Spec Floors
Spectacular Concrete Finishes
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EXPOSED CONCRETE FLOORING
GUIDELINES FOR NEW SLABS

These guidelines must be followed to ensure we can deliver our clients the best results possible flooring system and provide a warranty.

INSTALLATION OF THE CONCRETE

Ultimately we are seeking a completely flat concrete finish with minimal air pockets and even distribution of aggregate. The following will assist towards the achievement of these key points:

1. Concrete should be 32mpa without any additives (curing agents, shrinkages reducers etc.)
2. The use of retarders or curing agents should be avoided due to chemicals used in the polishing process. The only pre-approved additives are: "Sika Film" (curing agent) and "Eclipse" in appropriate ratios (shrinkage reducer). Any others used may void warranty **unless approved prior to pour**.
3. When pouring inside brick work the use of neoprene foam to raise the height of the actual slab by approximately 5mm above the brickwork avoids damage and allows for simpler troweling and grinding.
4. The slab should be installed as per exposed aggregate – poured, vibrated and screeded as you go. Footprints must be filled with concrete not slurry - this eliminates footprints (areas with no aggregate showing) in the finished floor.
5. Tolerances for finished surfaces shall not exceed
    - For any 3 metre length: + / - 3mm (not more than 3mm below a 3000mm straightedge)
    - For any 1 metre length: + / - 2mm (not more than 2mm below a 1000mm straightedge)
    - For any 300mm length: + / - 1mm (not more than 1mm below a 300mm straightedge)
6. Any exposed edges should be finished with an edging trowel (push in not down) ensuring above tolerances are maintained, edge shrinkage is usually apparent.
7. Any edges to brick or c section should be finished proud of edge, the setting of melamine with silicon will assist practically with C section.
8. Troweling the surface using hand or mechanical (helicopter) trowel will reduce the size of air pockets and ensure a flat finish. A second helicopter troweling to achieve burnished finish will also disperse additional air pockets and seal off the top of the slab. This will also help with moisture retention and therefore slow the initial curing down and assist in reduced surface cracking. For large slab areas it may be beneficial to have more than one operator completing this step.
9. Shower recesses only require a 5mm fall. To achieve this set a sacrificial floor drain 5mm below floor height and finish concrete 3 – 4 mm above floor drain. Ensure cement is worked around drain to ensure tight encased drain.
10. Waste water pipes must be left protruding from the slab as we cut them off level with the slab during the polishing process. If pipes are not to be cut off they must be marked clearly.
11. Floor heating and other wires protruding from the concrete must have conduit to protect them from being cut off and be clearly marked. Hydronic floor heating requires a layer of mesh secured soundly over the hydronic system and concrete needs to be finished 30mm above that. After we grind the hydronic system will be the required depth of 25mm.
12. Casting or seeding of aggregate, stone or other polishable objects (i.e. glass) into the top layer of should be done after the screed and before bull floating and troweling.

CURE PERIODS

After years of experience and dedication to the concrete polishing industry we have found that to achieve the best results with exposed polished concrete a 2 to 3 week cure period is required before any building work, including framing, commences. Spec Floors will only commence grinding work after this cure period. We do this for a number of reasons:

- 2-3 weeks allows for the optimal concrete density to be achieved,
- 2-3 weeks ensures grouting systems will be effective
- 2-3 weeks ensures the chemical reaction with the densifier to be achieved effectively

Grinding before sufficient cure can result in substantial stone loss and an inferior finish.

Please provide us prior to start of:

- The batch report (which includes all mix details such as additives, oxides, aggregates, MPA, etc.)
- Concrete supplier (name and contact details)
- Concrete installer (name and contact details)

This enables us to have the right products on hand and communicate with others involved in the flooring in a timely and efficient manner when required.

GENERAL INFORMATION FOR SLABS

1. CONCRETE WILL CRACK – To reduce the amount of cracking the following options are available:
   - Addition of extra steel – standard mesh as per BCA may be enhanced with heavier and additional steel
   - Increasing the strength (mpa) of the concrete – This method will also enhance the shine for polished concrete and strengthens the colours of cement if added. It will also speed up the curing period. We recommend pouring at 32 mpa.
   - Sound base for slab whether suspended or not (additional supports, compact fill) – correct site preparation and cooler weather will help reduce cracking.
   - Key areas include internal corners and along beams and piers (strip piers will dry at different rates to the remainder of the slab and will cause shrinkage cracking)
   - Timing, (Early morning pours preferable due to reduced work time with MPA) also taking weather forecasts into consideration should be of high importance when pouring for polished concrete.

2. The slab mix can be tailored to cater to the desired appearance of the finished floor with a large variety of options available. You may choose from different coloured aggregate mixes, different sized aggregate, cement colour, sand colour and/or add coloured oxides to tailor your slab. You may also decide to cast specialty aggregate, stone, gems, glass or other polishable objects into the concrete. All slab mix selection need to be discussed with the concrete supplier and concreter as they will be responsible for the cost, supply and installation of the slab.
3. As a guideline aggregate has an approximate equivalent of 160 MPA. Standard concrete has an MPA of approximately 25. Therefore, polished concrete with the addition of hardeners improves the cement MPA by 3 - 4 time times to 75 – 100 MPA. The result is a much harder floor surface than standard concrete. *Note: hardeners are only used during the polished concrete process and burnished acrylic process – not coating systems.*
4. If poured correctly, full exposure polished concrete floors will have approx. 4mm – 5mm removed from the concrete surface. This should be allowed for in set downs to adjoining floor coverings to ensure an even, flat floor upon completion. (i.e. 5mm polished concrete plus 11mm tile plus glue = 16mm set down to adjoining floor).

SPECIAL NOTE: While you are free to choose your own concrete supplier please be aware that our work is very reliant on the content within mixes being used. Regrettably for this reason all our warranties and quality assurance are void if using Baxters concrete or Mawsons concrete and/or any non-approved curing agent or additive in the concrete mix.

GLOSSARY OF POLISHED CONCRETE TERMINOLOGY

Exposed: aggregate within the concrete mix that is revealed during the concrete grinding for polishing or coating process

Casting/Seeding: the process of manually adding by hand products into the concrete surface during the pour process

MPA: Strength/hardness rating of concrete

Grouting: A step which uses machines to fill small cracks, air holes and imperfections to flatten the surface and enhance floor appearance