### Safe Operating Procedures

SOPs are designed to help employees identify hazards, limitations, PPE, & safety training for specific equipment/tasks.

Environmental Health and Safety, 414 J.M. Smith Hall

<table>
<thead>
<tr>
<th>Equipment/Task Name</th>
<th>Angle Grinder</th>
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<td>Departments Impacted</td>
<td>Art &amp; Architecture Department</td>
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**Purpose**: An angle grinder, also known as a side grinder or disc grinder, is a handheld power tool used for grinding (abrasive cutting) and polishing. Angle grinders can be powered by an electric motor, petrol engine or compressed air. The motor drives a geared head at a right-angle on which is mounted an abrasive disc or a thinner cut-off disc, either of which can be replaced when worn.

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<tr>
<th>TASK</th>
<th>HAZARDS</th>
<th>CONTROLS</th>
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<tr>
<td>1. Inspect work area.</td>
<td>Slip, trip, and fall hazard.</td>
<td>Check workspace, walkways and machine surrounds to ensure no slip/trip hazards are present.</td>
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<tr>
<td>2. Inspect angle grinder.</td>
<td>Electric shock hazard.</td>
<td>Visually inspect the cord to make sure it is in good condition.</td>
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</table>
| | Hand laceration and abrasion. | • Unplug grinder to check the condition and tightness off the grinding wheel and guard.  
| | | • Ensure appropriate guarding is in place on grinder. |
| 3. Install and tighten grinding disc (if necessary). | Accidental starting and hand injury hazards. | Visually check to see if the drill is unplugged. |
| | Foot injury hazard. | • Rest the tool on a flat surface to prevent it from dropping.  
| | | • Wear closed toed or safety shoes. |
| 4. Prior to grinding items. | Projectile hazards. | • Make sure the materials being ground are adequately secured and positioned correctly.  
| | | • Verify the work is adequately secured by trying to dislodge it with a gloved hand.  
| | | • Check the trigger switch to insure it is off prior to plugging in the grinder. |
| 5. Hold grinder above material and turn on. | Loss of control and injury. | • Never start grinder while resting on material.  
| | | • Always firmly hold grinder. |
| 6. Begin grinding. | Projectile and eye injury hazards. | • Wear safety glasses/goggles and/or a face shield to minimize hazards associated with flying objects and sparks. |
| | Entanglement, abrasion, and laceration hazards. | • Keep fingers, hands, and cords away from grinding disc. |
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| Loss of control and bodily injury hazards. | • Wear leather gloves to protect the hands.  
• Tie back hair and do not wear loose clothing or jewelry.  
• Maintain a firm grip on the grinder.  
• Allow grinding wheel to reach working speed before applying to work piece. Increase working loads gradually. Never abruptly. Use smooth fluid motions.  
• Always keep the grinder moving across the material, never holding it in one place.  

| Hearing loss hazard. | Wear ear plugs.  

| Inhalation of toxic, irritant fume, or particulate hazard. | Wear N95 or appropriate respirator.  

| Fire hazard. | Be aware of flying sparks and particulate. Aim debris away from self and other people as well as flammable materials.  

| 7. Turn off grinder. | Entanglement, loss of control, and bodily injury hazard.  
• Keep clear of grinder until it has stopped completely.  
• Do not set grinder on table until it has completely stopped.  

Ensure machines have been isolated from power sources before being cleaned, adjusted, maintained or repaired.  

| 9. Store grinder in appropriate location. | Equipment damage hazard.  
• Ensure disk is still in good condition before putting away.  
• Store cord in such a way that it is not in contact with the grinding disc.  
• Never carry any power tool by its cord.  

| 10. Clean work area. | Slip, trip, and fall hazard.  
• Make sure the floor of the work area is free of cords, equipment, and debris.  
• Clean up any spills or dust.  
• Place equipment back in the storage area.  

**Required Training:**

1. Angle grinder training.

**Required Personal Protective Equipment (PPE):**

1. Safety glasses or face shield  
2. Dust mask  
3. Appropriate footwear (no open toed footwear)  
4. Hearing protection  
5. Leather gloves

| SOP ID | A011 | Related Documents | Art Shop Manual | Creation/Revision Date | 11/2018 |

Suggestions, questions, or comments? Please contact EH&S