BRADY

Go for zero accidents at work

Go for Zero Guide Book

Why this guide?

According to Eurostat, 2.5 million non-fatal (minimum 4 days absence) and 3515 fatal workplace accidents occured in the European Union and United Kingdom in 2012. Although accidents in the workplace decreased significantly versus 2009, both in absolute numbers and per 100 000 full time workers, the numbers show there is still room to improve workplace safety and reduce the number of workplace accidents.

Managing safety risks to prevent workplace accidents from happening is both a humane and an economically sound strategy to protect or even improve company profitability. Every workplace accident generates cost, and potentially includes a severe human toll that impacts morale and productivity.

This Go for Zero guidebook provides an insight in the main safety risks in industrial sectors, includes components and tips to create a Go for Zero safety programme and presents tools to implement it on the workfloor.

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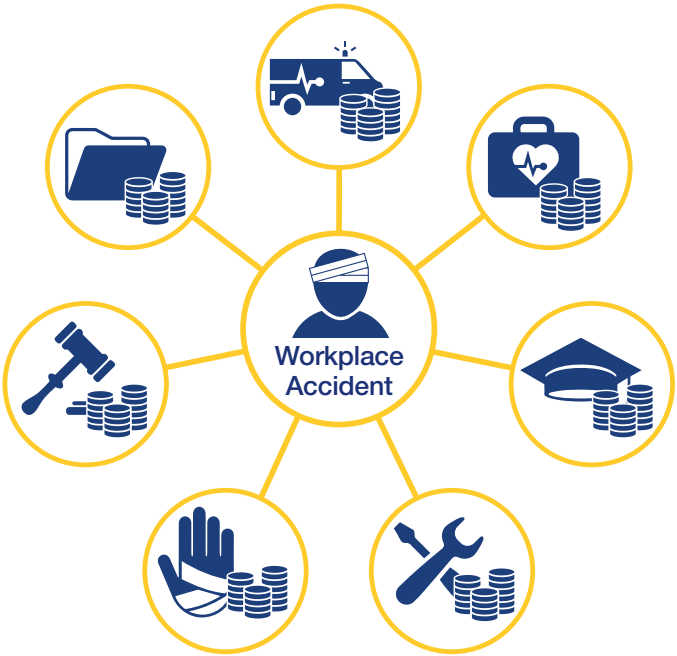
Workplace
Accident

The cost of workplace accidents

Every accident can have a severe human cost, and almost always generates significant indirect costs. These can include:

- time lost by an injured employee
- time lost by employees and supervisors attending the injured employee
- clean up and start up of operations interrupted by the accident
- time to hire or to retrain individuals to temporarily replace the injured employee
- time and cost for repair or replacement of any damaged equipment or materials
- cost of continuing all or part of the employee's wages, in addition to compensation
- reduced morale among employees, and perhaps lower efficiency
- increased insurance rates
- cost of administrative follow-up and paperwork

Investing in solutions to manage workplace safety risks enables companies to control these costs while protecting or even improving productivity and profitability.

Main industrial safety risks

The European Union organised the ‘European Survey of Enterprises on New and Emerging Risks’ (ESENER-2) in 2014 to identify new and emerging safety risks in order to support new policy making. The survey asked employees and safety professionals about the way safety and health risks are managed at their workplace.

On the next page we recreated a table from ESENER-2, highlighting the primary and secondary safety risks in our selection of industrial sectors.

*Table recreated from the Second European Survey of Enterprises on New and Emerging Risks (ESENER-2), European Agency for Safety and Health at Work, https://osha.europa.eu

Highest safety risks in industrial sectors

Activity sector	Most frequently reported risk factors (% establishments)	
	First	Second
Agriculture, forestry and fishing	Risk of accidents with machines or hand tools	Risk of accidents with vehicles in the course of work
Mining and quarrying	Risk of accidents with machines or hand tools	Loud noise
Manufacturing	Risk of accidents with machines or hand tools	Repetitive hand or arm movements
Electricity, gas, steam and air conditioning supply	Risk of accidents with machines or hand tools	Tiring or painful positions, including sitting for long periods
Water supply; sewerage, waste management and remediation activities	Risk of accidents with machines or hand tools	Risk of accidents with vehicles in the course of work
Construction	Risk of accidents with machines or hand tools	Lifting or moving people or heavy loads
Transportation and storage	Risk of accidents with vehicles in the course of work	Tiring or painful positions, including sitting for long periods


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Chapter one:
A safety policy

A safety policy should enable your company to be compliant with all applicable workplace safety legislation and to emphasize its ambition and commitment to avoid workplace accidents.

The following pages offer tips to create a comprehensive safety policy that will enable you to identify and manage workplace safety risks to ultimately fulfill the ambition to have zero workplace accidents.

What is a safety policy?

A complete safety policy must be a written plan that includes procedures and is put into practice. It should minimally include:

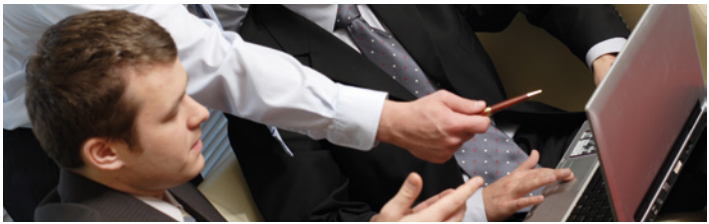
- management commitment
- a safety communications system
- a system for assuring employee compliance with safe work practices
- scheduled inspections and evaluation
- procedures for correcting unsafe and unhealthy conditions
- a safety and health training and instruction plan
- an accident investigation procedure
- a procedure for recordkeeping and documentation

Management commitment

Commitment to safety and health is shown in every decision and every action. Control potential workplace hazards and consistently correct hazardous practices as they occur or are recognised.

Tips:

- Establish SMART* workplace safety objectives, just like the objectives in sales, marketing or production.
- Emphasise management accountability for the safety record of their team members
- Provide a way for employees to report unsafe conditions without fear of retaliation and with a follow-up commitment from management
- Allocate company resources to identify and control hazards, install engineering controls, purchase protective equipment and train employees in safety and health
- Set the example and ensure management and supervisors comply with and participate in the safety programme



*SMART is an acronym for Specific, Measurable, Assignable, Realistic and Time-related

Safety communications

Your program must include a communication system to reach employees - in a form readily understandable - on safety and health topics.

Tips:

- Formalise a workplace safety communication system that can be understood by all employees
- Use languages used by your employees, or use diagrams, drawings and signs in multi-lingual environments
- Schedule employee meetings to freely discuss workplace safety
- Include safety as a topic in existing recurring meetings
- Establish a safety and health committee to review workplace inspections, submit recommendations and report
- Implement training programmes
- Use posters or a safety newsletter, or add a safety section to an existing internal newsletter
- Promote an anonymous safety suggestion letterbox
- Enable employees to add unsafe situations, near misses and accidents in existing Customer Relationship Management-systems (CRM)
- Repeat regularly that safety is a priority
- Document communication efforts for compliance reasons

Hazard assessment & control

An effective hazard control system will identify hazards that exist or develop in your workplace and include steps on how to correct those hazards, and how to prevent their recurrence.

Tips:

- Ensure established safe work practices are being followed and unsafe conditions or procedures are identified and corrected
- Have trained personnel carry out inspections on a regular basis, and with every change in equipment or work processes and document the inspections
- Include periodic compliance checks with any applicable safety legislation in your region
- Encourage employees to report potentially hazardous situations
- Check whether protective equipment is available and maintained in safe and good working condition
- Check whether preventive maintenance is conducted properly
- Correct hazards as soon as they are identified, or set a date for correction while interim protection is provided

Safety & Health training

Training enables employees and supervisors to do their job properly and puts your safety policy into action. An effective training programme ensures that all employees are knowledgeable about the materials and equipment they are working with, what known hazards are present and how they are controlled.

Tips:

- Include training so supervisors are familiar with the safety and health hazards to which their team members may be exposed
- Include appropriate training for every affected or exposed employee. This may include contractors, 3rd parties and visitors
- Offer additional training whenever new substances, processes, procedures or equipment are introduced
- Offer additional training whenever a previously unrecognised hazard is identified
- Make sure safety training is specific and effective
- Provide a training matrix for every employee and enforce it
- Include training refresh needs in your programme

Safety planning, rules & work procedures

Safety and health planning are effective when a workplace has procedures in place that are updated regularly to reflect present working conditions.

Tips:

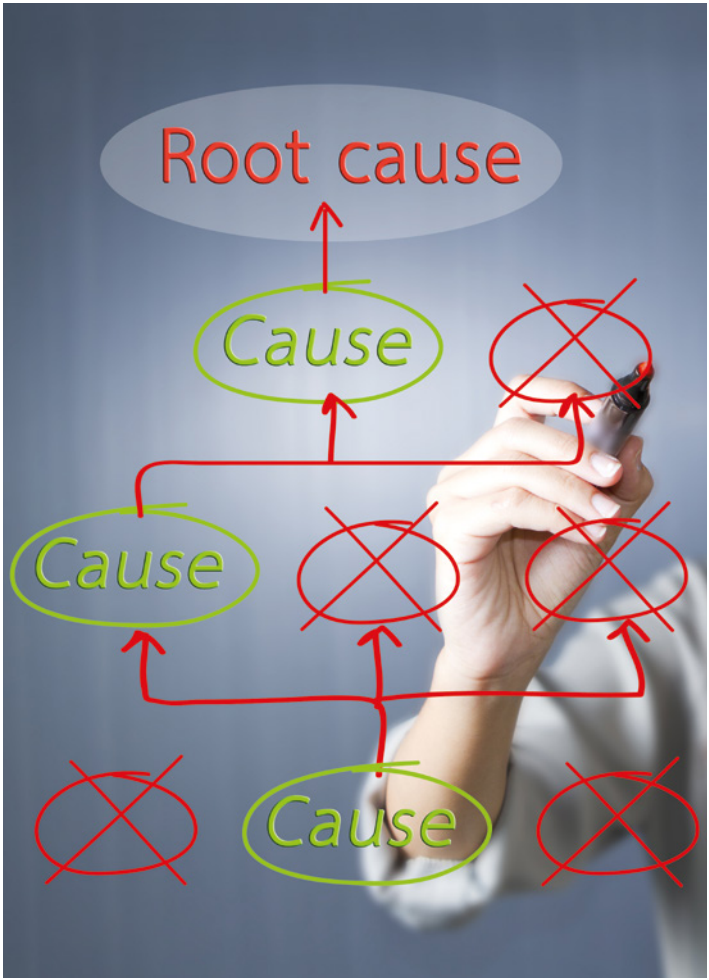
- Communicate safe work practices for each specific job
- Create procedures to deal with emergency situations that may impact operations. Some of these may be required by law
- Create rules for personal protective equipment, appropriate clothing, expected behaviour and emergencies
- While a disciplinary policy may be required to enforce rules and procedures, think about reward and recognition to drive the desired behaviour

Accident investigation

Accident or near-miss investigations should be written, complete, thorough, and conducted by trained individuals. They serve to understand why the accident or near miss occurred and which actions can be taken to avoid them. Corrective action should prevent a recurrence of the accident or near miss while improving the overall operation to achieve not only accident control, but also total operation control.

Tips:

- Describe any injury, production delay, damaged material or condition that has potential for losses or delays
- Describe what caused the incident, who was involved, whether personnel involved was qualified and properly trained and whether proper operating procedures were in place. Add why procedures weren't followed if applicable and if similar situations might exist
- Determine which aspects of the operation or processes require attention and constructive action to eliminate the cause of the accident
- Describe actions already taken to reduce risk and add those needed to prevent reoccurrence. Add temporary precautions and reasons for delaying the implementation of a definitive corrective action


Root cause
Cause
Cause
Cause

Root cause analysis

When investigating an accident, always bear in mind you are looking at the top of an iceberg. It is likely that for every accident, a hundred more near-misses might have occurred. These provide important statistical data that will allow you to find root causes for near-misses and ultimately, accidents. Try to determine whether these near-misses were caused by behaviour & conditions, by policy & standard compliance, or values that live in the workplace. Drill down to the root cause by continuing to ask why a near miss occurred. Stick to the facts!

It is very important to coach employees in accident reporting. Statistically relevant data will provide you with useful information on how to adapt or intensify your safety policy. If employees are deterred from reporting minor incidents by a repressive policy, you risk losing important information that can help to avoid costly accidents.

Chapter two:
Safety management system

Now that a safety policy is in place, the best way to increase workplace safety is to identify safety risks that should be addressed first, and those that can be reduced over time.

Two best practice tools to achieve this are the evaluation of risk assessment, including a risk matrix, and the Deming cycle.

It is advisable to implement both tools in continuous improvement models that can accommodate constantly evolving safety risks, as existing machinery is sometimes used in new ways, new machines are purchased and simple changes in the workplace may affect high frequency workplace accidents such as slips, trips and falls.

Evaluation of risk assessment

The evaluation of risk assessment is a systematic identification and evaluation of all relevant risks to workers with the aim to define the necessary measures to increase safety and health at work. It includes all foreseeable activities and work processes in plants and is an ongoing process that also determines the urgency at which action should be taken.

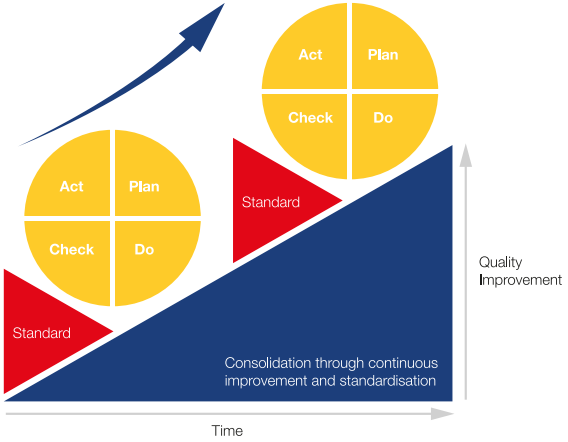
Probability		Extend of damage				
		Small injuries w/o stoppage	Easily curable injuries w stoppage	Permanent injuries, can work after rehabilitation	Permanent injuries, can't work after rehabilitation	Death
		V	IV	III	II	I
Often	A	3	2	1	1	1
Once in a while	B	3	2	2	1	1
Unfrequent	C	3	2	2	1	1
Unlikely	D	3	2	2	2	1
Nearly impossible	E	3	3	3	2	2

Risk level	Potential of risk	Measures (depends on evaluation of risks)
1	High	Immediate action to reduce risk level
2	Medium	Short term action to reduce risk level
3	Low	Mid/long term action, training

Deming cycle

Workplace safety is a continuous effort that is best managed with a continuous improvement model. The Deming cycle, or Deming Wheel, offers a practical approach for continuous safety management in 4 steps: Plan, Do, Check (or Study) and Act. When applied diligently, these 4 steps enable safety managers to bring workplace safety from a sufficient level to increasingly higher levels of excellence. Originally developed by statistician Edward Deming, the Deming cycle has its roots in lean manufacturing and Six Sigma.

The 4 steps Plan, Do, Check and Act are repeated over and over again in continuous improvement to achieve higher levels of workplace safety. After every successful cycle, the safety standard goes up to enable ever higher standards resulting in fewer accidents.



Plan

Identify a SMART goal or purpose, formulate a theory, define success metrics and create a plan.

- Think about where you are now and where you need to be
- Say what you want to achieve, who will be responsible for what, how you will achieve your aims, and how you will measure your success
- Decide how you will measure performance. Think about ways to do this that go beyond looking at accident figures
- Consider fire and other emergencies. Co-operate with anyone who shares your workplace and co-ordinate plans with them
- Remember to plan for changes and identify any specific legal requirements that apply

Do

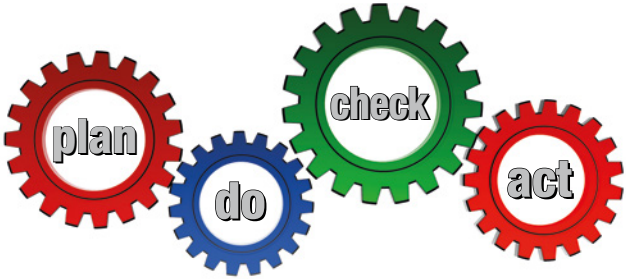
Implement your plan.

- Assess the risks, identify what could cause harm in the workplace, who it could harm and how, and what you will do to manage the risk
- Decide what the priorities are and identify the biggest risks
- Involve workers and communicate, so that everyone is clear on what is needed and can discuss issues - develop positive attitudes and behaviours
- Provide adequate resources, including competent advice where needed
- Decide on the preventive and protective measures needed and put them in place
- Provide the right tools and equipment to do the job and keep them maintained
- Train and instruct, to ensure everyone is competent to carry out their work
- Supervise to make sure that arrangements are followed

Check

Monitor outcomes, measure success and define areas for improvement.

- Make sure that your plans have been implemented
- Assess how well the risks are being controlled and if you are achieving your aims. In some circumstances formal audits may be useful
- Investigate the causes of accidents, incidents or near misses



Act

Integrate all learning, adjust the goal, change methods or reformulate the theory.

Learn from accidents and incidents, ill-health data, errors and relevant experience, including from peers

- Revisit plans, policy documents and risk assessments to see if they need updating
- Take action on lessons learned, including audit and inspection reports

Practical example: new hardware acquisition

To prevent accidents from happening, safety managers should be involved in purchasing decisions for new hardware and machinery to proactively design out risks. Try to avoid or reduce as many safety risks as possible before the machines are purchased. One practical way to do this is to create a safety risk assessment document that impacts both the purchasing process and the implementation of the new machines in the workplace.

Safety Risk Assessment

Create a safety risk assessment document for the new machinery that needs to be purchased. Try to be as complete as possible at the onset so you can identify the biggest risks in advance.

Tips:

- Avoid shortcomings to avoid larger cost in a later phase
- Check governmental and legal safety requirements
- Add safety requirements based on company values, policies and procedures
- Include safety requirements for maintenance on the new machinery
- Add maximum machine dimensions aligned with the allocated space to allow safe operations
- Let your risk assessment document evolve during the entire new hardware acquisition process to accommodate changes and emerging safety risks

Purchasing process

The safety risk assessment document can serve as a list of requirements new machinery and suppliers need to comply with in order to maximise safety in the workplace.

Purchase

- Discuss the safety requirements with other stakeholders or with the stakeholder project team
- Include safety requirements in the purchase order, next to other business requirements
- Make sure that all safety risks related to machine design are addressed in the purchase order

Supplier

- Safety requirements will help select trustworthy brands and suppliers
- Discuss your safety requirements with the supplier to remain open to alternatives that can help reach safety goals
- Adapt the purchase order if necessary to include agreed on safety requirements

Delivery

- Inspect the new machinery when it is delivered together with other stakeholders to check if all requirements are present
- Communicate non-compliances with the purchase order document to the supplier and ask for solutions
- Think about a safe work-around to address potentially new safety requirements or remaining safety challenges

Implementation process

The safety risk assessment document can also be used as a checklist to prepare your organisation for the implementation of new machinery. Part of this process can already start during the purchasing process; other parts need to be completed after machine delivery.

Organisational preparation

- Does the new machinery generate a need to hire new skills?
- Do employees need training to operate the new machine?
- Which safety precautions are needed? (infrastructure, PPE?)
- What is the safest procedure to use the new machine?
- What are the maintenance requirements of the new machine?
- Organise the workplace for machine implementation with area marking, safety signs, safe work procedures, visual tagging, Lockout/Tagout and pipe markers

Continuous improvement

- Start your continuous improvement process (page 21) to increase safety along with the operating efficiency of the new machine
- Control and reduce emerging risks by monitoring near misses and any accident, and by adding efficient safety measures
- Achieve ever higher safety standards on the new machine along with the increasing safety standards in your organisation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Chapter three:
Go for Zero tools

When safety risks are identified and safe work procedures have been created, it is time to bring them to the work floor for maximum compliance. Several tools are available to support your safety policy.

The following pages present a number of safety tools from Brady's wide range of safety identification solutions.

Lockout/Tagout

Lockout/Tagout involves the isolation and inoperability of the energy supply of industrial machinery during maintenance. Lockout/Tagout needs prescribed operating sequences for each machine and a definition of roles and responsibilities. It also involves an investment in padlocks and in dedicated devices to block energy sources in the off-position, and in shadowboards to organise an efficient internal distribution of lockout tools.

Lockout/Tagout is used to prevent injuries such as fractures, lacerations, amputations, burns and shocks. Brady can deliver a complete solution including expertise, procedure writing services and Lockout/Tagout equipment.

Discover more!

Safety signs

Safety signs are a great solution to quickly communicate important information in the workplace. Easily communicate prohibition, obligation, caution, evacuation, fire fighting, emergency and rescue information.

Safety signs enable you to be compliant with legislative requirements and, more importantly, they help to save lives. Brady offers a large stock of safety signs, customisation options and do-it-yourself printing capabilities so you can instantly create the durable signs you need at your location.

Discover more!

Area marking

Area marking is useful to mark warehouse sections, loading docks, forklift areas, traffic lanes, emergency equipment and safe walking areas. It is available in multiple colours for functional coding in facilities.

Area marking helps prevent accidents caused by moving objects or reduces the severity of accidents because emergency equipment could not be reached in time. Area Marking can also increase efficiency and productivity in a lean manufacturing programme. Brady offers a range of durable facility identification solutions, including permanent and removable products.

Discover more!

Pipe marking

Pipe markers quickly communicate pipe contents and flow direction. They are available in multiple colour codes, various sizes and a variation of pipe marker attachment or carrier systems.

Pipe markers help caution employees, contractors and the fire brigade when using valves or in case of leaks. Brady offers almost every pipe marker next to on-site printing capabilities to create your own.

Discover more!

Visual tagging

Visual tagging clearly communicates the latest equipment inspection and test statuses on the equipment itself. It includes a holder with removable inserts that are designed so employees can recognise which items have been inspected and declared fit for use.

Visual tagging helps avoid accidents due to malfunctions with forklifts, ladders, scaffolds, drills, safety harnesses and other tools and equipment. Brady offers a complete and customisable range that can tag any tool without impacting its use.

Discover more!

Spill control

Spill control solutions enable fast and easy disposal of fluids to prevent them from spreading on the work floor or to avoid polluting the environment.They are available as dry granules or in a variety of shapes.

Spill control can be used to prevent slips and falls in the workplace. Brady offers a wide range of spill containers and polypropylene rugs, socs, pads, pillows and mats for both preventive and reactive use.

Discover more!

Safety identification printers

Safety printers enable you to print durable safety signs, pipe markers and even safe work procedures on-site and on demand. On-site identification printing capabilities eliminate the need to store various safety signs for future use. With a few consumables, you can print any sign you need, when you need it.

Brady offers specialised thermal transfer and inkjet printers to create mono- , multi and full colour safety signs and pipe markers in various sizes with durable materials for both in- and outdoor use.

Discover more!

BBP85 Label Printer

BBP37 Label Printer

BBP31 Label Printer

BradyJet J5000 Colour Label Printer

BBP33 Label Printer

BMP71 Label Printer

Safety software

Software packages are available to support Go for Zero programmes with digital workflows for procedure approval and safety sign or pipe marker creation.

Brady offers professional and intuitive software and apps to create compliant safety signs and pipe markers, or to create, edit, approve and print safety procedures for multiple sites.

Discover more!

Go for Zero

By creating a safety policy, implementing a continuous improvement safety management system and providing safety tools on the workfloor, the basic conditions are set for your Go for Zero safety programme.

- Use your management system to continuously evaluate and adapt your safety policy and the use of available safety tools to increase your safety standards
- Identify which tools are missing and keep evolving towards zero accidents
- Use near miss data to prevent accidents before they occur

'Go for Zero', 'Goal Zero', 'Zero accidents'or 'Zero unsafe behaviour' are bold statements that are used to decidedly illustrate a workplace safety ambition. While we encourage 'Go for zero' as an ambition, strategy or mindset, we do not advise it as a target because it is the journey that matters, not the destination.

We identify and protect people, products and premises.

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