



Pocket Guide 21 (front) - **Biomechanical energies**

*Manual handling, confined space escape,*

Uncontrolled energies might cause damage to:

**people**

sprains, strains, back injuries, overexertion

**equipment**

through poor operation, bad decisions impacting on the equipment

**production**

slowdown due to loss of staff

**environment**

spillage / contamination due to handling etc failures



Pocket Guide 2I (back) -

## **Biomechanical energies risk checks**

### **Workplace check**

- Standard workplace check
- Changes in location or conditions such as lighting, weather and rough travelways
- Normal and possible walkways suitable dimensions
- Short cuts identified and designed around minimal wasted human energy
- Floor/walking surfaces suitable
- Confined space planning

### **Equipment check**

- Manual handling devices available, maintained, readily understood, user-friendly
- Equipment and components suitable sizes

### **People**

- Training for manual handling
- Fitness, work pressure, personal needs/ protection, overuse of any muscle group avoided
- Contractors or new people
- Help known and available on request

### **Procedures**

- Variation in task, postures, and avoidance of twisting or misuse of backs

## Pocket Guide 2C (front) - **Electrical energies and hazards**

– **Energy from apparatus such as** *electrical switchboards, control panels, power points, light fittings, switches, power tools, flexible leads, power boards, during for example inspection and maintenance of electrical equipment*

**Hazards for people:** *inappropriate exposure to energised electrical equipment (eg cable fault/contacts, cabinet open) isolation error (tagging system)*

**Hazards for equipment:** *electrical equipment failure, short circuiting causing fires on equipment*

**Hazards for production:** *supply trips / fails / causes shutdown, inadequate supply causes process slowdown*

**Hazards for the environment:** *fire*

## Pocket Guide 2C (back) - **Electrical risk checks**

### **Workplace check:**

- Standard workplace check
- Wet work area; other people around; vehicles; flammable materials?
- Registration of portable apparatus; explosion protection requirements; fire precautions; earth fault protection check; gases at battery stations; any corrosive chemicals;
- Underground cables, overhead powerlines

### **Equipment check:**

- Portable tools double insulated, rated, registered if required, with soundly insulated leads, plugs, tested, tagged?
- Leads, wires cables protected from damage
- Proper power outlets

### **People:**

- Training, experience, fitness, work pressure
- Contractors and coordination with others

### **Procedures:**

- Permit required?
- Isolation, testing for residual current, tags and locks
- High voltage switching procedure
- Check flameproof integrity
- Clean-up, replace guards, test and secure work site
- Power trip / failure procedure

Pocket Guide 2D (front) - **Mechanical energies**

*Mobile mechanical equipment such as trucks, loaders, dozers, utes, rail, winders, drills, shovels, excavator, and portable*

*equipment such as compressors*

*Fixed mechanical equipment such as conveyor, crusher, screens*

– **Uncontrolled energies might cause damage to: people**

crushed or struck by moving or flying object  
caught between moving objects, entanglement  
vibration causing damage to backs, neck etc

**equipment**

collision, breakdown, runaway, breakages, vibration

**production**

fails and causes shutdown  
inadequate energy causes slowdown

**environment**

physical damage

*Check safety devices, work areas and safe operating procedures especially communicating changes – consider the lifecycle of the equipment from design through a functional use specification to manufacture & supply, introduction on site, training, use, maintenance, modification, decommissioning to replacement*

## Pocket Guide 2D (back) - **Mechanical risk checks**

### **Workplace check**

- Standard workplace check
- Danger zones/no-go areas, stable ground?
- What workplace changes might happen, including weather/lighting changes?

### **Equipment check**

- Is this new equipment/trial run required?
- Pre-start checks and brake/safety device tests
- Hydraulic and fuel line leaks, spills
- Maintenance, guards replaced, no rags etc
- Warning devices for others in the area
- Emergency shut off switches
- Ratings (eg Safe Working Loads) of equipment displayed and loads checked
- What parts might hurt people eg sharp edges, low overhangs, falls from, hot surfaces

### **People**

- Training, experience, fitness, work pressure
- Contractors and coordination with others
- Pedestrians in the area
- Coordination of mobile plant operating areas including parking, servicing

### **Procedures**

- Permit required, excavation shoring?
- Pressure release, isolation, testing for residual energy, tags and locks, leaks
- Communicating between equipment operators, especially about changes

Pocket Guide 2E (front) - **Chemicals and dust energies**

*Chemicals and dusts that can affect health such as silica, asbestos, lead & other dusts*

*Explosives*

*Flammable gases such as acetylene, LPG*

*Chemical fumes such as from welding/cutting, grinding, glues/grouts, diesels.*

*Chemicals such as petrol, diesel, oils, degreasers, solvents, chlorine, pesticides*

*Chemicals that may affect health such as cleaners, oils/lubes, solvents, degreaser, spray painting*

*Gases such as H<sub>2</sub>S, C<sub>0</sub>, CO<sub>2</sub> (including general ventilation)*

*Explosive dusts such as coal & sulphide ore dusts*

Uncontrolled energies might cause harm to:

**people**

burns, skin irritation, ingestion, inspiration, toxic atmosphere (eg in confined spaces), explosion (eg explosives, mixing incompatible chemicals)

**equipment**

fire, internal damage, corrosion

**production**

dust affects equipment

not enough/too much/wrong type chemicals causes delays or shutdown

**environment**

spillage, contamination, pollution, damage/destruction to natural environment, poor visibility

## Pocket Guide 2E (back) - **Chemical and dust risk checks**

### **Workplace check**

- Standard workplace check
- Changes in location or conditions such as lighting, weather
- Protection required, personal hygiene facilities

### **Equipment check**

- Corrosion, dust impacts, maintenance
- Intrinsic safety required for explosive atmospheres

### **People**

- Specific instruction and experience
- Fitness, work pressure, personal protection equipment
- Contractors and coordination with others

### **Procedures**

- Safe working procedures for mixing chemicals
- Permit required eg for confined spaces or in explosive dust areas?
- Register of chemicals/harmful substances
- Material safety data sheet instructions
- Emergency treatment and actions
- Medical checks



## Pocket Guide 2F (front) - **Pressure (fluids/gases)**

### **Energies**

#### **Pressures arising from**

*Water (including in pipes, dams, adjacent mines/pits),*

*Foul air (including gases in containers, adjacent workings),*

*Hydraulic, pneumatic or water pressure from pump stations and reticulation or equipment and storage*

*Stored pressure/energy such as accumulators, spring/tension devices/ steam from overheated pumps*

Uncontrolled energies might cause harm to:

### **people**

penetration of fluids

crushed, breathing problems from not enough air

drowning by flooding

unwanted movement

### **equipment**

not enough pressure / can't perform

release causes breakage

### **production**

equipment damage or loss— equipment failure / shutdown

no—water / no—air shutdown

too much shutdown

### **environment**

pressure releases dust / fuel / oil / dirty water / air water inrush /

inundation

Pocket Guide 2F (back) -

## **Pressure (fluids/gases) risk checks**

### **Workplace check**

- Standard workplace check; Changes in location or conditions such as lighting, weather
- Protection required eg cages for servicing tyres with split rims,

### **Equipment check**

- Thermal insulation, splash barriers, guards
- Hot/freezing pipes identified & marked - with shields available when working nearby
- Abnormal situations identified eg pump overheating due to blocked pipes

### **People**

- Fitness (heat exposure/acclimatisation), work pressure, heat stress reduction, hydration levels, water available
- Contractors or new people awareness, skills, experience
- Suitable footwear for working around molten metal

### **Procedures**

- Permit required eg for hot work?
- Cool rest areas identified

## Pocket Guide 2G (front) - **Radiation energies**

### *Radiation such as sunshine, welding, measurement device*

Uncontrolled energies might cause harm to:

#### **people**

burns, eye problems (eg welding flash), internal problems

#### **equipment**

equipment malfunction

#### **production**

source (gauge) fails and causes eg bin overflow

#### **environment**

contamination

## Pocket Guide 2G (back) - **Radiation risk checks**

### **Workplace check**

- Standard workplace check
- Changes in location or conditions such as lighting, weather
- Sunburn protection, microwave etc protection
- Protection of release of radioactive materials eg from spent devices/sources

### **Equipment check**

- Measurement gauges/ lasers, cables, wires and leads in good condition
- Equipment /clothing suitable for sunburn protection
- High frequency heating equipment and microwaves properly fitted and functioning normally?
- Protection from electric arc welding ultraviolet (UV) radiation

### **People**

- Fitness, work pressure, personal protection, creams and (shade/clothing) equipment
- Contractors or new people
- PPE, especially for ultraviolet radiation from sun or welding

### **Procedures**

- Permit required, eg for working on radioactive sources and equipment?
- Register of radiation sources
- Medical checks

## Pocket Guide 2H (front) - **Thermal energies**

*Thermal heat sources such as electrical apparatus, engines, pumps, friction points such as bearings, idlers.*

Uncontrolled energies might cause damage to:

### **people**

burns, heat exhaustion, cold, frostbite

### **equipment**

overheating, freezing

### **production**

overheating or freezing shutdown

### **environment**

fire

## Pocket Guide 2H (back) - **Thermal risk checks**

### **Workplace check**

- Standard workplace check and possible changes identified
- Heat sources identified, and suitable airflows arranged
- Risk of hypothermia if people get wet or chilled for longer than expected
- Molten metals

### **Equipment check**

- Thermal insulation, splash barriers, guards
- Hot/freezing pipes identified & marked — with shields available when working nearby
- Abnormal situations identified eg pump overheating due to blocked pipes

### **People**

- Fitness (heat exposure/acclimatisation), work pressure, heat stress reduction, hydration levels, water available
- Contractors or new people awareness, skills, experience
- Suitable footwear for working around molten metal

### **Procedures**

- Permit required eg for hot work?
- Cool rest areas identified

## Pocket Guide 2J (front) - **Noise/vibration energies**

***Noise / vibration sources such as noise from equipment, tools, tasks and vibrations from mobile/fixed plant including travelling on rough roads.***

Uncontrolled energies might cause damage to:

### **people**

noise—induced hearing loss

vibration injuries,

### **equipment**

vibration—induced structural fatigue failures

maintenance inadequacies reduce machine availability / efficiency in the long—run

### **production**

slowdown because people won't work there

### **environment**

complaints from neighbours

## Pocket Guide 2J (back) - **Noise/vibration risk checks**

### **Workplace check**

- Standard workplace check and possible changes
- Noise sources identified, and suitable airflows ?
- Rough travel ways inducing vibration for mobile plant operators – especially unexpected bad road conditions or direction changes
- Lighting to illuminate bad road conditions

### **Equipment check**

- Noise insulation, pressure release controls
- Vibration damping, vehicle design & activity
- Seat design, suspension, and their maintenance (especially seats not bottoming-out)
- Exposure during maintenance
- Cabin layout, design, orientation, isolation from machine frame
- Rock-breaking equipment selection & shotfiring standards (for fragmentation)

### **People**

- Contractors or new people aware of noise-induced hearing loss potential, or vibration-induced injury
- Suitable PPE
- Vehicle driver skills & awareness

### **Procedures**

- Coordination of work in the near vicinity
- Vehicle speed and use
- Task rotation / breaks to reduce exposure



Pocket Guide 2K (front) - **Biological energies**

*Bacteria, eg from air cooling towers, poor hygiene*

Uncontrolled energies might cause damage to:

**people**

illness or disease

**equipment**

poor operation by ill people

**production**

shutdown due to lack of people

**environment**

spread of disease

Pocket Guide 2K (back) -

## **Biological energies risk checks**

### **Workplace check**

- Standard workplace check
- Animal, living organism presence
- Fungal presence, including fungus on bat droppings in underground mines (risk of histoplasmosis)
- Stagnant water, especially in underground workings
- Sanitation facilities

### **Equipment check**

- Cooling tower checks for Legionella bacteria
- Potable drinking water supply

### **People**

- Training for exposure to biological hazards
- Contractors or new people
- Notification to others
- Eating, drinking facilities up to standard

### **Procedures**

- Hygiene, rubbish removal, housekeeping, sanitation
- Reduction of exposure to biological risks, and notification to others if working alone or in remote locations (including abandoned underground mines)
- First aid, medical treatment in an emergency

Pocket Guide 2L (front) - **Gravitational energies**

*Gravitational sources such as roof / backs, ribs, sides, floor, high wall / pit wall (collapse or slump of wall, materials falling off, equipment or people going over), slopes / grades / ramps (where equipment can move in an uncontrolled manner), falls of things such as components, tools, structures, and falls of persons from heights greater than 2 metres*

Uncontrolled energies might cause damage to:

**people**

falls from heights  
struck by falling object

**equipment**

rollover, collapse  
damage from fall or falling object

**production**

rockfalls  
slowdown or shutdown or closure

**environment**

subsidence, slumping

## Pocket Guide 2L (back) - **Gravitational risk checks**

### **Workplace check**

- Standard workplace check and possible changes
- Steep slopes, high banks
- Ground / strata stability, geological structures such as faults, major jointing, shear zones, changes in geology
- Water in joints, passes, broken ground
- Uneven, soft, loose surfaces

### **Equipment check**

- Equipment check
- Abnormal situations identified
- Hot work with unprotected oxy-acetylene bottles below
- Mobile plant run-away risk? Toppling over trenches/benches
- Equipment unplanned movement during work
- Bin & structure strength / integrity during installation, filling

### **People**

- Contractors or new people
- Risk of falling? Fall arrest protection. Risk of going over edge of excavation?

### **Procedures**

- Work overhead or below?
- Prevention of material falling (out of containers, off stages/scaffolding, after being released/cut
- Conveyor run-back, especially if loaded

Pocket Guide 1A

**Identify, assess, control – and keep under control . . .**

. . . for each of

- 1. the working environment**
- 2. equipment (including gear and materials)**
- 3. people (including contractors)**
- 4. processes (including procedures)**

. . . & what is our

- 1. aim, intent** (ultimate objective)?
- 2. approach** (or plan)?
- 3. deployment** (who's doing what, when)?
- 4. results** (how will we know if we've succeeded)?
- 5. review or improvement action**
  - what went well
  - what could we do better next time?



Pocket Guide 1B - **Record diary**

Record / diary

The date & task

Who was involved in the task review, risk assessment and action plan?



The main concerns



Key actions / precautions





Pocket Guide 1C (front) - **Risk assessment & JSA**

**Job steps** – what the main steps from beginning to end?


**Hazards** – what are the main hazards for each step?

**Main concerns** – or risk assessment



**Precautions** – important actions, or risk controls

**Monitoring** – what signs will there be that the danger is coming before it hurts us?



Pocket Guide 1C (back) - **Procedures (SWP / SWMS)**

**Workplace changes** – before or during job?

**Special safety devices** on the equipment

Special **training, experience, refresher**

**Permits , procedures**

Confirm precautions among the team & **allocate responsibilities** for implementing or monitoring precautions

**Communicate to others?**

Is a **major hazard plan** required (for precautions that will take more than a month to plan, design, implement, test and improve)?

Does the task / precautions get added to the site's **annual safety improvement plan?**




Pocket Guide 1D - **Work environment**

- 1. What's different about the job location today?**
- 2. Is access to and from the job clear?**
- 3. Are there two exits?**
- 4. Is it a good working surface?**
- 5. Is housekeeping up to standard?**
- 6. What about stairs, ladders & platforms?**
- 7. Is noise, lighting & weather ok / likely to change?**
- 8. How good is our footwear?**
- 9. What special equipment / gear / materials is required?**



Pocket Guide 1E - **Equipment / gear**

- 1. Was it designed for this job?**
  - 2. What could go wrong with the equipment/  
gear / materials?**
  - 3. Is it safe & healthy to use?**
  - 4. Pre-start check – especially for safety-critical  
items likebrakes & steering (& emergency back-up)**
  - 5. Who will I check with or tell about maintenance?**
  - 6. Do I need anything else with this plant / gear?**
  - 7. What safety devices have been fitted?**
  - 8. Where will I be working with it and will that  
change?**
  - 9. Who's going to operate it & who else is around it?**
- 

Pocket Guide 1F - **People (incl. contractors)**

- 1. New employees, young people, contractors, visitors may need a second thought**
- 2. Do we have training & experience to do this job?**
- 3. Do we need a permit?**
- 4. Is everyone fit today?**
- 5. Let's do a manual handling check**
- 6. Should we check with anyone?**

*Has any of us dealt with this problem before?*

*Is anyone feeling under any particular pressure?*

## Pocket Guide 1G - **Process (and procedures)**

- 1. Is there a less risky option?**
- 2. Can we put a hard barrier in place between people and the hazard?**
- 3. Can we change the job around to reduce exposure to the hazard?**
- 4. Do we need better personal protective equipment (PPE)?**
- 5. Are there welfare facilities available, eg washing down in case of contamination or first aid?**
- 6. What do we do in case of emergency**  
*(see Pocket Guide 1I (front, back))*

*How do we discuss and report hazards?*  
*(see Pocket Guide 1H (front, back))*

Pocket Guide 1H (front) - **Hazard Report**

**Name**

Date & time reported

Hazard (nature, location)

Immediate action taken

Suggested action

**Name of person receiving the report**

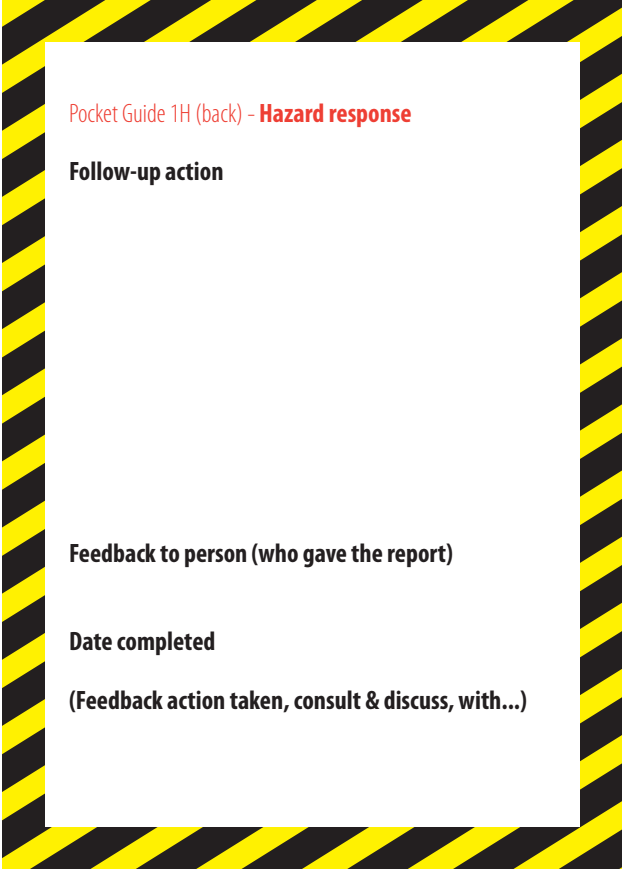

*(their assessment of the risk)*

- **likelihood**
- **consequence**
- **risk rank**

**H**

**M**

**L**



Pocket Guide 1H (back) - **Hazard response**

**Follow-up action**



**Feedback to person (who gave the report)**

**Date completed**

**(Feedback action taken, consult & discuss, with...)**



Pocket Guide 11 (front) - **Task emergency response**

**Is there a specific emergency plan for this task?**

**Has it been reviewed by everyone in the work team?**

**What is the emergency phone number & where is the nearest phone / communications?**

**What is the name of the task location (*for giving directions*)?**

**If working alone – have I informed someone & agreed on a time to investigate if contact is lost?**

**Where are the nearest fire extinguishers / hoses / hydrants and first aid kits?**

**How would recovery be exercised in a fall-arrest situation (*someone dangling in a safety harness*)?**

Pocket Guide 11 (back) - **Site emergency response**

**Site Emergency Phone number**

**First aid contact**

**Fire contact**

**Medical contact**

Location of site emergency response plan

Local emergency services contacts

Nearest hospital & ambulance contacts

Description of best way to reach the site

Local police & inspector safety officer

Electricity supplier (& location of shut-off switch)

Water supplier (& location of main supply valve)



Pocket Guide 11 (back) - **Site emergency response**

**Site Emergency Phone number**

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