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MACHINE GUARDING

(SARMA Audit document January 2017 version 1 reference number:

Section A, Element 2, Item 2.6.6;

Section A, Element 8, Items 8.1.1. & 8.1.2;

Section B, Element 3, Items 3.1.3, 3.1.12 & 3.4;

Section B, Element 5, item 5.12 &

Section B, Element 9, Item 9.6)



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1. PURPOSE

The purpose of this standard is to ensure that risks associated with hazardous moving machine parts are identified, minimised and managed:

- 1.1. Machine guards are manufactured and installed to adequately cover, rotating or oscillating equipment;
- 1.2. Are adequate to prevent injury;
- 1.3. Provide maximum protection, easy to remove for maintenance and
- 1.4. Permanent and sufficiently substantial to withstand normal wear and tear.

2. SCOPE

- 2.1. This standard applies to **EMPLOYERS**.

3. RESPONSIBILITY AND ACCOUNTABILITY

- 3.1. The Designated Person/ Competent [\[SHE5.11-F02-4\]](#) is responsible for ensuring that all equipment is adequately guarded and that machine guards comply with the legal requirements;
- 3.2. Section 16(2) Appointees [\[SHE5.11-F02-3\]](#) are responsible to ensure that machine guarding is included in the SHE Representative Checklist and monthly checks are conducted in their areas of responsibility;
- 3.3. Section 16(2) Appointees [\[SHE5.11-F02-3\]](#) and contractors are responsible to ensure that machine guards are fitted post maintenance and that the machine guards are kept in a good condition;
- 3.4. Section 16(2) Appointees [\[SHE5.11-F02-3\]](#) are responsible to ensure that guards are checked before machines or systems are operated and
- 3.5. Section 16(2) Appointees [\[SHE5.11-F02-3\]](#) shall ensure risks associated with hazardous moving machine parts are identified / minimised and managed.


4. DEFINITIONS AND ABBREVIATION

- 4.1. A machine guard may be defined as a device, part or attachment on a machine that is designed to protect the user against injury from any moving part of the machine and
- 4.2. See manuals one to five.

5. LEGAL AND OTHER REQUIREMENTS

5.1. General

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5.1.1.	SHE5.03-F01	Machines within normal reach
5.1.2.	SHE5.03-F01	Guards should be maintained
5.1.3.	SHE5.03-F01	GMR 3 – Safeguarding
5.1.4.	SHE5.03-F01	GMR 6 – Start / stop devices
5.1.5	SHE5.03-F01	DMR 2 – 17, 19, 20(1)(a)

5.2. Legal Reference.

5.2.1. Legal Register.

5.3. Other Requirements.

6. RECORDS

Rec. Nr	Reference Nr	Description	Storage Space	Retention Time
6.1.	EMPLOYERS [SHE0.00-F03]	Action deviation records		
6.2.	EMPLOYERS [SHE5.40-F02]	Health and Safety Rep Inspections		
6.3.	EMPLOYERS [SHE5.13-F04]	Minutes of meetings		


7. PROCEDURE

7.1. Machine guards in general

- 7.1.1. Isolators, for maintenance purposes should be located in easily accessible points and so designed to accommodate an approved "lock out" mechanism whereby a lock and/or multi-lock calliper can be fitted and
- 7.1.2. Conveyor belts system must have accessible pull cords on both sides for emergency stop.

7.2. STANDARDS ARE MET WHEN

- 7.2.1. Risks associated with hazardous moving machine parts have been identified **[SHE5.02-F02-1]**, minimised and managed;
- 7.2.2. Every dangerous moving part of machinery is securely guarded;
- 7.2.3. Moving machine parts are fully enclosed, such that no part of the body could be accidentally injured;

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7.2.4. All guards must be of substantial construction and must be kept in position during normal operation of the machinery and

7.2.5. Machinery identified that must have interlocks cannot be operated unless guards are in place.

7.3. **GUARDS AND GUARDING DEVICES**

The following are examples of types of guards used and their criteria. A guard should consist of one or several of these examples together:

7.3.1. Designs that eliminate exposed dangerous parts;

7.3.2. Enclosures, covers or barricades that prevent contact with dangerous or moving parts, in and around;

7.3.3. Stoppage of continuous machine motion so arranged that if the hands or other parts of the operators' body remain in the danger zone after it is started, its continued function would be prevented;

7.3.4. Combinations of devices that provide more complete safeguarding and

7.3.5. Miscellaneous aids that assist in the safeguarding such as alarms, hooters, hand tools.

7.4 **ENGINEERING STANDARD – CONSTRUCTION OF GUARDS**

7.5. **GENERAL**

All guards should be designed and constructed in such a manner that it eliminates the source of danger from any part of the human body and prevents any part of the body being inserted/touched by any part of the machine, i.e. chains, revolving spindles, sprocket, or any other moving part.

7.6. **GUARD CONSTRUCTION**

7.6.1. Design

The guard should be so designed that it does not constitute a danger itself. Points to take note of in the design are:

7.6.1.1. Sharp or rough edges and

7.6.1.2. Guard mountings should be compatible with the guard duty and strength


7.6.2. Material of Construction

The following point should be considered when selecting materials:

7.6.2.1. Its structural strength in terms of preventing flying objects in cases of disintegration of parts guarded;

7.6.2.2. Its weight in terms of its removability and replace ability for maintenance;

7.6.2.3. Its compatibility with the process in terms of contamination of the products produced and

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- 7.6.2.4.** Its ability to maintain its structural properties when cleaning and sterilising agents come into contact with it.

The following also refers to this standard and can be useful when designing and constructing guards:

- The Occupational Health and Safety Act No. 85 of 1993 and
- General Machinery Regulation R 3 – Safe Guarding of Machinery

8. ASSOCIATED DOCUMENTATION

No.	Description	Document Number
8.1.	Machine Guarding survey.	
8.2.	Various Plant & SHE Rep checklists.	