

# Risk Assessment

## Abrasive Wheels

### Introduction

Risk assessments are important for all workplaces and all work activities but they are particularly vital for hazardous work involving the use of abrasive wheels.

All employers have a responsibility to identify the risks and put in place a plan to control them. As an employee you must follow any safe systems of work that are implemented.

This section of the course looks at each of the essential steps in the risk assessment process so that you know what to look out for when carrying out your own workplace risk assessment.

### Topics to be Covered

The topics covered in this section are:

- What is a risk assessment?
- Identifying hazards
- Deciding who may be harmed
- Evaluating risks
- Recording findings
- Reviewing and updating

### What is a Risk Assessment?

A risk assessment is simply a careful examination of what in your work could cause harm to people so that you can weigh up whether you have taken enough precautions or need to do more.

Employers are legally required to assess the risks in their workplace so that they can put in place a plan to control the risks.

The main steps of a risk assessment are:

1. Identify the hazards.
2. Decide who might be harmed and how.
3. Evaluate the risks and decide on precautions.
4. Record your findings and implement them.
5. Review your assessment and update if necessary.

# What is a Risk Assessment?

A few key definitions relating to risk assessments are as follows:

**Reasonably practicable** - the risk assessment should be realistic and possible to achieve with the resources available in your workplace.

**Suitable and sufficient** - the risk assessment must be tailored towards the tasks at hand and be thorough enough to ensure there are no discrepancies.

**Competent person** - the person that carries out the risk assessment should understand HSE guidance, develop an action plan, know which information to obtain for the risk assessment, seek help when needed and record all the results.

**Hierarchy of control** - the order in which control measures should be implemented.



# Step 1: Identify the Hazards

The first step of your risk assessment is to identify the hazards that your work activities pose. Techniques for this include:

- Workplace observation - where are abrasive wheels used in the workplace? Can you identify any hazards just by looking?
- Feedback from employees - have workers identified any hazards?

Check manufacturers' instructions or data sheets - what safety guidance does the manufacturer offer? Much of **Roc, Prianha Diamond Products and ceramic Cobra polishing systems safety can be found on [www.hardrockuk.com](http://www.hardrockuk.com) main web site. The manufacture recommends cutting blades are made to exceed the EN13263 standard this that blades can be fitted as a normal blade to a grinder with back locking nut. Maximum operational speeds 6650Rpm 80mps. for cutting.**

- **Recommended safety operational speeds: 1000-6650RPM / 12-80mps with a bolt on steel flange attached. (20 minutes intervals, depending on the task in hand = risk assessment reduce speed where and when possible. to 50mps)**  
**We recommend extra safety PPE is used worn when flush cutting. Some training should be given to identify the risks. But the flush cutting blade can serve as a potentially superior solution in some cases of use.**

This information is based on typical grinder maximum output speed of 80mps

- **for polishing sanding systems form ceramic Cobra & Manufactures MISCELLANEOUS SUPPLIERS speed from 1000 - 4500 max Rpm on 100mm disc approximately 25mps. = ideal polishing sanding speeds.**
- Review accident and ill-health records - have there been any accidents or near misses related to abrasive wheels before?  
Some hazards may already be present in the workplace environment and some may arise from the job being carried out, so be sure to consider every aspect of the work activity.



**Ceramica**



**Cobra**

## Step 2: Decide Who Might be Harmed and How

This step of the risk assessment involves looking at each specific hazard and then identifying the people who may be harmed. These people may be:

- Specific groups of employees.
- Customers.
- Visitors.
- Members of the public nearby.

Some employees have particular requirements, such as younger workers, expectant mothers or people with disabilities.

Temporary workers, part-time workers or sub-contractors need further consideration as they are likely to have limited knowledge of the conditions and dangers in your particular workplace.

## Who is Most at Risk?

In the case of abrasive wheels, the people most at risk from harm include:

- Those responsible for mounting, setting and/or dressing new abrasive wheels.
- Those using a fixed or portable grinding wheel e.g. a disc sander, angle grinder or portable stone polisher dry. (**Wet Polishers have extra electrical safety considerations.**)
- Those within reach of rapidly flying particles following disintegration of a wheel.

## Step 3: Evaluate the Risks

After identifying the risks and who may be harmed, the next step is to evaluate those risks and decide whether the hazards can be eliminated.

If the use of abrasive wheels cannot be avoided, then how can you control the risks so that harm is unlikely? The hierarchy of control suggests:

- Using a less-risky work process.
- Preventing access to the hazard.
- Re-organising work to reduce the need for exposure.
- Issuing personal protective equipment.
- Involving and training staff to ensure the precautions will work in practice and don't introduce new hazards.

More on control measures will be covered in the next section of the course.

## Step 4: Record Your Findings and Implement Them

It is recommended that your risk assessment findings are written down, even though where there are fewer than 5 employees in your company this is not required by law.

You need to be able to show that:

- A proper check was made.
- You have considered who might be affected.
- You have dealt with all the obvious significant hazards, taking into account the number of people who could be involved.
- The precautions are reasonable and the remaining risk is low.
- Staff or their representatives have been involved.



## Exercise

Who is at risk on your current job / Task?

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## Exercise

Identify the risks of that specific task job you are doing

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## Step 5: Review and Update

You should check on a regular basis whether there have been any changes in the workplace that may affect your risk assessment. For example:

- Are there any improvements still to be made?
- Has there been employee feedback?
- Have you learnt anything from accidents and near misses?
- Has any new equipment or machinery been introduced?
- Do you have any new employees that require training?

All of these changes would require your risk assessment to be reviewed and updated in order to take into account what has been learnt.

## Exercise

Which of the following is **NOT** a step in the risk assessment process?

- Review your assessment and update if necessary
- Ensure that face masks are suitable, tested appropriate & fit,/ before fitting.
- Identify the hazards
- Record your findings and implement them
- Evaluate the risks and decide on precautions

# Summary

A risk assessment is simply a careful examination of what in your work could cause harm to people so that you can weigh up whether you have taken enough precautions or need to do more.

The main steps of a risk assessment are:

- Identify the hazards.
- Decide who might be harmed and how – consider everyone from employees to site visitors.
- Evaluate the risks and decide on precautions – can work be avoided? If not, how can you control the risks so that harm is unlikely?
- Record your findings and implement them – keep a written record of your findings to show compliance with the law.
- Review your assessment and update if necessary – have there been any changes that mean the assessment needs amending?

In the next section of the course we'll take a look at some of the control measures you can implement to protect yourself and others from harm.

## Exercise

Record your finding Who is at risk on your current job / Task?

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## Exercise

Record your finding Identify the risks of that specific task job you are doing and report / implement it when?

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### Diamond Blade Speed Guidelines

Diameter		Recommended RPM*	Never Exceed RPM
4"	(102mm)	9,000	15,200
4-1/2"	(114mm)	8,000	13,500
5"	(127mm)	7,200	12,200
5-1/2"	(140mm)	6,500	11,090
6"	(152mm)	6,000	10,185
7"	(178mm)	5,100	8,730
8"	(203mm)	4,500	7,640
9"	(229mm)	4,000	6,700
10"	(254mm)	3,600	6,115
12"	(305mm)	3,000	5,095
12" (High Speed Blades)			6,300
14"	(356mm)	2,500	4,365
14" (High Speed Blades)			5,460
16"	(406mm)	2,200	3,800
18"	(457mm)	2,000	3,300
20"	(508mm)	1,800	3,000
22"	(559mm)	1,600	2,780
24"	(610mm)	1,500	2,550
26"	(660mm)	1,300	2,350
28"	(711mm)	1,200	2,185
30"	(762mm)	1,200	2,040
32"	(813mm)	1,100	1,910
36"	(914mm)	1,000	1,700
42"	(1067mm)	800	1,455
48"	(1219mm)	700	1,275

\* Recommended RPM based on 9,500 SFPM