

The use of emery cloth on metalworking lathes

HSE information sheet

Engineering Information Sheet No 2 (Revision 1)

Introduction

This guidance is for employers and operators of metal working lathes found in engineering and other manufacturing industries.

Hazards

Every year there are serious accidents involving the use of emery cloth on metalworking lathes. These accidents result in serious injuries such as broken bones, dislocations, lacerations, amputations and occasionally death.

Accidents occur when hand-held emery cloth is entangled in the rotating parts of the machine or where the emery cloth is snagged on the rotating component dragging the operator into the danger zone.

Safety measures

Computer numerically controlled (CNC) Lathes: Emery cloth should **NEVER** be applied directly by hand or by use of a backing board or similar holding device on these types of machines. The operator would need to defeat safety devices, eg the interlocks on the guarding that is a required safety measure for these types of machines.

Methods of tooling are available that will achieve the surface finish or close tolerance diameter required for the components.

Manual lathes: Emery cloth should **NEVER** be applied directly by hand on manual metalworking lathes.

Risk assessment

You must carry out a suitable and sufficient assessment of the risk from using emery cloth to polish, deburr or size a metal component while it is rotating in a manual lathe. Your risk assessment should determine whether you can eliminate the use of emery cloth completely.

Where this is not practicable, use a safe method of using emery cloth on a rotating manual metalworking lathe. You will need to consider the following as part of your risk assessment:

- Is there is a better method available in order to achieve the desired finish on the component, eg. a polishing, honing, grinding or finishing machine?
- If the finish being sought is only cosmetic, does the task really need to be undertaken?
- Is a better machine tool available to achieve the desired finish or correct size during machining?
- Can a lathe tool be set up to carry out a deburring operation?

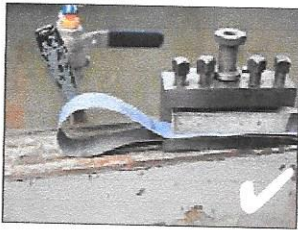
You must inform employees of the risks identified and consult safety representatives before introducing any new measures. You must record the findings of your risk assessment (where you employ 5 or more people) and review them regularly, including amending and updating your assessments when there is new information or there are changes to the process or equipment.

Use of emery cloth

If, after completing a suitable and sufficient risk assessment, it is found that emery cloth does still need to be used, apply it using either of the acceptable methods specified in Table 1.

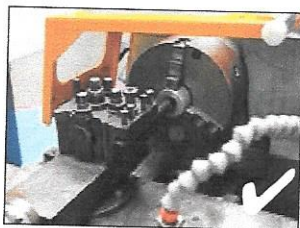
Table 1 Acceptable methods of applying emery cloth

Tool post



The tool post is used to clamp and hold a looped strip of emery cloth in place during application (see video demonstration at www.hse.gov.uk/engineering/lathes.htm). This method is for external deburring work only. It almost entirely eliminates the risk of injury.

Tool post and holding device combined



This technique combines the tool post with the holding device. The emery cloth is wrapped around the holding device and held in a boring bar holder in the tool post (see video demonstration at www.hse.gov.uk/engineering/lathes.htm). This method is used for internal deburring. Work is simple to set up and significantly reduces the risk.

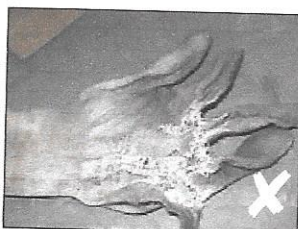
Table 2 Unacceptable methods of applying emery cloth

Holding by hand



In this example the emery cloth has been wound round the fingers to help maintain grip and tension, which significantly increases the risk of entanglement and injury.

Gloves



The wearing of gloves increases the risk of entanglement and is never acceptable near rotating parts of machinery such as manual metal working lathes. The wearing of loose, baggy clothing, long hair and jewellery all increase the risk of entanglement.

Information, instructions, training and supervision:

Provide the machine operator with appropriate training on how to use emery cloth safely. Provide operators and supervisors with information, instruction and training about the dangers of using emery cloth and instruction in how to use it correctly and safely. Supervisors should take appropriate action taken if unsafe practices are observed.

The use of gloves should be eliminated while using the methods specified in table 1 for the use of emery cloth. Machine operators should also:

- wear tight fitting overalls (preferably with elasticated cuffs);
- avoid loose, baggy clothing and ties;
- tie back long hair or wear an appropriate hair net; and
- remove rings, jewellery etc.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at:
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