

# DRAFT Machinery – Assessment Inspector Hazardsheet

The 5 steps of assessment can be used to systematically work through how the workplace is managing machines as a risk, and whether they meet their obligations under the Health and Safety in Employment Act 1992.



## STEP 1. IDENTIFYING POTENTIAL HAZARDS

**Look out for:** Moving parts, unguarded machines, sharp edges, acting forces, stored energy.

**Mechanical hazards:** Drawing in, crushing, friction, abrasion, entanglement, cutting, trapping, impact, shearing, stabbing, vibration, projectiles, falling objects

**Operational hazards:** start up, emergency stop, blockages, emergencies, cleaning, maintenance and repair.

**Ergonomic hazards:** Manual handling, awkward positioning, reach, layout, design

**Electrical hazards:** Exposed wiring, energised machinery during maintenance

**Environmental hazards:** Falls from height, lighting, access, machine stability, confined space, fumes, dust, fire, radiation

**Organisational hazards:** Fatigue, shift work, untrained operators

**Knowledge and understanding:** AS4024, 'BPG – Safe Use of Machinery' (2014).

How has the employer identified hazards? Do they have a system in place that uses manufacturer's information and specifications, approved codes, guidance and accident investigations? Have they done a task/area analysis of machines? Have they involved employees in the process?

## STEP 2. ASSESSING THE SIGNIFICANCE OF THE HAZARD

**Has the employer taken the following into account?**

**The nature of the operations:** The length and frequency of use of machines.

**Likelihood of an occurrence:** Would an operator have the ability to avoid the hazard, history of injury, proximity of person to machine, frequency of contact with machine due to operation, maintenance or cleaning.

**Seriousness of potential injury:** Consider the speeds of moving parts, sharpness of edges or points, whether increased injury would occur due to trapping or entanglement, part of the body that could come into contact.

## STEP 3. IMPLEMENTING CONTROLS

Hierarchy of controls	Controls	
<b>Eliminate</b>	<ul style="list-style-type: none"> <li>Design or modification</li> <li>Substitution</li> <li>Automate handling</li> </ul>	<ul style="list-style-type: none"> <li>Eliminate pinch points</li> <li>Increase clearances</li> <li>Remove forces</li> </ul>
<b>Isolate</b>	<ul style="list-style-type: none"> <li>Safe by position</li> <li>Fixed guard</li> <li>Interlock guard</li> <li>Interlock distance bars</li> </ul>	<ul style="list-style-type: none"> <li>Failsafe interlocking</li> <li>Common faults and failures system</li> </ul>
<b>Minimise (level 1)</b>	<ul style="list-style-type: none"> <li>Presence sensing device</li> <li>Light curtain, laser scanner, safety mat</li> <li>Light beacons, strobe lights and horns</li> </ul>	<ul style="list-style-type: none"> <li>Lock-out systems</li> <li>Two-handed controls</li> <li>Emergency stop</li> <li>Computer warnings</li> </ul>
<b>Minimise (level 2)</b>	<ul style="list-style-type: none"> <li>Safe operating procedures</li> <li>Information, training and supervision (see below)</li> <li>Electrical tagging</li> </ul>	<ul style="list-style-type: none"> <li>Signage</li> <li>PPE</li> <li>Procedures for maintenance, cleaning and repair (r13)</li> </ul>

### Training, information and supervision

**Has the employer trained operators, managers, supervisors, purchasers, staff who input into workplace design?** Training needs to be refreshed at regular intervals and elements reinforced following accidents or violations of rules.

Clear information and training should be provided to all operators about:

- how to check and adjust the machine before starting it
- how to stop and start the machine
- purpose of guards and other safety devices
- correct use and adjustment of guards
- location and operation of controls

- how the machine works and
- actual and potential hazards and appropriate ways to control them
- correct work methods to be used
- how to recognise faults that could cause harm
- limitations and capabilities of the machine
- emergency and lock-out procedures.

Appropriate supervision is essential until competency can be proven. Qualifications and previous training do not necessarily mean an operator is competent to use machinery.

Contractors and visitors should be inducted, competency checked and made aware of hazards on site.

## STEP 4. MONITORING AND MEASURING

### a) Employers should undertake regular inspections/audits of:

#### i) Machines

- What system does the employer have to regularly inspect machines (e.g. pre-start checks), including the inspection of guards and safety devices?
- Have control measures been implemented as planned. If not, why not? What is happening in the meantime?
- Are the controls adequate? Does the control comply with the hierarchy of controls? Have any new hazards been introduced or existing hazards been made worse by the controls? Are safety interlocks failsafe?
- Log books may be used to monitor breakdowns which can help inform preventative maintenance.

#### ii) People

- Safety observations can be used to monitor if operators are following safe operating procedures (e.g. keeping guards in place).
- Are the controls working?

#### iii) Workplace

- Regular workplace walkthroughs should take place to ensure housekeeping standards are maintained e.g. areas in and around machines and floors are kept clear of debris.
- Is lighting and ventilation adequate for the task?
- Has all electrical equipment been tagged?

### b) Health monitoring

- Appropriate health tests should be determined in relation to any health risks present e.g. blood and respiratory tests (fumes and dust), audiometry (noise), discomfort surveys (reach and vibration). Duty-holders could discuss potential monitoring requirements with a qualified occupational health professional.
- Health monitoring can be included in employment agreements.
- All practicable steps should be taken to gain employees' consent to health monitoring where it is required. If an employee refuses, the duty-holder should think about whether they should be removed from the risk area. Duty-holders must provide the results of any health testing to the employee.

### c) Investigating accidents/incidents

- Where a person is harmed at work, procedures should be in place to investigate why, how, what, who and where the incident happened. Any accidents must be recorded in an accident register, which should be reviewed on regular basis to spot trends and patterns regarding people, processes, work areas, plant and equipment.

### d) Worker engagement

- Operational staff are instrumental to continuous hazard identification. Staff should be encouraged to inform managers of hazards and incidents they come across and any noticeable deterioration to health.
- Talking point sessions about machine hazards at the workplace are a great way to bring health and safety to the attention of workers.

## STEP 5. REVIEWING THE EFFECTIVENESS OF CONTROLS AND SYSTEMS

Review is central to continual learning and improvement of health and safety outcomes.

- Are controls reviewed regularly to check that they are still adequate?
- Is corrective action taken when incidents/accidents/audits/inspections/ health monitoring show current controls aren't adequate?
- Are arrangements reviewed when introducing new equipment, plant or processes?

## DOCUMENTATION TO REQUEST AND VERIFY

The following examples are documents a workplace could produce as evidence that they have met their legal obligations.

Job safety analysis	Inspection/audit records	Maintenance records	Training records
Investigation reports	Incident/accident register	Breakdown log books	Health test results
Manufacturers information	Safe operating procedures	Health and safety policy	Employee surveys
Corrective action reports	Manufacturers specifications	Modification records	SOPS for maintenance