Sealed Air Smithfield, NSW 2164

This risk control recommendation is intended for guidance purpose only. Failing to ensure professional installation of the correct equipment which has regard to the specific circuit design and operation of the plant on which it is being installed may create a safety hazard. Accordingly, Venus Automation is not liable for any loss or injury, whether direct or indirect, flowing from the incorrect product installation.

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Accepted	Mr. Ken Koh Account Representative/National Technical Support	

DOCUMENT VERSION

Version	Date	Author	Description
1	10th April 2018	Raju Kotecha	Initial issue (V1)

Disclaimer:

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(3) Don't ignore the recommendations made within the report resulting from this assessment. As a result of this assessment and the findings made, the references providing critical information along with the recommendations made, regarding yet not limited to, works required and further investigation must be considered. These references and recommendations are made not to be ignored and if these are not examined and/or carried out, it must be realized that the hazardous situation of the machine/plant may remain vulnerable being new or existing.

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Scope: The scope of this report is for hazard identification, risk assessment and risk control recommendations for **XEKL 455 MT** as per AS 4024.1-2014. (Machinery safety standard). This does not include identifying hazards and risk control recommendations for explosive atmosphere.

This report and risk control recommendations are restricted to the guarding and structural requirements and recommendations on safety control system for the machine and **DO NOT** include detailed analysis of safe operating procedure or Information handbooks.

References:

1. NSW Work Health and Safety Act 2011
2. NSW Work Health and Safety Regulation 2011
3. AS 4024.1-2014 Safety of machinery Standard

1.1 Summary of Statutory Requirements- NSW

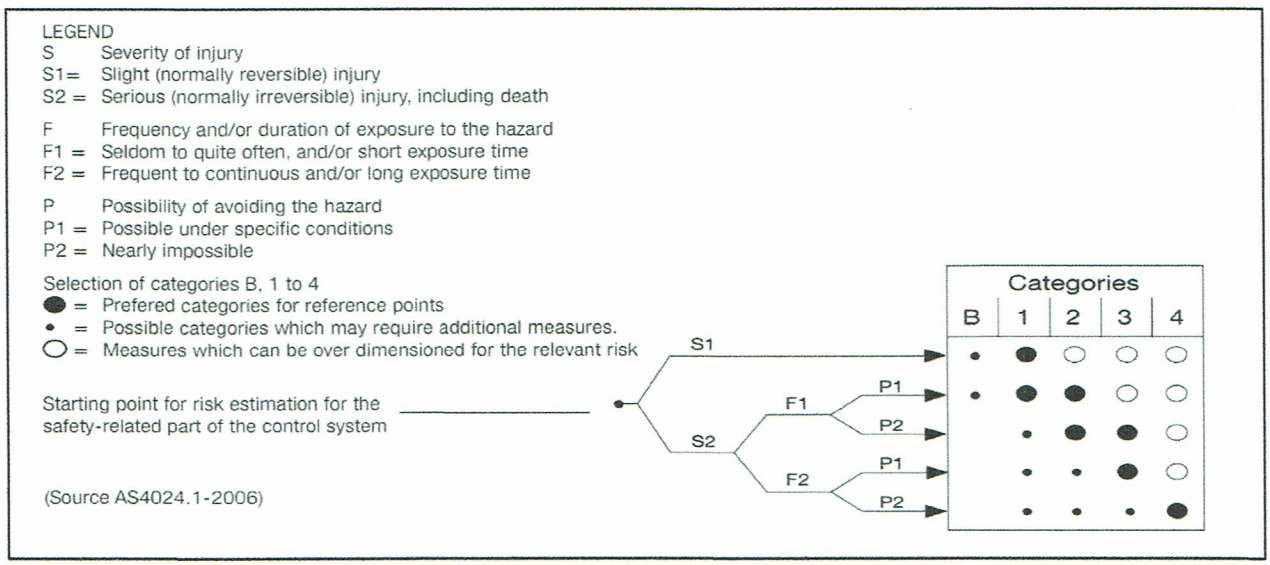
Work Health and Safety Act 2011:
The Work Health and Safety Act 2011 provides an obligation on employers, machine designers, manufactures and suppliers to ensure that machinery designed, manufacture or supplied is "safe and without risk to health when properly used."

Work Health & Safety Regulation 2011
Work Health and Safety Regulation has come into effect as of 1st January 2012. This regulation is binding to all states and territories of Australia. This regulation details the various responsibilities application to employers, designers, manufacturers and suppliers of plant (including machines) including identifying hazards and controlling risks.

Risk Assessment process:
The Risk Assessment process focuses on the risk control measures deemed to be necessary to ensure that any risk from exposure to the identified hazards associated with the normal use of this machine have been minimized. The Risk Assessment combines the criteria of hazard identification, risk assessment and application of risk control measures to ensure than identified hazards are eliminated, or if this is not practicable, to minimize the risks as far as is reasonably practicable.

Hazard Identification:
Hazard identification refers to identifying all reasonably foreseeable situations, or events, which could cause injury or illness. This hazard identification process employed for this report involved visual inspection of the machine and consultation with relevant personnel.

Risk Assessment:
The hazard identification and consequent assessment of the risks associated with those hazards are as detailed in the "Risk Assessment" table below. The risk associated with each hazard has been assessed to determine the appropriate safety category required, as prescribed in AS 4024.1501-2006: Design of safety related parts of control Systems-General principles for design. The risk estimation has been determined following the format of Australian Standard AS 4024.1301-2006 Principles of risk assessment, considering the combined factors of severity of possible harm (S), probability of occurrence of harm (P) and frequency and/or duration of exposure (F).



Risk Control and Recommendations:
The recommendations for risk control are given in accordance with the 'hierarchy of risk control' methods (Elimination, Substitution, Isolation, Engineering, Administrative controls and Personal Protective equipment) and also consideration of what is 'reasonably practicable' in terms of implementation of risk control measures.

1.11 Date of Assessment:	**14th March 2018**
1.12 Consultations with and Positions:	**Mr. Ken Koh (Account Representative, National Technical Support)**
1.13 Indicate Why Risk Assessment was Initiated: To ensure machine meets AS 4024.1:2014 and NSW WHS Act and Regulation 2011.	
1.14 Equipment description	**XEKL 455 MT** machine is used to dispense shrink wrap, cut shrink wrap with heated wire, and then shrink the wrap on the product and passed through roller conveyor passing through heated tunnel section.
1.15 Intended use and limits of machinery	Machine is intended to cut shrink wrap with heated wire before shrinking the wrap on to the product. Machine must be strictly used as per manufacturer's guidelines.
1.16 Accidents or incidences:	No known accidents or incidences
1.17 Energy sources on the machine	**415VAC, 3 Phase Electrics.**
1.18 Technical information: ☐ Machine layout ☐ Electrical Schematics ☐ Pneumatic schematics ☐ Hydraulic schematics No schematics is made available.	

1.19 Risk Analysis:

Determination of the Limits of Machinery

i. **Phases of Machine Life:**

Machine is in very good condition. It may be operational for many more years.

ii. **Limits of Machinery:**

Machine can cut and heat shrink wrap. It must be strictly used as per manufacturer's guidelines.

iii. **Range of Foreseeable Uses**

As per manufacturer's guidelines and operating manual.

iv. **Anticipated Level of Training**

Low level of training is required to operate the machine.

v. **Exposure of Other Persons**

Various people could be working in the vicinity and hence exposure to hazards is quite possible.

1.2 Machine Photos:

Photo 1: XEKL 455 MT: Machine overview

Hazard Identification and existing situation: XEKL 455 MT

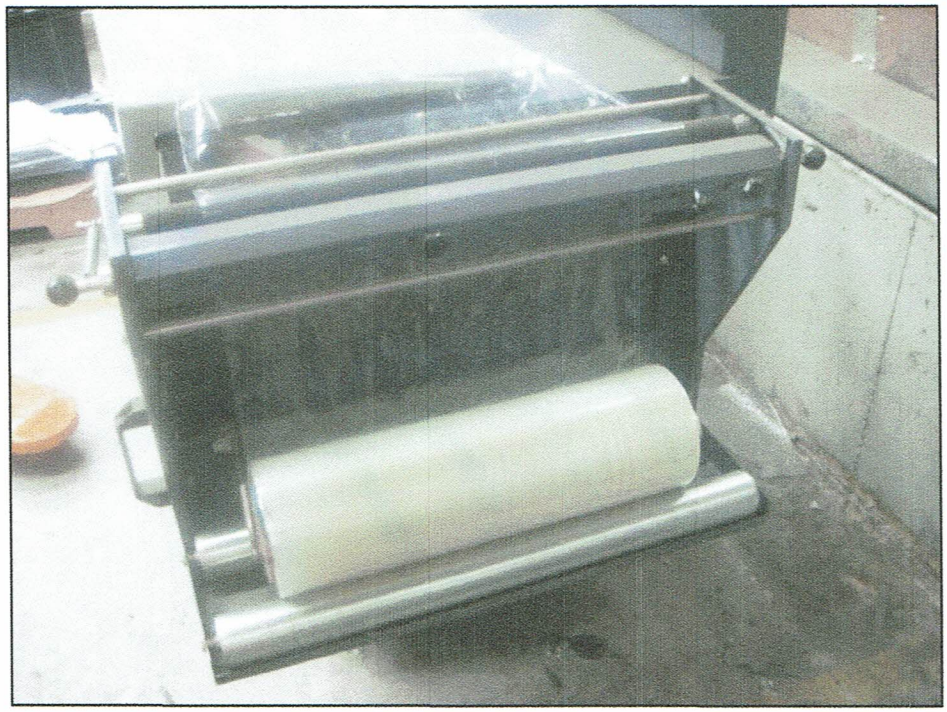


Photo 2: XEKL 455 MT: Shrink wrap unloader side

Photo 3: XEKL 455 MT: Shrink wrap platform

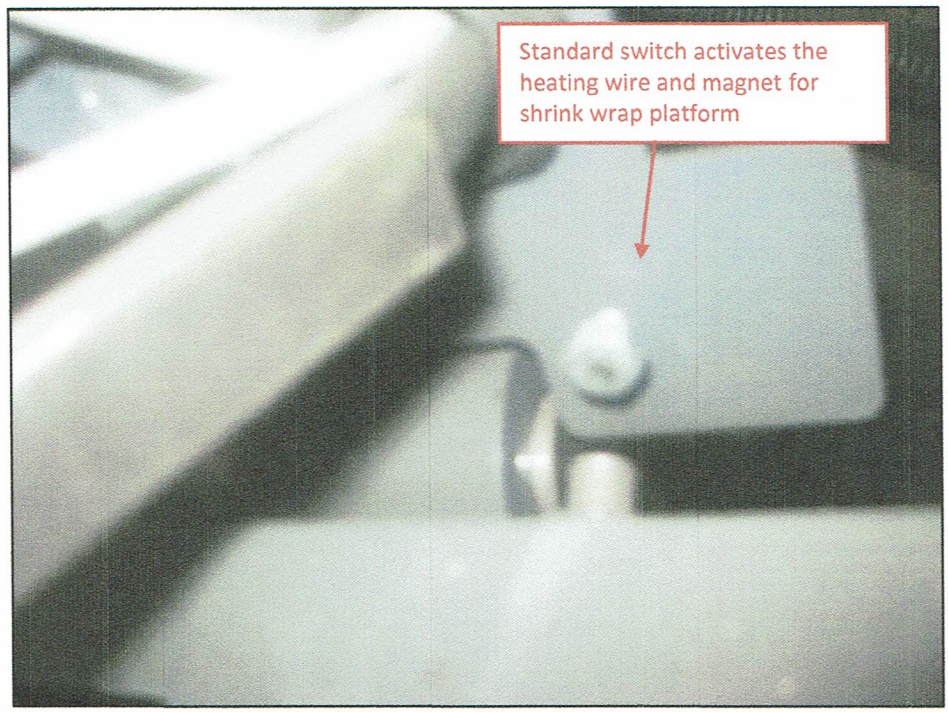


Photo 4: XEKL 455 MT: Standard switch activation

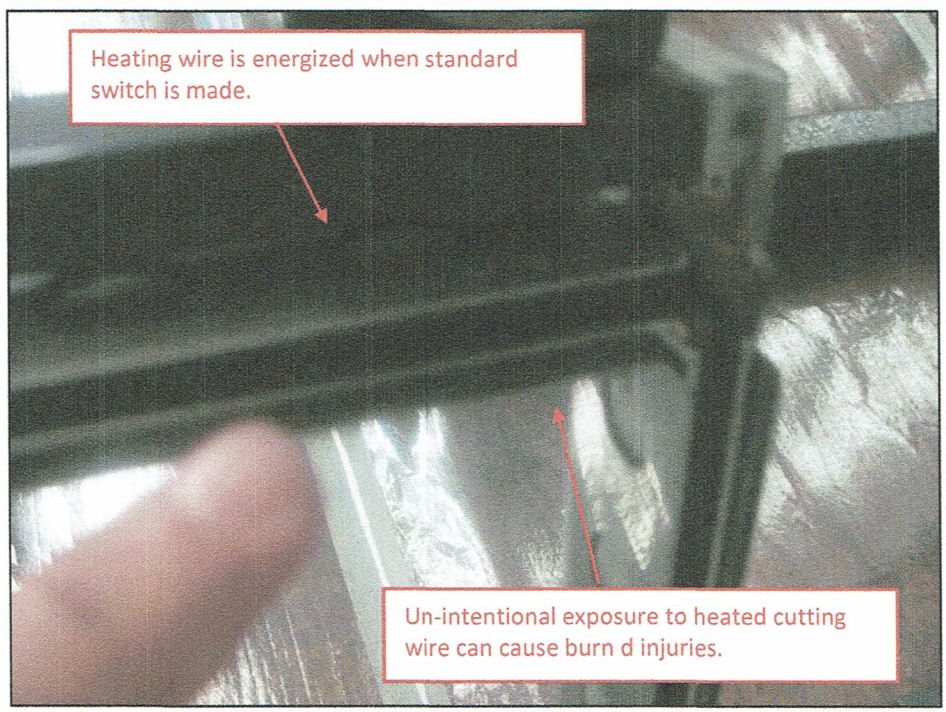


Photo 5: XEKL 455 MT: Heated cutting wire

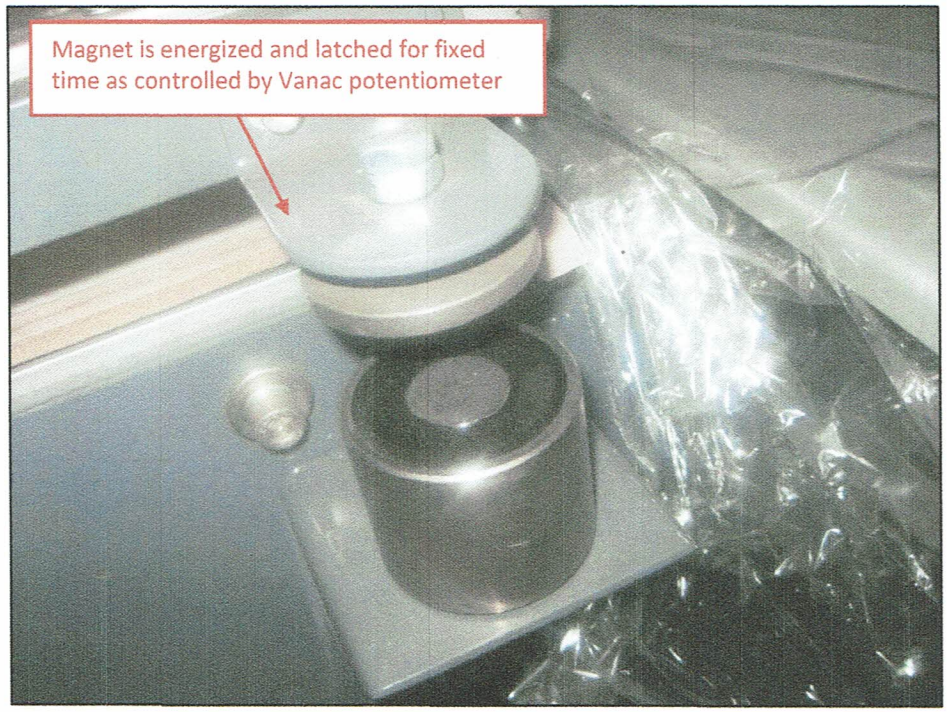


Photo 6: XEKL 455 MT: Solenoid locking magnets

Photo 7: XEKL 455 MT: Control panel with Vanac potentiometer

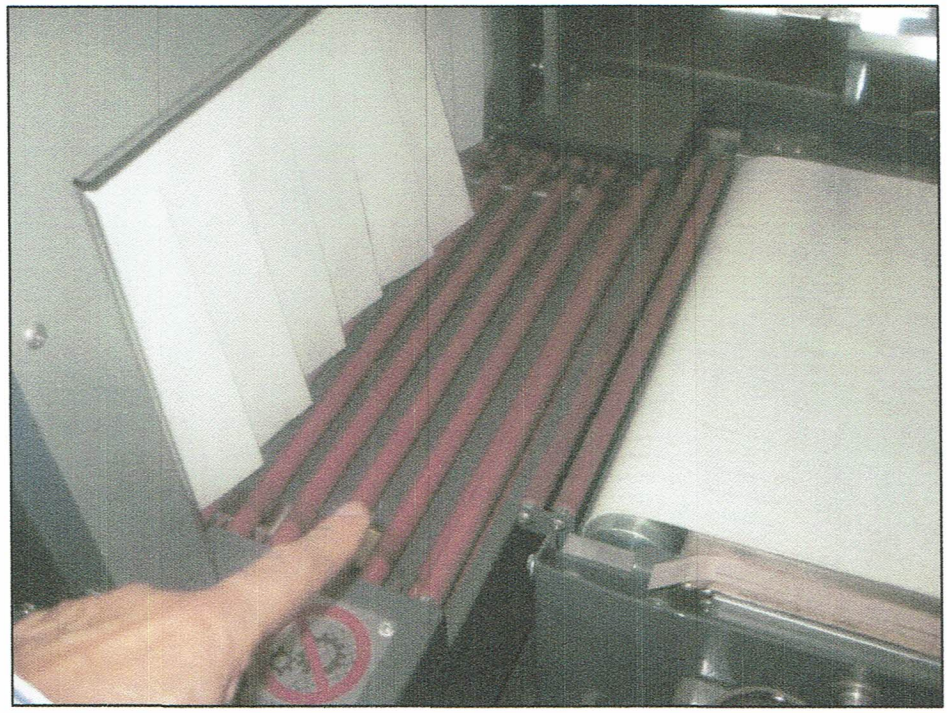


Photo 8: XEKL 455 MT: Transfer between shrink wrap platform and heating tunnel conveyor

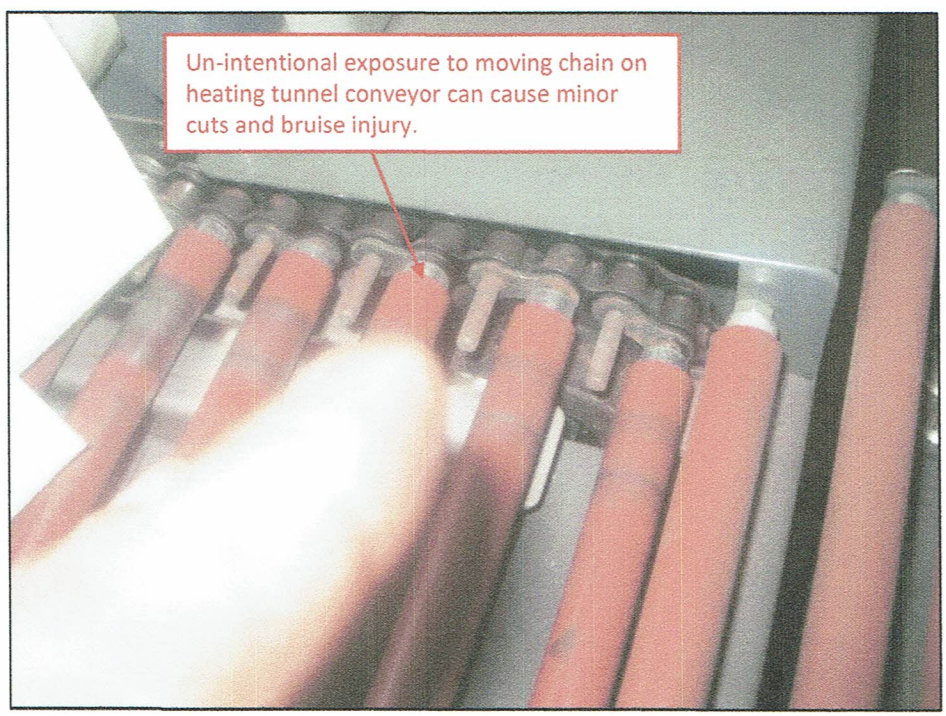


Photo 9: XEKL 455 MT: Chain on heating tunnel conveyor

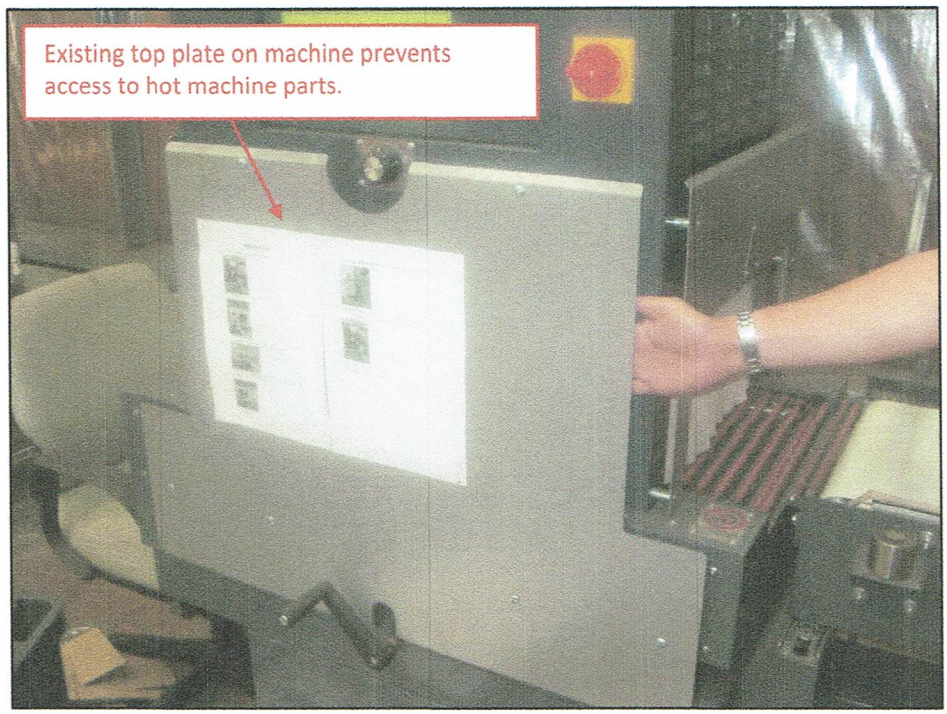


Photo 10: XEKL 455 MT: Existing top plate on machine

Photo 11: XEKL 455 MT: Lockable isolation switch

Photo 12: XEKL 455 MT: Heating tunnel controls with ON/OFF and conveyor speed

Photo 13: XEKL 455 MT: Heating tunnel out-feed view

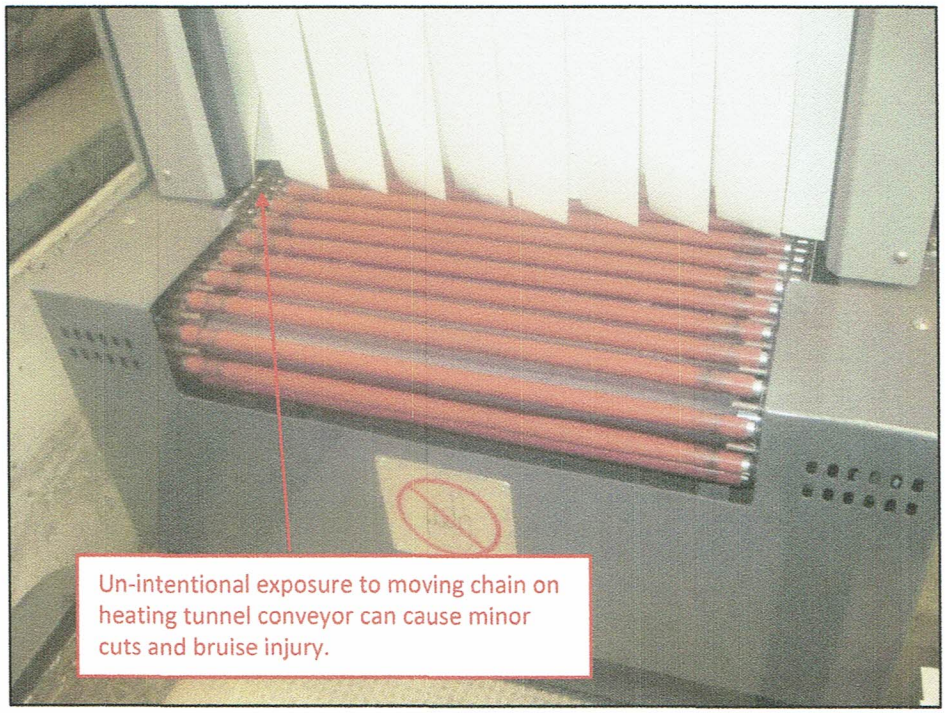


Photo 14: XEKL 455 MT: Heating tunnel out-feed view

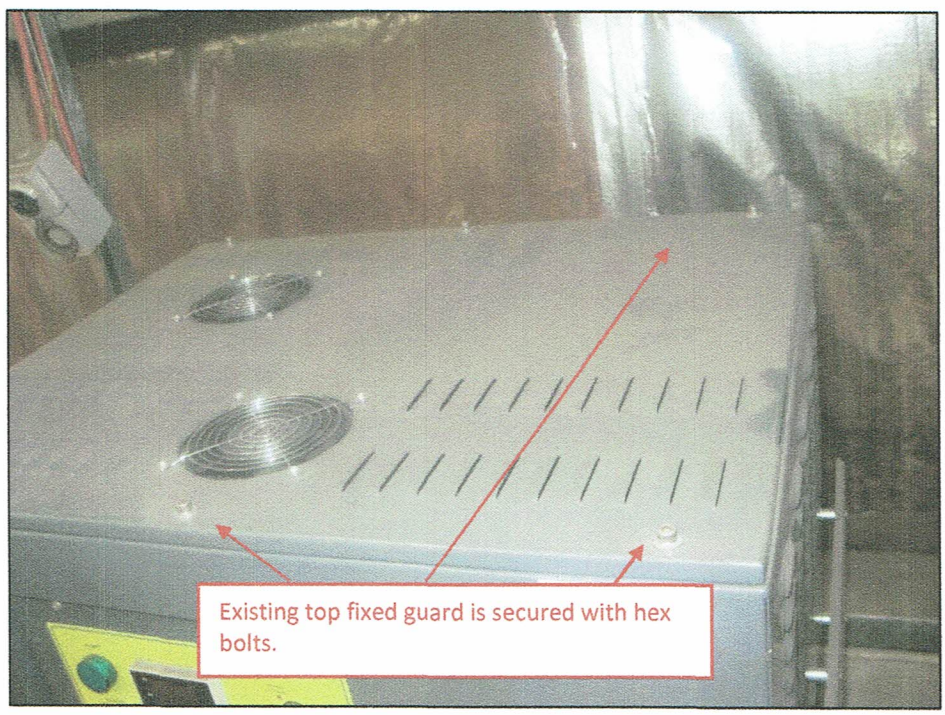


Photo 15: XEKL 455 MT: Fixed guards on top of heating tunnel

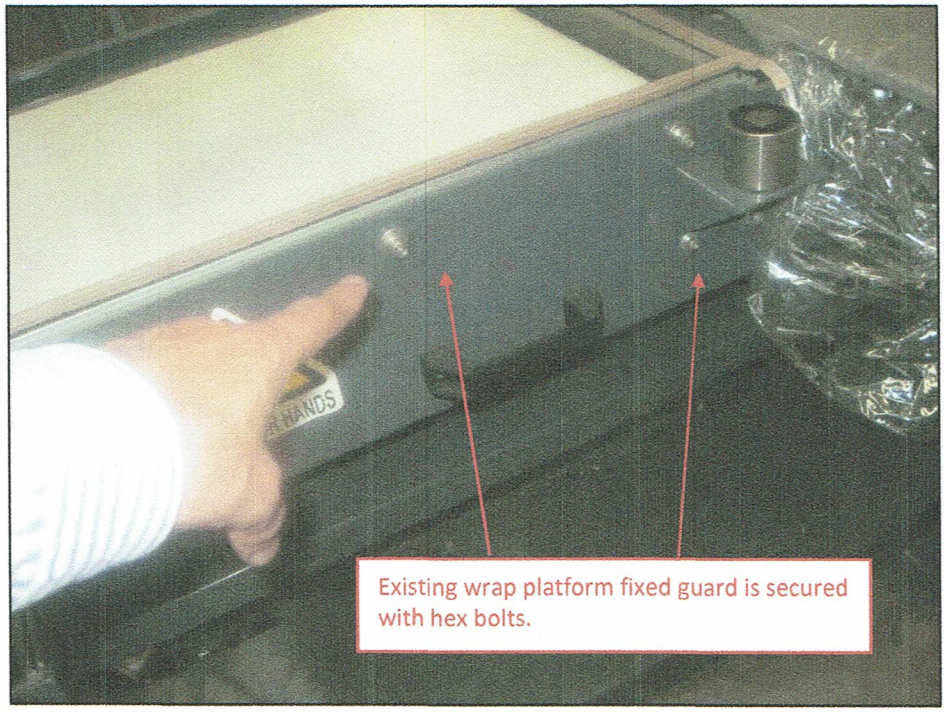


Photo 16: XEKL 455 MT: Fixed guard on front of wrap platform

Photo 17: XEKL 455 MT: Wall plug and socket with electrical switch

Hazards: Un-intentional exposure to heated cutting wire can cause minor burn injuries. Un-intentional exposure to chain on heating tunnel conveyor can cause minor cuts and bruise injury.

Risk Assessment: S1 – Slight, normally reversible injury

Existing situation: Shrink wrap rolls are manually loaded onto the side of the machines. Operator pulls the shrink wrap and covers product on both sides on the platform. Frame with cutting wire is manually lowered on to the covered product which cuts and seals the wrap on the product. Product is then manually placed on conveyor and passes through heating tunnel for shrinking the wrap.

Heating wire is energized after switch contact is made with frame in closed position. A magnet keeps the frame in locked position ensuring the heating wire has cooled down before it can be lifted up. Exposure to heating wire is quite unlikely.

Operators are exposed to the chain on roller conveyor on in-feed and out-feed roller which can cause minor cuts and bruise injury.

An Emergency stop wired to the machine control board is provided on the front. No testing of Emergency stop was carried out during the risk assessment process.

Recommendations:

1) It is recommended to check the functioning of Emergency stop at regular intervals and/or during maintenance.

2) Maintenance and removal of guards should be strictly done by trained personnel and/or sealed air technicians.

3) Supervisors, employees, casual workers, cleaners and anyone likely to be working with the machine should be trained and provided with information on the nature of the hazards and residual risk associated with the machinery. Machine must be strictly used as per operating manual.

4) Supervisors, employees, casual workers, cleaners and anyone likely to be working with the machine should be provided with appropriate PPE.

5) All signage to comply with the requirements of AS 1319-1994. Safety signs for the occupational environment.

Note:

1) All access gates and gaps in guarding should be covered as per Clause 189 of Workplace Health and Safety Regulation 2011. It stipulates that permanently fixed physical barrier should be implemented where access is not required for operation, cleaning and maintenance. Interlocking followed by presence sensing safeguarding of all guards (AS 4024.1601-2006) should be implemented where access is required for operation, cleaning and maintenance. If this is not practicable then the guard should be attached to the machine with fasteners which are removable only with the use of a tool. Access to this tool should be controlled by procedure. Bearing in mind that procedures are administrative risk control measures and as such, interlocking should be implemented where practicable (Clause 4.8, 4.9 and 6.4.4 of AS 4024.1601-2006).

1.3 Maintenance and LOTO: Machine is powered with removable power plug socket for electrical energy source. It is recommended to remove the plug from wall socket during maintenance thereby isolating the machine during maintenance. Lockable isolation switch is mandatory as per requirement of Clause 5.1 of AS 4024.1603-2006.

1.4 Residual risk: Ergonomic risks during manual handling of shrink wrap rolls.

1.5 Other hazards:

Electrical hazards: None identified

Hazards generated by noise: None identified

Hazards generated by vibration: None identified.

Hazards generated by materials and substances: None identified.

This risk assessment was performed on a standalone machine which was not part of an integrated system. The Customer has to perform a separate risk assessment once the machine is installed at its premises. It is important for the Customer to monitor risk controls and review risk assessments regularly.

Risk assessments should be reviewed on a periodic basis by the Customer to ensure any small or subtle changes that may have not have prompted a previous review have not had a cumulative and significant negative effect on safety. The combined effect of these small changes over a period of time also needs to be considered. Frequency of the periodic review should be based on the overall risk of the plant. Customer review of the risk assessment is required when there is a change in the process, relevant legal changes, and where a cause for concern has arisen. For any subsequent changes in machine operation mode and changes to existing machine and/or changes to safety related parts of control system should be followed up with fresh risk assessment by the customer.

Sign off (Authorised representative of the Customer):

System:	
Company Name:	
ABN Number:	
Name:	
Signature:	
Date:	

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