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Machines STILL kill and maim

What are *you* doing to prevent it?

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What causes the most accidents?

- ▶ **Uncontrollable acts account for 2 % of all workplace accidents**
- ▶ **Hazardous conditions account for 3 % of all workplace accidents.**
- ▶ **Unsafe/inappropriate behaviors account for 95% of all workplace accidents.**
- ▶ **Management is able to control factors that produce 98 % of all workplace accidents.**



- ▶ **Each of the following photos represents a person who has been seriously injured within ‘our’ industry.**
- ▶ **All of these incidents directly involved people working in or around inadequately guarded equipment.**
- ▶ **ALL of the incidents **WERE** preventable**



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There are 4 principle steps that should be adopted to ensure safety improvement

1 Identifying the tasks

2 Assessing the tasks

3 Providing, or improving the safeguards

4 Improving performance



1 Identifying the tasks





Identifying the tasks

- ▶ **We need to consider:**
 - ▶ **New equipment**
 - ▶ **Equipment transferred between sites**
 - ▶ **Existing equipment**
 - ▶ **Routine tasks**
 - ▶ **Ad hoc activities**
 - ▶ **Machine Operators**
 - ▶ **Engineering Teams**





New Equipment

- ▶ DO NOT rely on CE marking.**
- ▶ Establish procedures to ensure ALL aspects of safety are effectively assessed.**



New Equipment

Plant Handover checklist

Machinery transferred between sites

Area:

Department:

Item	Yes	No	Comment
1	The above item of plant falls within standards, safe working systems and HSE Guidance Notes etc.		
2	The electrical design and circuitry associated with plant meets Statutory & Company Standards		
3	Guarding prevents access to all dangerous parts of the plant during operation.		
4	The following type(s) of safe guards are fitted:		
(a)	Fixed		
(b)	Interlocked		
(c)	Automatic		
(d)	Trip		
(e)	Distance		
(f)	Adjustable		
(g)	Photo-electric trip devices		
5	Fixed Guards – All fixed guards are:-		
(a)	Sufficiently robust to withstand the stresses of the process & environmental conditions.		
(b)	Securely fixed in position.		
(c)	Only able to be removed or opened with the aid of a tool.		
(d)	Any openings in fixed guards are designed to prevent access to dangerous parts.		



Identifying the tasks

- ▶ **Conduct an audit of ALL tasks**

- ▶ **Involve:**
 - ▶ **Safety Reps**
 - ▶ **Machine Operators**
 - ▶ **Engineers**

- ▶ **The emphasis MUST be on identifying ALL tasks and not just those that you are aware of.**



Existing Equipment

- ▶ Machinery guarding audits**
- ▶ Isolation assessments**
- ▶ Risk assessment programme**



2 Assessing the tasks



Two ways to monitor the system

Re-active

- ▶ Collecting and analysing information after an incident/accident.
 - ▶ Accident investigation
 - ▶ Near miss investigation
- ▶ Intended to highlight why an incident happened to enable remedial measures to be implemented.
- ▶ Learning from mistakes.

Active

- ▶ Making sure that set standards are implemented and that Management Controls are effective.
 - ▶ Periodic Inspections
 - ▶ Spot-checks
- ▶ Intended to highlight problem areas **before** things go wrong, to allow necessary changes to be made



Active Monitoring

- ▶ Hazard Alert Systems**
- ▶ Daily Safety Checks**
- ▶ Area Safety Inspections**
- ▶ Risk Assessment Programme**



3 Providing, or improving the safeguards



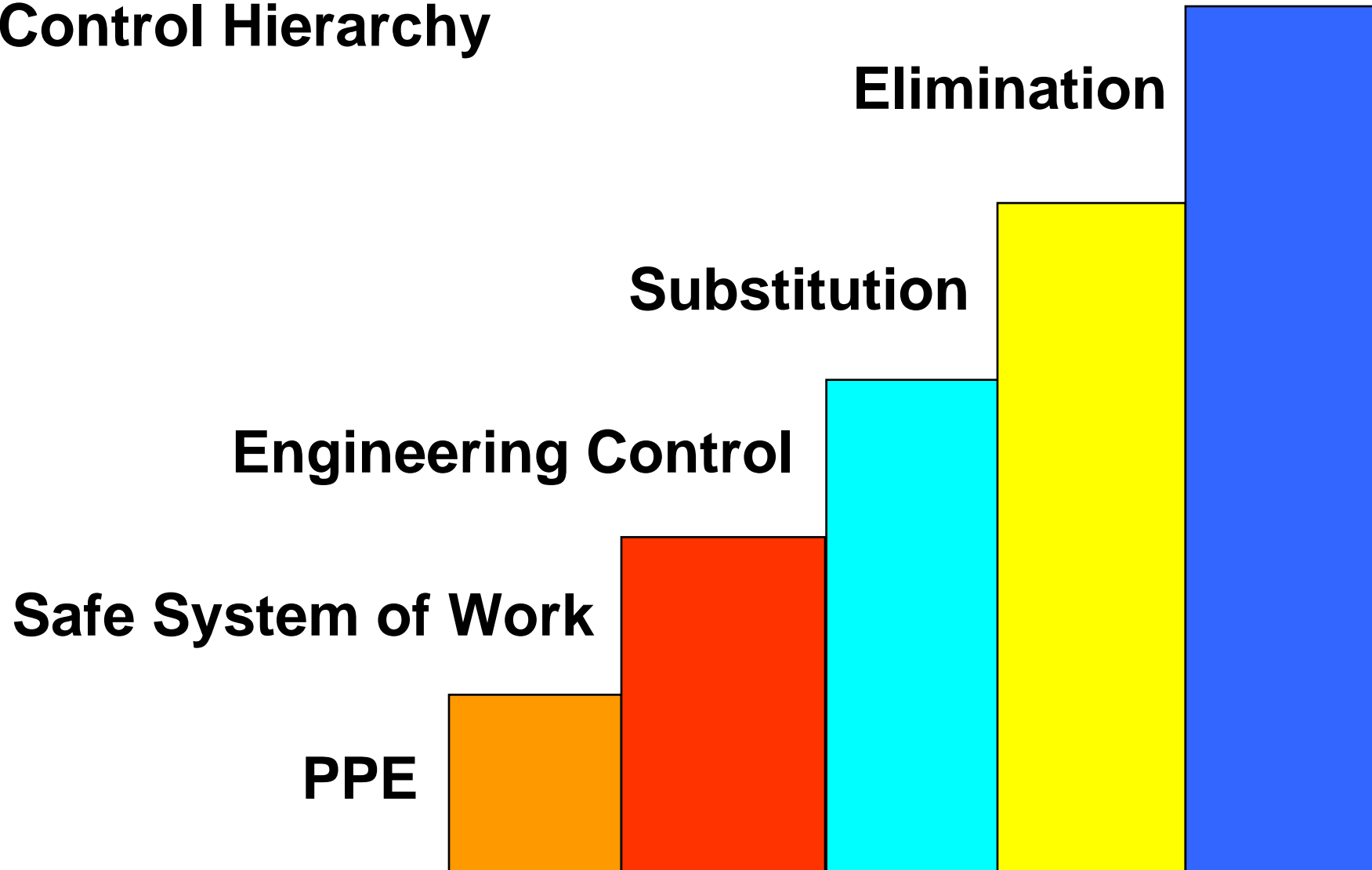
Providing, or Improving, the safeguards

▸ Simple process

- Install remedial safety measures, inline with hierarchy.**



Control Hierarchy

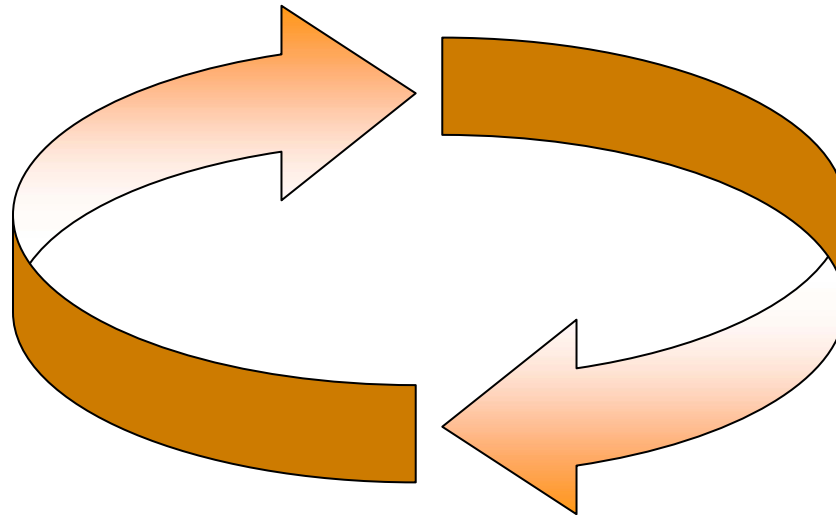




Providing, or Improving, the safeguards

▶ Simple process

- ▶ Install remedial safety measures, inline with hierarchy.
- ▶ Re-visit the risk assessment for the task
- ▶ Make additional improvements
- ▶





Examples of Corrugator Guarding





4 Improving performance



Improving performance

- ▶ **Be aware of industry guidance**
 - ▶ **Sources HSE, PABIAC, CPI, BSI**



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