For guidance on managing construction health risks go to
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Angle Grinder

The rules and procedures in force where people are at work may require the person responsible for this equipment to carry out a specific risk assessment.

It is important to read all of this leaflet BEFORE you use the Angle Grinder

1. Electricity is hazardous and must always be used with great care.
2. This angle grinder is designed for grinding, cutting and de-burring metal. It can also be used to cut brick and masonry. You must use the appropriate abrasive wheel for each of these jobs. It is not designed for any other purpose.
3. The abrasive wheel rotates very fast and can cause injury or damage if the machine is not used in a careful and controlled way.
4. If you have not used an angle grinder before, familiarise yourself with the machine on some straightforward work before you start on the main task.
5. Plan your work and think ahead to make sure you will always be working safely.
6. You must have at least the following items of personal protective equipment: goggles: EN166 or BS2092; dust mask - a minimum of EN149 FFP3(s) protection; Safety boots to EN345 or BS1870/4972; industrial quality gloves; residual-current device (RCD) if using a 230 volt (mains) supply.
7. A personal first-aid kit should be available.
8. This angle grinder must not be used by minors, or by anyone under the influence of drugs or alcohol.
9. This angle grinder is designed for operation by an able bodied adult. Anyone with either temporary or permanent disability must seek expert advice before using it.
10. Although angle grinders are designed for one person operation you should always be careful you do not lift beyond your own capabilities.

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WORK AREA

1. Do not use this angle grinder where there is a danger of explosion. It will ignite fumes from petrol, or gas cylinders.
2. Make sure that the area is clear and safe and that no-one is near to you or could distract you.
3. Protect other people from the dust. Set up an exclusion zone around the area where the angle grinder is being used with physical barriers, barrier tape and signs. Keep children and animals away when using this equipment.
4. Work should stop immediately should anyone, other than those directly assisting with the work, enter the exclusion zone.
5. Clear the area of trip hazards such as rubble, rubbish etc.
6. Do not use this grinder in the rain or where it might get wet.
7. If you are cutting into a floor or fixture check that there are no hidden electric cables, gas or water pipes where you are going to cut. **Ask the hire company for HAE leaflet no.1415 – cable location and signal generator.**
8. Any work that is not part of a fixture should be securely clamped or held in a vice.
9. Cutting certain materials makes a large amount of dust - cover any surfaces or objects that may be damaged, or difficult to clean.

OPERATORS

1. The following items of personal protective equipment (PPE) are the minimum that should be worn whenever you use this machine. Particular jobs or environments may require a higher level of protection.
2. You will need to wear an appropriate dust mask (with a minimum of EN149:2001FFP3 protection) when you are in contact with material that causes dust.
3. You must wear safety boots (EN345 or BS1870/4972).
4. You must wear industrial quality gloves.
5. Anybody who is working near to you will also need to wear identical personal protective equipment.
6. Do not use this grinder in the rain or where it might get wet.
7. If you are cutting into a floor or fixture check that there are no hidden electric cables, gas or water pipes where you are going to cut. **Ask the hire company for HAE leaflet no.1415 – cable location and signal generator.**
8. Any work that is not part of a fixture should be securely clamped or held in a vice.
9. Cutting certain materials makes a large amount of dust - cover any surfaces or objects that may be damaged, or difficult to clean.

GRINDER

1. Check your machine, cables, plugs and guards. If anything is found damaged, do not use the grinder - contact the hire company.
2. Check that the plug on your machine matches your supply. Do not try to force connections or improvise them.
3. Machines with a cylindrical yellow industrial plug fitted are designed to run off an 110V supply. The hire company will have provided a portable transformer if you need to power the machine from a normal mains 230V supply. If a portable transformer has been supplied, take care not to injure yourself when moving it about - it may be heavier than you think. Machines designed to run directly from 230V mains will have either a normal square pin plug fitted, or a blue industrial plug.
4. Make sure that the guards around the wheel are in place and adjusted correctly.
5. Always use the side handle provided. Adjust it to the best position.
6. Vibration from using this grinder can be hazardous. Warm your hands up before you start work, and wear gloves to keep your hands warm while you are working. **Ask the hire company for a copy of the HAE leaflet no. 2150 – Hand-arm vibration or visit www.hse.gov.uk/vibration.**
7. Check on how the on/off switch operates before you switch the grinder on, you must know how to stop it.

ABRASIVE WHEELS

1. You must not fit or change any abrasive wheel unless you are competent to do so. **Ask the hire company for a copy of the HAE leaflet no. 0403 – Abrasive Wheels.**
2. You must only use reinforced abrasive wheels, suitable for hand-held machines, with this grinder. The label on the wheel will have BF or REINFORCED marked on it. You must not use any other wheels.
3. The abrasive wheels must have the correct bore (hole) size to fit the spindle on your grinder. Do not try to fit an abrasive wheel that is too loose, or too tight on the shaft.
4. Check that your abrasive wheels are in good condition - do not use any that are damaged, distorted or badly worn.
5. Make sure that you use the correct type of abrasive wheel recommended by the hire company for the material being ground or cut.
6. Look at the speed stated on the label of the abrasive wheel, and the speed shown on the angle grinder. The wheel speed must be greater than, or equal to, that shown on the machine.
7. When you have fitted the abrasive wheel, check that the wheel rotates freely before switching on. Then let the machine run without load for about 30 seconds. If there is any excessive vibration or other sign that the wheel is not fitted properly, stop the machine and check what is causing the problem.

ELECTRICAL SAFETY

Your machine will only operate on one voltage: it will be 110v or 230v.

110v machines will have a yellow industrial plug fitted. 230v machines will have either a normal square pin plug fitted, or a blue industrial plug. Read the instructions below for your machine.

110 VOLT MACHINES (YELLOW PLUG)

1. If you are using a portable transformer, plug the transformer directly into the 230 volt socket. Do not use any 230v extension cables.
2. If you need to use an extension cable, follow any special instructions given by the hire company. If the hire company has not given any special instructions, you should only use a suitably rated heavy duty 110v extension cable, not longer than 50 metres (160 feet). You must only use an extension cable between the transformer and the machine.
3. Lay the extension cable out carefully avoiding liquids, sharp edges, doorways or windows where it might be trapped, and places where vehicles might run over it. Unroll it fully or it will overheat and could catch fire.
4. Make sure that any extension cable connections are dry and safe.
5. Make sure that any extension cable connections are dry and safe.

230 VOLT MACHINES (SQUARE PIN OR BLUE PLUG)

1. Use a residual current device (RCD) plugged directly in to the 230volt socket. Plug your machine into the RCD. This will help to protect you against electric shock if the cable or machine gets damaged.
2. Use the "TEST" button to check that the RCD is working each time you use it. Reset the RCD according to the instructions supplied with it.
3. If you need to use an extension cable, follow any special instructions given by the hire company. If the hire company has not given any special instructions, you should only use a suitably rated heavy duty one, not longer than 50 metres (160 feet). Plug it directly into the RCD.
4. Lay it out carefully avoiding liquids, sharp edges, doorways or windows where it might be trapped, and places where vehicles might run over it. Unroll it fully or it will overheat and could catch fire.
5. Make sure that any extension cable connections are dry and safe.

Summary:

110V: Wall socket > transformer > any necessary extension cable > angle grinder.

230V: Wall socket > RCD > any necessary extension cable > angle grinder.

Using the Angle Grinder

1. Wear your protective equipment including goggles and dust mask.
2. Check that the abrasive wheel is fitted correctly and securely, and that the guard is properly adjusted.
3. Check that the abrasive wheel is clear of any obstruction before switching on. Be prepared for large grinders to kick when the motor starts.
4. Let the grinder run up to speed before contacting the work surface. Be prepared for the reactive force when the wheel contacts the work surface.
5. Keep the wheel running at speed: if the machine starts to labour and slow down do not force it so hard. Firm but steady pressure keeping the wheel speed up will be more effective and safer than using aggressive force.
6. Lift the abrasive wheel clear of the work before switching off.
7. The abrasive wheel will continue to rotate for a few seconds after you switch off. Wait for it to stop completely before you put the grinder down.
8. The grinder can only cut in straight lines. Do not try to go round corners.
9. Watch out for signs that vibration may be affecting your hands. If your fingers start to tingle or feel numb, take a short break from using the grinder. Exercise your fingers to encourage blood circulation. Find out more about vibration. **Ask the hire company for a copy of the HAE leaflet no. 2150 – Hand-arm vibration or visit www.hse.gov.uk/vibration**.
10. To help prevent vibration affecting your hands, operate the machine for shorter periods. Keep your hands warm - wearing gloves may help do this.
11. Make sure that the machine ventilation slots do not become blocked with dust and debris.
12. Keep the cable clear of the abrasive wheel and any sharp edges on your work.
13. If you think the cable may be cut or damaged in any way, switch off and unplug at the mains before inspecting it. If the cable attached to the machine is damaged, stop using the machine. Contact the hire company. If an extension cable has been damaged, do not use it again.
14. Take care not to accidentally pull the plug from the socket.
15. Switch off and unplug before leaving the machine unattended.
16. If your equipment does not work properly, do not attempt to repair it. Contact the hire company.
17. You may want to read this leaflet again. Please keep it until you finish work.

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Before Starting Work...

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