



West Bay Sanitary District Code of Safe Practice

FOR IMMEDIATE RELEASE
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Questions or comments regarding this
Code of Safe Practice should be directed
to the Regulatory Compliance Coordinator.

Grinders – Bench, Floor, and Hand

This Code of Safe Practice shall be followed to provide a safe work environment while bench, floor, and hand grinders are used.

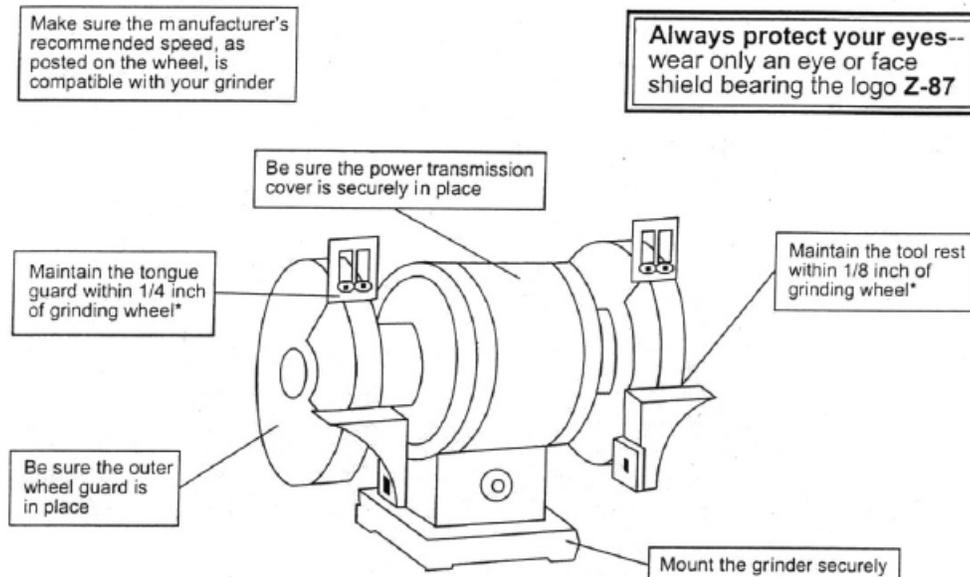
Grinders are useful pieces of equipment in maintenance shops to remove metal from flat and cylindrical surfaces, but careless operation can injure the operator's hands, fingers, eyes, ears, and/or respiratory system. There are two basic types: stationary grinders, such as bench or pedestal grinders, and portable hand grinders. This COSP applies to both types of grinders.

- Keep the floor and work area clean. Store flammables a safe distance (e.g., a minimum of 35 feet) away from the grinder. Sparks can ignite debris and flammable vapors. Keep a fully charged type ABC fire extinguisher nearby.
- Ensure others are not in the path of the sparks.
- Ensure the work area has adequate lighting that doesn't create glare or shadows.
- Although grinders have flat surfaces, they are designed to be cutting tools. Depending on the operation and equipment, the wheel can revolve as fast as 10,000 surface feet per minute. Be careful to keep hands, fingers, and other body parts from coming into contact with the revolving wheel. The grinder should be positioned by height and location to eliminate the need to overreach while grinding.
- When installing a new wheel, observe all instructions provided by the manufacturer. Ensure the recommended speed (as posted on the wheel) is compatible with the grinder, and that the type of wheel is compatible with the material being ground. An improperly installed or incompatible wheel can break or explode and cause injury.
- Avoid grinding aluminum and steel on the same wheel to prevent residual aluminum particles from heating up and flying back at the operator when harder surfaces such as steel are being ground later.

- Before starting the grinder, inspect the wheel to make sure it is not cracked or broken. To minimize hazards from undetected defects or imbalance, stand to one side of the wheel until it has reached full speed.
- To avoid burring, loading, and uneven wear on the wheel, use the minimum pressure necessary and keep work in motion evenly across the face of wheel.
- Never grind on the side of the wheel.
- Use vice-grip pliers or a clamp to hold small pieces.
- All electrically operated grinders must be effectively grounded.

PERSONAL PROTECTIVE EQUIPMENT

- Before working with a grinder, secure loose clothing (i.e., snap, button, zip, tie, etc.) and confine long hair, scarves, ties and dangling jewelry, which can be snagged by the grinder and wrap around the shaft quickly.
- Always wear eye protection. At a minimum, goggles are required. Safety glasses with side shields are acceptable only when combined with a face shield.
- Wear gloves to protect hands from flying particles and sharp edges created during the grinding operation.
- A respirator may be needed to prevent inhaling dust from toxic metals (lead, galvanized steel, stainless steel, manganese, etc.). Contact EHS for a hazard assessment if you suspect that metal dust may be a problem.
- Wear hearing protection to prevent hearing damage from loud operations.



ADRASIVE WHEEL BENCH AND PEDESTAL GRINDERS

- As the wheel wears down, readjust the tool rest and tongue guard. When you can no longer adjust them, replace the wheel. Visually inspect the wheel for cracks before mounting.
- Side guards should cover the spindle, nut, flange, and seventy-five percent of the wheel diameter.
- Use the adjustable tongue guard on the top side of the grinder (see photo) and keep it within ¼ inch (0.6350cm) of the wheel.
- Use dust collectors and powered exhausts on grinders in operations that result in large amounts of dust.
- Eye shields mounted to the grinder are optional, but they do not replace the need to wear proper eye protection equipment.
- Set the tool/work rest no less than 1/16 inch and no more than 1/8 inch from the wheel and slightly above the center line. Fasten securely before turning on the power. The work rest must be rigid to provide stability.
- Bench and pedestal grinders must be permanently mounted.
- All fixed or permanently mounted grinders must be connected directly to their electrical supply system. Do not use extension cords.
- Dress the wheel prior to use, especially if coated with metal. The wheel should be visually clean with no chips.
- Ring test all new wheels. Gently tap a dry clean wheel with a light non-metallic tool such as a screwdriver handle. Tap should produce a metallic “ping,” not a dull thud. Shelf life for a new wheel is no more than two years.
- Never use a wheel that has been dropped or received a heavy blow, even if there is no apparent damage.

SPECIFIC TYPES OF WHEELS

- Deburring wheels are good for intermediate polishing. The wheels are made of abrasive fiber held together with adhesive. It is critical to maintain the proper orientation of the part. If a corner catches on the wheel, it can be thrown down forcefully.
- Wire brush wheels are also good for deburring. Always wear goggles and a face shield when working with wire brush attachments, as loose flying wires during normal operation are serious eye hazards.
- Buffing wheels are made of cloth. Tube abrasives are suspended in wax. To apply, the tube is pressed onto the wheel as it spins, melting the wax that helps it adhere to the cloth. To buff a part, hold it against the wheel with a firm pressure. Keep the part moving and gradually lighten the pressure as the finish gets finer.

PORTABLE HAND GRINDERS

- Before using the tool on a work piece, let it run for several minutes. Watch for flutter or excessive vibration that might be caused by poor installation or a poorly balanced wheel.
- Never use a grinding wheel on an air sander. Pistol-grip, high speed air sanders operate at speeds exceeding the maximum-rated speeds for grinding wheels.
- Check the power cord to make sure it is in good condition. Hold the handles firmly.
- Do not attempt to tape or tie the trigger in the ON position.
- Always operate with the guard mounted on the grinder and adjust the guard so that the sparks fly away from the operator.
- Always engage the OFF switch and wait for the wheel to come to a complete stop before adjusting or removing the wheel or changing its work position or angle.



Personal Protective Equipment

Protection Area	PPE Required
Eye	Safety glasses, goggles with side shields.
Face	Face shield as necessary.
Hand	Work gloves.
Head	
Foot	Steel toe or composite toe safety boots.
Body	Leather apron as necessary for type of job.
Respiratory	N95 dust mask as necessary.
Hearing	Wear earplugs or earmuffs.