TAMAN
DIAMOND TOOL SOLUTIONS

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Short Guide to Mechanically Polished Concrete

Mechanically polishing a floor is a process that involves using specialized equipment to grind and polish concrete to achieve a smooth, glossy finish. Here are the general steps for mechanically polishing a floor:

Clean - Begin by cleaning the floor thoroughly to remove any dirt, dust, or debris. If there are large holes or cracks in the floor repair these with a repair agent prior to grinding.

6/16/30 Grit - Begin by using coarse grit metal bond diamond tooling (6/16/30). Continue grinding until the desired level of aggregate exposure is achieved and all high spots have been removed.
- This stage of the grinding process typically takes the longest.

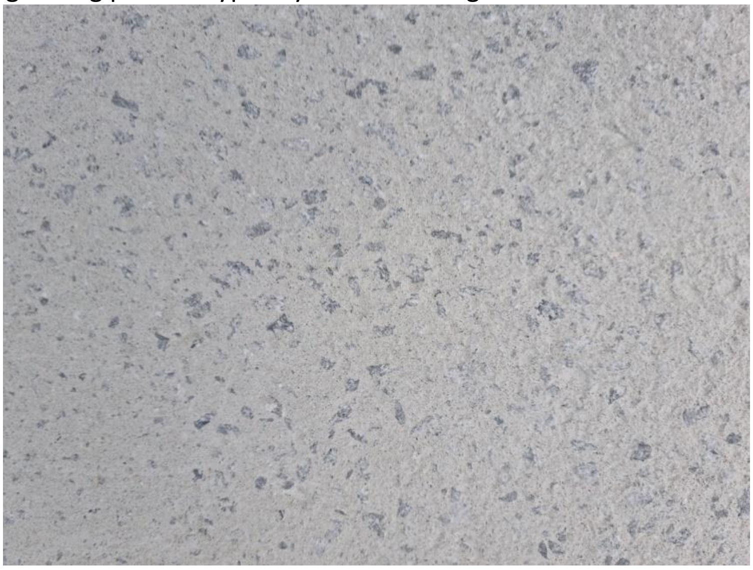

Figure 1 Concrete After 6 Grit Metal Bond Diamonds

60 Grit - Remove the coarse grit tooling and fit the machine with 60 girt metal bond tooling.
- The purpose of this stage is to remove the major scratches left from the coarse grit tooling. You should be able to see a noticeable difference.
- At this point the concrete should be even and smooth

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Figure 2 Pinholes in Concrete After 60#

Figure 3 Scratch Pattern After 60#

Densify & Grout – Apply densifier and polishing grout to the concrete.

- Apply densifier to the concrete using a low-pressure sprayer ensuring the entire surface is wet. Use a micro fibre mop (or similar) to evenly spread the densifier. Remove any excess densifier from the surface. Do not allow the densifier to pool on the surface as this will cause discolouration. – Refer to data sheet for further information.
- Apply polish grout to the concrete using a low-pressure sprayer. Use a soft broom or micro fibre mop to evenly spread the grout over the area.
- While the grout is still wet use 60 grit diamond tooling to work the grout into the concrete. Ensure you grind the surface long enough so that the mixture of concrete dust and polymer becomes a thick paste to allow the grinder to drive the paste into the pores of the concrete.
- During this process you may notice dark marks on the surface behind the grinder. This can be caused by applying too much grout to the concrete. Do not panic as these marks will be removed in the next step.
- Once the polish grout has been applied to the entire surface and allowed to dry use 60 grit diamond tooling to remove the excess grout on the surface. Ensure that all excess grout has been removed before proceeding.
    - Recommendation: Only apply enough grout to cover 3-4 sqm at a time. This will ensure that the grout is still wet and will allow the grout to better fill the pores of the concrete.

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Figure 4 Scorched Excess Grout

120 Grit – Fit the machine with 120 grit metal bond diamond tooling and begin grinding the surface.

- The purpose of this stage is to remove the scratch marks left behind by the 60-grit metal bond diamond tooling.
- Vacuum the floor and assess the state of the concrete before proceeding.
    - If there are still scratch marks remaining from the 60-grit metal bond diamond tooling continue grinding.
    - If there are still pin holes in the concrete, apply polish grout again using the 120 grit metal bond diamonds. Remove the excess grout using the 120 grit metal bond diamonds.

Densify – Apply densifier to the concrete.

- Apply densifier to the concrete using a low-pressure sprayer ensuring the entire surface is wet. Use a micro fibre mop (or similar) to evenly spread the densifier. Remove any excess densifier from the surface. Do not allow the densifier to pool on the surface as this will cause discolouration. – Refer to data sheet for further information.
- For best results allow the densifier to dry overnight.
- Ensure that the densifier has dried before proceeding.

50 Grit Polishing Pucks – Fit the machine with 50 grit plastic resin or ceramic resin polishing pucks and grind the floor.

- The purpose of this stage is to remove the scratches left by the metal bond diamonds.

Densify – Apply densifier to the concrete.

- Apply densifier to the concrete using a low-pressure sprayer ensuring the entire surface is wet. Use a micro fibre mop (or similar) to evenly spread the densifier. Remove any excess densifier from the surface. Do not allow the densifier to pool on the surface as this will cause discolouration. – Refer to data sheet for further information.
- Ensure that the densifier has dried before proceeding.

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100 Grit Polishing Pucks – Fit the machine with 100 grit plastic resin or ceramic resin polishing pucks and grind the floor.
200 Grit Polishing Pucks – Fit the machine with 200 grit plastic resin or ceramic resin polishing pucks and grind the floor.

Figure 5 200 Grit Polish Prior To Sealer

Densify – Apply **Lithium** densifier to the concrete.

- Apply densifier to the concrete using a low-pressure sprayer ensuring the entire surface is wet. Use a micro fibre mop (or similar) to evenly spread the densifier. Remove any excess densifier from the surface. Do not allow the densifier to pool on the surface as this will cause discolouration. – Refer to data sheet for further information.
- Ensure that the densifier has dried before proceeding.

400 Grit Polishing Pucks – Fit the machine with 400 grit plastic resin polishing pucks and grind the floor.


Figure 6 400 Grit Polish After Sealer Has Been Applied

Densify – Apply **Lithium** densifier to the concrete.

- Apply densifier to the concrete using a low-pressure sprayer ensuring the entire surface is wet. Use a micro fibre mop (or similar) to evenly spread the densifier. Remove any excess densifier from the surface. Do not allow the densifier to pool on the surface as this will cause discolouration. – Refer to data sheet for further information.

800 Grit Polishing Pucks – Fit the machine with 800 grit plastic resin polishing pucks and grind the floor.

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1500 Grit Polishing Pucks – Fit the machine with 1500 grit plastic resin polishing pucks and grind the floor.

Figure 7 1500# Polish After Application of Sealer

3000 Grit Polishing Pucks – Fit the machine with 3000 grit plastic resin polishing pucks and grind the floor.

Figure 8 3000# Polish Prior to Buffing

Clean – Vacuum the floor and remove any dust on the surface.

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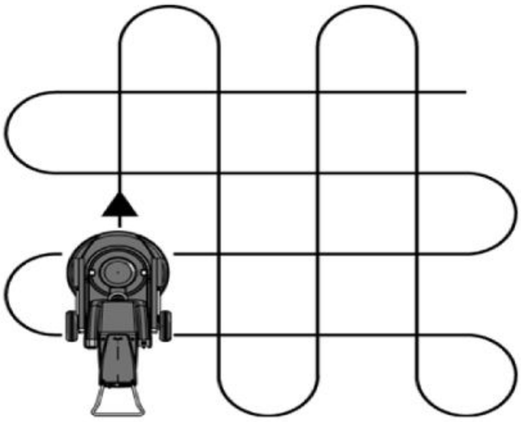
Seal – Apply penetrative sealer to the floor using a low-pressure sprayer, ensuring the entire surface has been evenly coated. Once the sealer has had time to penetrate sufficiently (30-60 minutes) use a micro fibre mop to remove any excess material.

- Do not stand in wet sealer during this process as this may cause staining to occur.
- A second coat may be required depending on the porosity of the concrete, if two coats are required use the wet-on-wet application technique.
- Once the sealer has dried, preferably overnight, buff or polish to ensure any residue left during application is removed.

Note: Always wear personal protective equipment, including a dust mask and safety goggles, when polishing concrete. It's important to follow the manufacturer's instructions for the densifier and sealer and to ensure you have enough ventilation when using the product.

General Grinding Technique

- When grinding a floor, keep the machine moving as a constant speed.
- Ensure that each pass overlaps with the previous pass to ensure that no crop lines form in the surface.
- Grind in a North - South pattern and then in an East - West pattern – see illustration below. For each stage of the process ensure that a North-South and East-West pass is conducted. This will ensure and even grind and reduces the chances of missing an area of the floor.
- Grind the edges of the area first.



Chemical Applications

Read and follow the technical data sheets of each product. This guide is meant to be read in conjunction with the technical data sheets.

The information and recommendations relating to the above process is given based on current knowledge and experience. Due to variances in material substrates and site conditions no warranties implied by law or, fit to purpose of the product can be implied. We accept no responsibility for loss or injury due to the incorrect handling or improper use of the product, limiting the cost of our liability to the replacement product cost only. Always refer to current Product Technical Data Sheets.