



CONCRETE GRINDING

Potential Hazards

- 1. noise (hearing loss)
- 2. cuts/laceration/amputation
- 3. flying objects/eye injury
- 4. electrical shock
- 5. repetitive strain injuries
- 6. respiratory illness

Personal Protective Equipment Required

- | | | |
|-----------------|--------------------|-----------------|
| Hard hat | CSA Boots | Eye protection |
| Hand protection | Hearing protection | Skin protection |
| Mask/respirator | | (clothing) |

SAFE WORK PROCEDURE

DO'S:

- 1. Check wheel guards are in place and properly adjusted.
- 2. Check grinding wheel is firmly secured.
- 3. Inspect the grinding wheel before turning on the power.
- 4. Test equipment for proper operation.
- 5. Work area to be clean, dry, and unobstructed.
- 6. Provide adequate lighting.
- 7. Provide mechanical ventilation when using half-mask respirator.
- 8. Stand to one side of the wheel before turning on the power.
- 9. When grinding use the operating face of the wheel only.
- 10. Before putting down a grinder the wheel must be stopped.
- 11. A grinder is to be put down with the wheel facing up.
- 12. Disconnect the grinder from the power source when making equipment adjustments or wheel changes.
- 13. Store grinder and respirator in clean dry area.
- 14. Clean and sanitize the respirator face piece and clean remaining components of air respirators after each use.

DON'Ts:

- 1. Do not use wheels that are chipped or cracked.
- 2. Do not operate a grinder with one hand.
- 3. Do not use a wheel that vibrates.
- 4. Do not over reach when operating grinder.

PRELIMINARY ACTIVITIES

Where multiple trade activity is scheduled, the general contractor is to review in advance the priority of work and schedule the appropriate time frame to allow each trade to complete their scope of work. Prior to any work commencing supervisors must conduct a hazard assessment of all applicable work areas. Any hazards that are found during the hazard assessment must be addressed prior to any work commencing.

Once the above planning is achieved by the General Contractor, then:

- 1. Proper eye protection and personal protection equipment must be used.
- 2. Evaluate the area for hazards and the impact on other workers in the grinding area. Where a worker, other than the grinder, is exposed to concrete dust, the area should be restricted by the use of caution tape.
- 3. Grinding machines must only be used for what the manufacturers intended them for. This is particularly important with ceiling and floor grinders.
- 4. Proper work rests and protective equipment must be used.
- 5. Maintenance and good working order of all components in the grinding process must be maintained.
- 6. Signage must indicate that cement finishing is in progress and that respiratory protection is required.
- 7. Barricades must be erected to ensure that unsuspecting or unprotected personal do not enter into an area where there is active cement finishing in progress.
- 8. The use of abatement system must be used in areas where vacuums, water or barriers will not provide adequate protection from silica dust or where these controls are ineffective.
- 9. Adequate ventilation must be maintained.



10. Each worker doing concrete grinding is to be assigned a respirator for his sole use.
11. The respirator is to be fitted correctly by a qualified person. A record of this fit test is to be kept on site.
12. Only authorized and trained personnel with an assigned respirator is to perform grinding work.
13. Persons who are required to wear a respirator will not wear contact lenses.
14. The respirator wearer is to perform the two fit tests each time he places the mask over his face.

PREPARATION

1. Installer shall examine and approve concrete substrate for conditions affecting performance of finish. General Contractor shall correct conditions that are found to be out of compliance with the requirements of this section. Repairs are not acceptable unless specifically approved on a case-by-case basis by the Architect.
2. Verify that base slab meet finish and surface profile requirements.
3. Provide floor clean of materials and debris.
4. Protect adjacent surfaces as required to prevent damage by the concrete polishing procedure.
5. Setup grinding machine, dust extraction system, tooling, and generator.
6. Ensure floor cured to accept polishing application.

POLISHED CONCRETE APPLICATION

1. Applicator shall examine the areas and conditions under which work of this section will be provided and the General Contractor shall correct conditions detrimental to the timely and proper completion of the work and the Applicator shall not proceed until unsatisfactory conditions are resolved.
2. Grind the concrete floor to within 1 -2 inches of walls with 25, 80 and 150 grit removing construction debris, floor slab imperfections and until there is a uniform scratch pattern and desired concrete aggregate exposure is achieved. Vacuum the floor thoroughly.
3. Apply material approved by architect for color effects in accordance with the architectural drawings and the manufacturers recommended guidelines.
4. Fill construction joints and cracks with filler products as specified in accordance with manufacturers instructions coloured to match (or contrast) with concrete color as specified by architect.
5. Apply densifying impregnator in accordance with manufacturer's instructions.
6. Grind the floor to within 1 - 2 inches of walls with metal bonded diamond grits of 150, grinding 90 degrees from each previous grind and removing all the scratches from the previous grit. Vacuum the floor thoroughly after each grind.
7. (If specified) Grind the edges with 25, 80 and 150 grit grinding pads, removing all of the scratches from the previous grit. Vacuum the floor thoroughly after each grind.
8. Polish the floor, to desired sheen level, with phenolic resin bonded diamond grits of 100, 200, 400, 800, 1500 and 3000, first polishing the edges (If specified) with pads of the same grit and then the field of the floor, removing all scratches from the previous grit. After each polish, clean the floor thoroughly using clean water and an autoscrubber or a mop and a wet vacuum.
9. Apply a seal coat in accordance with the manufacturer's specifications.
10. Cleanup and disposal of silica dust must be done in a controlled manner ensuring that there is no accidental release of the dust. The following points must be adhered to;
 - All dust from vacuums is to be double bagged
 - Garbage bags containing silica dust will be transported to ground level on their own (i.e. not with other garbage types such as scrap wood which may cause bags to be penetrated)
 - Bags containing silica dust should, as much as is possible, be removed from the site for disposal in separate garbage containers.
 - Emptying of vacuums or cleaning of tools should be, as much as is possible, done in an area which is away from common areas such as lunch rooms or access/egress routes.
 - Under no circumstances is air to be used for clean up.
 - Dry sweeping should not be done unless used in conjunction with a dust suppressant.
11. All workers who are exposed to fall above 10 feet will use fall protection (arrest or restraint) in accordance with the site specific fall protection plan.
12. Upon completion, the work shall be ready for final inspection.