

# Mapping out mistakes in tiling

Tiling is a multi-faceted task that requires cooperation and an understanding of all parts of the job. Jerry Tyrrell maps out the process required and the need to avoid 'shortcuts'.

Mistakes in tiling can cost almost as much as a waterproofing failure. Yet most builders don't know why these problems keep occurring. The client or architect chooses a product and does not bother to research whether it is appropriate or to coordinate what set, adhesives, grouts and joints are needed.

Most of the very good tilers I have dealt with know or want to know about prevention. But they need your support. And rarely do all the stakeholders get together to 'scheme' success.

So let's get down to work. There is a lot to learn and the following are the main ingredients in a successful tiling job.

The author would like to acknowledge the input of Colin Cass, a member of several Australian Standards committees and the Master Builders NSW tile and stone consultant. Colin's company consults on prevention of problems with tile, stone and waterproofing and offers efflorescence avoidance advice. Contact [Techtile@gmail.com](mailto:Techtile@gmail.com) ■

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## Next issue:

*Building bushfire safe houses will become commonplace and easy to do if every builder knows the basics. My next article will look very closely how building survive in bushfires and what we need to learn about Bushfire Safety,*

*Please email me any thoughts or experiences at [jwtyrrell@tyrrells.com](mailto:jwtyrrell@tyrrells.com)*

## Before tiling commences

- Check tiles or stone is suitable for the application
- Check waterproofing is complete and dry
- Ensure waterproofer seals shower tap bodies/roses/bath spouts to surrounding render/linings prior to tiling
- Confirm accessories, grout, trims, fittings
- Confirm type and location of movement joints
- Check if stone needs pre-sealing on back before laying
- Check the stone is not 'moisture sensitive' as it may curl after laying
- Obtain written maintenance instructions for stone tiles from the supplier

## Waterproofing

- Floor surfaces should not pond water prior to waterproofing
- System must be compatible with glues
- Review stain/bleed risk of dark/bitumen based products
- Comply with curing times
- Puddle (leak control) flanges to all wastes especially in sheet flooring
- Expose top of the waterstop angle in hobless showers

## Efflorescence avoidance

- To avoid efflorescence in external tiling consider the use of a membrane over the tilers screed
- Falls should always be in the substrate, if water ponds, top the floor before waterproofing
- Ensure wastes allow subterranean water to drain (puddle flanges)
- Install waterstop angles one nosing back from the top of external stairs
- Seal the tiles and joints to limit rainwater entry

## Set out

- Clarify set out and laying pattern with client in all areas.

## Basic rules

- Centre tiles from most visible view
- Start with full tile at entry of area where possible – part cutting of this first tile might be necessary if a small strip could be left against any wall
- Avoid small cuts wherever possible
- Align floor and wall joints where specified including up and over hobs/bath walls
- Check the falls in floors will be adequate
- Ensure the waterstop at the shower will be flush with tile tops for frameless screens and protruding 5mm for framed screens

## Surface preparation

- Ensure surfaces are clean, dry and not contaminated by curing compounds, release agents etc. The quick test is sprinkle some water on the concrete, if it doesn't soak in and make the concrete go darker the surface will need cleaning or scabbling back
- Prime wall boards according to the adhesive manufacturer's instructions
- Check substrates for soundness, trueness and deflection within defined limits

## Safety

- Select tiles which are not slippery when wet (guidance from Standards Australia Handbook 197)
- Do not create ½ steps
- Avoid sharp corners/edges especially where children can fall

## Durability

- Exterior tiles should be frost and salt resistant if exposure is likely
- Tiles around pools must be chlorine and salt resistant
- Check the viability of using tiles/stone for driveways/garages/carports
- Discourage the use of very dark materials in sun exposed locations



## Getting the process right

- AS 3958.1 2007 on tiling calls for a minimum 65% adhesive contact coverage for walls and 80% or more for floors
- Tiles larger than 500mm square should have adhesive buttered onto the back as well as the floor
- Creating falls in floors using large tiles is difficult – so avoid using for very small bathroom
- Transverse/radial cuts in large tiles at floor wastes may be necessary
- Decide how visible edges will be finished – either plastic/metal tile trim, mitre cut, polished if stone or glazed edge if you are lucky
- Lipping between adjoining tiles must generally be less than 2mm (1mm if the tiles are polished)
- Directly adhering large tiles to particle board or fibre cement sheets is problematic – as tiles may crack over joints. If proceeding, confirm sheet and tile adhesive manufacturer's instructions are followed
- Avoid tiling over tiles unless surface preparation and adhesive is approved and the old tiles are sound

### Glues and grout

- Use appropriate glues especially where movement risk is high – flexible adhesive class C2S1 are preferred especially on slabs less than 6 months old
- Proprietary grouts with mould control additives are preferred, if site mixed grout is used the mix should be no weaker than 1 part cement to 3 parts sand
- Avoid grout joints less than 3mm wide for floor tiling
- Clarify grout colour with client – but advise that uniform colour is seldom achieved
- Consider using epoxy grout for if greater hygiene/durability required
- Ensure grout extends full depth of the tile ie remove glue residue
- Complete bedding of toilet pans/bidets with matching grout

### Expansion joints

- Expansion joint placement to comply with AS 3958.1 2007
- If proprietary joints are used they should be a minimum 12mm wide
- Ensure joints in main structure pass through the tiling too
- Require joints at change in geometry of areas and at doorways in long runs of tiling
- Joints should be full depth of bed
- Detail horizontal joint between slabs/structure and tile beds on edges of balconies/stairs – sealant joint advised
- Cut joints in tiling over waterproof membranes by raking out the mortar while it is still wet

### Edge finish stone

- Agree finish to reveals ie mitre or lap
- Polish cut edges
- Agree arris detail (birds-mouth, pencil round, etc.)

### Stairs/copings

- Clarify detail with client
- Select a non slip edge or nosing where available
- Edge of nosing/edge tiles to have visual luminescence difference in public areas

### Doors in wet areas

- Instruct contractor to remove any timbers which will be embedded into the tile bed – ie cut jambs 3mm clear of finished tiles and paint base cut end grain. Agree sealant to be used between base of jamb and floor tile.
- Joints between different floors to be located under door

### Warranties/guarantees

- Get written manufacturer's warranties for any stone or composite material you use. This is especially vital for new, untested materials
- Same applies for glue, grout, sealant sealer systems – which should come from the same supplier

### Spare parts

- Always get tiler to price to leave full box of every tile
- Record mix of any coloured grout

### Pools/tanks/ponds

- Detail these with the architect and all technical people especially joints, edges, drainage, lighting, jets, waterproofing
- Avoid taking responsibility for waterproofing suspended pools
- Do not take responsibility for failures in substrates eg render pitting or blistering
- Agree slopes to pool/drainage
- Waterproofing must supervise installation of all lights, posts, fittings

### Sealers

- Clarify if pre-sealing is required for all stones/composite materials
- Apply to all surfaces if required in high stain risk areas
- Apply promptly after completion of works
- Photograph surface upon handover to client/builder to avoid unfair future accusations concerning stains

### Where to find help

- Australian Tile Council  
[www.atcnsw.com.au](http://www.atcnsw.com.au)
- Australian Stone Advisory Association  
[www.asaa.com.au](http://www.asaa.com.au)
- Adhesive and waterproofing manufacturers all offer product use advice

### Gradients

- Minimum 1 in 100 (10mm in 1m) 1 in 60 to 1 in 80 is preferred
- Floor must grade to wastes or other designed outlet
- Slope hobs around showers inwards to shower. Mitre cut corner tiles
- Client to accept flat surface where tiles are laid under bath rims
- Slope all stair treads minimum 5mm to the nosing
- Consider not cutting 'L' shaped tiles as sometimes they will crack after laying

### Joint sealants

- Use proprietary bathroom grade sealants (colours to match grout) to all:
- Corners – vertical and horizontal
  - Tops of skirting tiles
  - Bath rims – carefully bed back rims which will be difficult to seal
  - Basin rims
  - Rear of pans to tiles – check extent with client
  - Benchtop/splashback
  - Cupboard edges
  - Laundry tub to wall joints
  - Confirm that sealants for stone are 'non-bleed' type or the stone can discolour

### Warnings

- Protect waterproofing, PC items and finished tiles, but don't tape down non breathable protection such as plastic sheet
- All wet area adhesives must be suitable for application including full immersion (always wet)
- Follow adhesive manufacturer's instructions regarding curing of toppings or screeds prior to glue application
- Use all tiles from one batch for each complete area
- Blend stone to achieve consistent pattern
- Use hobs or balcony edge trim to avoid salt staining to finishes or advise client in writing that salt staining will occur

Happy



Customer

