# Stone, Tile & Grout Cleaning

# Acknowledgement

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# Disclaimer

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# Introduction

## Identification of Stone & Tiles

The accurate identification of the stone or tile that is being cleaned, restored or sealed is perhaps the most important step to get right in stone and tile care. Listed below are the stones and tiles that you will most probably encounter. They are broadly divided into two groups; *Natural Stone and Man-Made*

## Good Business Practice

Professional stone, tile and grout cleaners are expected to provide the following:

### *Quality service*

This incorporates a reliable, prompt and efficient service. The client should be advised as to all procedures. The attending technician or technicians should be punctual, polite, helpful, and understanding of the clients' needs in relation to their goods to be cleaned. They should also be correctly attired (wear clean, correct uniform, etc.)

### *Quality equipment*

This means vehicles and equipment that must be readily available and in good working order at all times. All equipment should be properly labelled with the Company name, telephone numbers and address as well as any appropriate safety advice. All equipment and vehicles should be checked and maintained regularly, without waiting for breakages to occur. Each vehicle should be presentable and properly signed written. It should be clearly defined who is responsible for the maintenance of equipment and vehicles to ensure their availability and readiness.

### *Qualified staff*

This requires that all personnel involved in all of the procedures are properly trained and skilled in their areas of involvement. This could include the receptionist (telephonist), office staff, on-site technicians. This could mean attending appropriate Training courses relevant to the job specification of each member of staff involved.

Communication skills are of the utmost importance for all personnel involved in the Service industry.

### *Documentation*

Provision of professional documentation, which means the availability of all appropriate forms, starting with the initial telephone call checklist, pre-inspection forms, through to a final account.

### *Chemicals, etc.*

Provision of chemicals and appropriate ancillary supplies must be constantly maintained and re-stocked. All chemicals should be clearly labelled and stored in appropriately ventilated areas. For all chemicals that are used and carried either at the factory/warehouse, in each vehicle or on site safety data sheets (SDS) must be available.

# *Health and Safety*

Ensuring safety is a prime responsibility of any professional. These incorporate provision of a healthy and safe environment for the technician as well as customers.

## Chemical Safety

### *General Chemical Safety*

1. Store chemicals securely in correctly labelled appropriate containers.
2. Containers used on site should be correctly labelled
3. All safety data sheets (SDS) must be available wherever chemicals are being used or carried (vehicle, on site, factory)
4. Carry and use protective equipment such as chemical resistant gloves, respirators with appropriate filter cartridges and eye protection.
5. Dispose of waste and unused chemical properly in accordance with local regulations as per Australian and New Zealand standards
6. When mixing chemicals for cleaning upholstery always read the label of the container and mix chemicals according to the manufacturer's directions
7. Always read labels and observe safety considerations

8. Never mix chlorine bleach with ammonia as it creates ammonium gas, which is poisonous
9. Do not sniff chemicals or containers to find out what it is. If in doubt, throw it out
10. Wash your hands well after handling any chemicals or containers with chemicals
11. Avoid skin contacts with chemicals. Acids and alkalise can burn the skin
12. Hydrofluoric acid rust remover has an anaesthetic effect and is dangerous because it attacks skin rapidly and the damage will not be felt immediately. It should never be used without wearing rubber gloves
13. Continuous exposure to even the mildest of chemicals can lead to problems. Nearly all chemicals can have a threshold limit value (TLV). This rates the parts per million at which exposure may become a problem
14. Always cap your chemicals immediately following their use
15. Never leave any chemicals unattended
16. Ensure that children or pets do not have access to the area while chemicals are being used

## *Solvents Chemical Safety*

1. Always store in properly labelled, manufacturer approved containers
2. Wear protection as required
3. When dry cleaning fabrics using an extraction system it is important to use personal protective equipment designed for use with specific solvents
4. When choosing a respirator to use with any dry cleaning solvent, wear an organic vapour respirator and choose cartridges approved for the specific solvent that you are using
5. Disposal of dry cleaning solvent should be done at an approved solvent disposal site and/or in accordance with local laws
6. Do not over-heat solvent as solvents are combustible (can explode)

7. Always provide adequate ventilation during and after cleaning until all fumes have dissipated. This can include the use of drying fans to blow in fresh air

8. When using an extraction system to dry clean fabrics on location always vent the exhaust outside the structure taking care that fumes cannot build up in other areas like underground carparks, basements or go into air-conditioning air intakes and the like

# Equipment Safety

## *Electrical Safety*

1. Have all electrical equipment regularly checked and serviced. Inspect power cords for wear, fraying or other damage
2. All electrical equipment that is not marked as being double insulated, should be properly earthed (grounded)
3. Use an earth leakage protection device and check all power points are earthed
4. Never disconnect safety features on equipment
5. Do not allow electrical cords or plugs to become wet
6. If you blow a fuse in a fuse box, replace it with the correct size fuse wire (15 Amps for power points are standard throughout Australia)
7. Disconnect power cords from sockets before doing any maintenance on your Equipment
8. Disconnect electricity before filling equipment with water

# Site and Personal Safety

1. Arrange equipment so that it is out of traffic ways
2. Arrange hoses and power cords so that people cannot trip
3. Always ask people to keep children away from the work area at all times
4. When not using hoses, turn off pressure hoses to prevent accidental spraying of fluids and keep a tool connected to the vacuum hose to prevent accidental injury

5. Keep spotters under cover and under strict supervision at all times
6. Use drop sheet to help prevent slippery floors
7. Post caution signs to warn customers that floors may be slippery and give verbal warnings as well
8. Ask customers if any occupants suffer allergic reactions, and take appropriate actions or precautions. Certain chemicals (usually perfumed deodorants used in some chemicals, solvents, alkaline or acid solutions or enzymes) or even just raised humidity levels can trigger attacks in hypersensitive people. Sometimes the fine dust kicked up by pre-vacuuming or moving fabrics about can fill the air with Dust-mite soiling (a very well-known allergen)
9. Use correct lifting techniques to avoid back injury

# Natural Stone

## Granite

### *Type and Identification*

Granite is very hard stone with a grainy appearance

Granite, which makes up 70–80% of 's crust, is an igneous rock formed of interlocking crystals of quartz, feldspar, mica, and other minerals in lesser quantities. Large masses of granite are a major ingredient of mountain ranges. Granite is a plutonic rock, meaning that it forms deep underground. Slow cooling gives atoms time to migrate to the surfaces of growing crystals, resulting in a coarse or mottled crystalline structure easily visible to the naked eye

### *Typical Finishes*

#### *Polished*

A high gloss (mirror) finish can be imparted to Granite by grinding with successively finer polishing mediums. This finish is considered the most reflective, finest and smoothest finish available

The full colour, depth, and crystal structure of the stone is visible. Your stone appears darker and the colours seem richer. A polished finish will highlight the character of your natural stone.

The harder the stone is the harder it is to polish. Therefore polished granite will retain its shine for a long time.

A polished finish seals or closes more of the pores of the stone surface which helps the stone repel moisture. It is nearly impervious to weather and chemical wear. A polished finish does not mean you don't need to seal your stone. Some stones are more porous and need sealing regardless of the surface finish.

## *Honed*

A Honed finish can be considered to be a partially polished surface and can be described best as a satin, matte or semi polished finish.

Varying levels of gloss can be obtained including:

- High reflection – near full polish (close to a polish)
- Egg shell finish – no gloss under normal light

Some loss of vibrancy occurs with the lower gloss levels. It is normal practice is to seal any honed surfaces as they are less stain resistant than a polished finish.

Honed finishes are generally used for internal or external paving as they generally have higher slip resistance and are less prone to discernable wear patterns.

## *Exfoliated (flamed)*

An exfoliated (or flamed) surface finish is achieved by exfoliating (or flacking off) the outermost grains by passing a granite slab or panel under an extremely hot flame of around 1100°C to leave a rough textured surface. The crystals exposed in this way are much darker than a sawn surface despite having no gloss.

Exposed edges are generally not flamed to avoid ragged edges.

## *Sandblasted*

Beautiful designs and names can be sandblasted on the granite. A flat sheet of rubber is first placed on top of the granite, and the design is then cut out of the rubber. Fine particles of abrasive are then blown by air pressure against the monument. The abrasive cuts away the granite not protected by the rubber. The rubber is removed, leaving a beautiful design in the monument. This is called sandblast carving.

## *Sawn*

Most granite blocks taken from the quarries are cut into slabs of varying widths by modern circular saws with industrial diamond tips. The high-speed, automatic computer-operated saws have greatly increased the production capacity.

## *Typical Applications*

- Internal and external flooring,
- Benchtops
- Building facades
- Paving

## *Compatibility with Chemicals*

### The Dos and Don'ts of Cleaning Granite

**DO:** Make sure your granite countertop is sealed. While granite is a very hard surface and less porous than marble, unsealed or weakly sealed granite will soak up oils, spills, and stains. To check whether your granite is sealed, leave a few drops of water on the surface. If it beads up, you have a secure seal. If after a few minutes the water has soaked into the granite, then it's time to reseal the stone.

**DON'T:** Use harsh or abrasive cleaners and sponges, Windex, acidic cleaners like vinegar, lemon, lime, or anything with ammonia or bleach. Frequent use of these chemicals will dull and weaken the sealant over time. Basically, the harsher the cleaner, the quicker it will break down the sealant.

**DO:** Wipe up spills as soon as you notice them.

**DO:** Use warm water, a mild or gentle dish soap, and a nubby washcloth or microfiber cloth for daily wipe downs.

## *Sealing Techniques*

Responds best to solvent borne sealers. Low solids sealer best for polished granite

## *Special Notes*

Granite is an igneous stone. Granite has low porosity. Absorption is 0.02-0.4%.

# Marble

## *Type and Identification*

Marble is a porous stone with a fine grainy appearance & distinct veins.

Marble is a metamorphic rock that may be foliated or non-foliated, composed of recrystallized carbonate minerals, most commonly calcite or dolomite. Geologists use the term "marble" to refer to metamorphosed limestone; however, stonemasons use the term more broadly to encompass un-metamorphosed limestone. Marble is commonly used for sculpture and as a building material.

## *Typical Finishes*

### *Polished*

A polished finish has a highly reflective surface, which will display the vibrancy of the stone's colours as well as the "character" of the stone. The texture is very smooth and is not very porous. The full color, depth, and crystal structure is visible with a polished finish. It's also easier to keep a polished stone with clean and free of stains because its seal closes the pores of the stone's surface and repels moisture.

### *Honed*

Honed means the surface of the stone has been ground to a smooth, flat, consistent surface. For stones with a natural shine such as granite or marble, the polish or shine is removed leaving a matte (unpolished) surface with little to no reflection and no bumps or ridges. It is fairly porous and natural looking; the color will be visibly lighter than a polished finish. A honed finish may be preferred for floors, stairs and other areas that must easily withstand foot traffic.

### *Sawn*

Is the surface resulting after a block is sawn into slabs using a Diamond Saw (Block Saw, Diamond Wire Saw or Diamond Gangsaw). Once cleaned of the sawing swarf the surface should be smooth probably with some saw marking evident. Diamond Sawing can be carried out on all natural stones

### *Tumbled*

Manufacturers of tumbled marble literally put the stones through a tumbling process. This means they are placed in a drum that is filled with abrasive materials. It includes a mixture of water, rocks, sand and other abrasive materials that cause the stones to age and achieve a distressed look. The drum is then turned or tumbled in order to create the unique finish. This marble is usually cut in larger proportions and is of thicker width.

## *Typical Applications*

- Internal flooring
- Benchtops
- Feature walls
- Building facades
- Washrooms

## *Compatibility with Chemicals*

As compared to granite, marble has a soft surface and is sensitive to acid. By this characteristic, polishing marble needs low pressure or power than granite but care has to be taken when using chemical agents such as rust removers, coating agents, sealants, and detergents. Even spilled orange or lemon juice leaves stains on bare marble surface.

Never use any acid on marble. Avoid heavy caustic detergents.

**What are the DO's and DON'Ts of Marble?**

- DO take care, as marble scratches easily.
- DO blot up spills immediately to minimize permanent damage to the stone.
- DO clean surfaces regularly with neutral cleaners designed for stone.

- DON’T use vinegar, bleach, ammonia, other general purpose cleaners, bathroom cleaners or tub and tile cleaners.
- DON’T use abrasive cleaners such as dry cleansers or soft cleansers.
- DON’T use alkaline cleaners not specifically formulated for stone.

## *Sealing Techniques*

Solvent or water borne sealers. Low solids sealer best for polished marble.

## *Special Notes*

Marble is a metamorphic stone. Marble has fair porosity. Absorption is 0.06-1.0%.

# Limestone

## *Type and Identification*

Limestone is a sedimentary rock with a smooth, granular surface of varying hardness. It is suitable for countertops, floors and other tiled surfaces. Limestone comes in neutral tones of black, gray, brown, yellow and white. While it can be polished, it can not achieve the same shine as marble or granite. However, limestone requires less effort to polish than marble or granite.

Limestone is a soft and porous stone with a very fine grainy appearance often with visible fossils

## *Typical Finishes*

### Polished

Polishing limestone will bring out the natural features of the stone. Regardless of how well it has polished, limestone requires regular cleaning and maintenance.

### *Honed*

Honed limestone is a frequently-used building material made into tiles and counters for all rooms of the house. Softer than marble, limestone has a distinctive look that may make a room feel more inviting or warmer than a highly polished marble. This is because most limestone cannot be ground to a polish, and is therefore "honed" or left with a matte finish. While many people will refer to the product as "honed limestone marble," limestone is actually a sedimentary stone, which when subjected to immense heat and pressure turns into marble. The confusion lies mostly in the finish; most limestones are honed, while most marbles are polished. Recently, there has been some crossover between the two, leading to misunderstanding.

### Sawn

This finish highlights the natural unrefined appearance that results from diamond frame-sawing. Light-grey in colour, the saw-marks remain clearly visible on the face. Often well-utilized on limestone for cladding and kerbing, this ready-rough finish is suitable for a multitude of uses.

## *Tumbled*

Limestone is available in a tumbled finish, reminiscent of European cathedral floors, which it has been named after; this ‘aged’ limestone gives an expansive, old world look.

Extremely durable this stone is suitable for residential and commercial environments both internal and external.

## *Typical Applications*

- Internal flooring
- Feature walls
- Washrooms

## *Compatibility with Chemicals*

Limestone and marble are very reactive to acid solutions, making acid rain a significant problem. Many limestone statues and building surfaces have suffered severe damage due to acid rain. Acid-based cleaning chemicals can also etch limestone, which should only be cleaned with a neutral or mild alkaline-based cleaner. Never use any acid on limestone. Avoid heavy caustic detergents.

**What are the DO's and DON'Ts of Limestone?**

- **DO** clean up spills immediately to minimize damage to your stone.
- **DO** clean surfaces regularly
- **DO** use a sealer to protect the stone.
- **DON'T** wait to clean up spills on stone.
- **DON'T** use cleaners that contain acid such as bathroom cleaners, grout cleaners or tub cleaners.
- **DON'T** use vinegar, bleach, ammonia or other general-purpose cleaners.
- **DON'T** use abrasive cleaners such as dry cleansers or soft cleansers.
- **DON'T** use alkaline cleaners not specifically formulated for stone.
- **DON'T** use scouring powders and abrasives because they will scratch the surface.

## *Sealing Techniques*

Solvent or water borne sealers. Water borne best for very porous limestone.

## *Special Notes*

Limestone is a Sedimentary stone. Limestone has high porosity. Absorption is 0.5-20.0%.

# *Travertine*

## *Type and Identification*

Travertine is quarried from ancient hot mineral springs in exotic lands, Travertine is a banded, more compact form of Limestone, characterised by the many holes and chambers evident through the stone.

Travertine is a porous stone. Naturally has open pits in the surface which are sometimes filled and honed.

## *Typical Finishes*

### Polished

A glossy, highly reflective surface

- Surface is very smooth and not very porous
- Polished crystals bring out brilliant colors and grains (400 to 3500 grit to polish stone)
- Shine comes from the natural reflection of the stone's crystals
- Polish can wear away due to heavy foot traffic and improper maintenance

### Honed

A flat matte to low sheen gloss

- Surface is very smooth, but very porous
- Many more and wider gaps in surface than polished stone
- Medium density
- Commonly used in low traffic areas or for aesthetics
- Colours are not as vibrant as a polished stone

### Filled and honed

The pits are part of travertine's inherent beauty, but you may prefer a smoother finish, which does not welcome and trap dirt and crumbs. To eliminate these natural pits, manufacturers fill them. The filler varies by fabricator but is most often either epoxy, a dust and resin mix or coloured cement. Some homeowners or installers choose to fill in tumbled travertine tiles on the job site. If the tiles have not been sealed beforehand, many of the crevices can be filled with grout. However, if the grout is rinsed too soon, some of the fillings may be washed away. Grout filling is also more prone to chipping. A better alternative is to apply a clear epoxy. When pouring epoxy, keep the area as clean and dust-free as possible while the resin dries, or the settling particles will mar the finish.

## Sawn

This finish can vary from a smooth to a rough texture depending on the type of saw blade used. Along with smooth finishes, sawn travertine is commonly used for patios as well as paving around pools.

## Tumbled

A slightly rough texture that is achieved by tumbling small pieces of marble, limestone or granite to achieve an old-world/worn appearance

## *Typical Applications*

- Internal flooring
- External flooring
- Pool surrounds
- Paving
- Feature walls
- Washrooms

## *Compatibility with Chemicals*

Travertine is etched by acids, including soft drinks and juice. Acid-based cleaning chemicals can also etch. Absorbs oils and other liquids and is more easily stained than marble. Therefore, putting Travertine in a kitchen or heavily used bathroom is not a good idea. Travertine should only be cleaned with a neutral or mild alkaline-based cleaner

Never use any acid on travertine. Avoid heavy caustic detergents

**What are the DO's and DON'Ts of Travertine?**

- **DO** clean up spills immediately to minimize damage to your stone.
- **DO** clean surfaces regularly
- **DO** use sealer to protect the stone.
- **DON'T** wait to clean up spills on stone.
- **DON'T** use cleaners that contain acid such as bathroom cleaners, grout cleaners or tub cleaners.
- **DON'T** use vinegar, bleach, ammonia or other general-purpose cleaners.
- **DON'T** use abrasive cleaners such as dry cleansers or soft cleansers.
- **DON'T** use alkaline cleaners not specifically formulated for stone.
- **DON'T** use scouring powders and abrasives because they will scratch the surface.

### *Sealing Techniques*

Solvent or water borne sealers. Low solids sealer best for polished travertine

### *Special Notes*

Travertine is a sedimentary stone. Travertine has fair porosity. Absorption is 0.1-2.5%.

# Bluestone

### *Type and Identification*

Bluestone is another name for the volcanic rock, Basalt. It is an extremely durable, hard stone with beautiful qualities that can vary dramatically. The stone itself is finely grained due to the rapid cooling of the lava as it reaches the earth's surface. Bluestone is usually grey to black in colour and was the favoured stone in the gold rush in Victoria with many significant Melbournian buildings being constructed with this type of stone.

Bluestone is a durable porous stone with grey- blue tones often with open pits and pores.

### *Typical Finishes*

#### Semi - polished

Bluestone can be honed right up to a semi polished or polish finish, due to the inherent hardness of the stone.

#### Honed

Honed Bluestone is a basalt product that once sawn, is then buffed with a honing machine to create quite a smooth non-porous surface. Honed bluestone is available in the sizes listed below and has a traditional, dark grey/blue look due the honing process which creates a lovely looking stone suitable for any residential or commercial project

#### Sawn

Sawn Bluestone has a smooth finish and is available in the sizes listed below. This product is a high density, durable stone and is light blue/grey in colour and features surface pours (commonly referred to as "cat paw") randomly across the tile. It provides a classic look and is ideal for any residential or commercial project.

## Exfoliated (flamed)

An exfoliated or flamed finish is one of the most popular finishes for external use where slip resistance is a concern. It is produced by applying a high-temperature flame to the surface of the stone which creates thermal shock and causes the inherent crystals to fracture, resulting in deeply textured surface ideal for external surfaces. This finish is mainly used on granites, and will hide surface imperfections and tone variations. In stone with yellow shading such as Honey Jasper it oxidises the iron components and enriches the yellow to making it pale orange/pink, this create a rich, dramatic effect in originally quiet colours. The stone in this picture was wet to clearly show the effect of the exfoliated surface

## Sandblasted

Sandblasted Bluestone is a basalt product. Once sawn, the stone is then blasted at high velocity with air and sand to create a unique, consistently textured non-slip surface. The sandblasted surface also lightens the tones slightly, providing an alternative to traditional bluestone colours. A dense, durable stone and blue/grey in colour, this bluestone is ideal for any residential or commercial project

# *Typical Applications*

- External flooring
- Construction
- Pool surrounds
- Paving
- Feature walls

# *Compatibility with Chemicals*

Pre-test. Do not use acid on honed or polished. Alkalis are ok.

**What are the DO's and DON'Ts of Bluestone?**

**Do's:**

- Clean spill-ups right away
- Seal bluestone whether freshly laid or existing
- Use a Microfiber mop to clean floors
- Use a acid free cleaning product

**Don'ts:**

- Never use bleach, ammonia or vinegar to clean bluestone floors
- Don't use cleaners that are acidic
- High amounts of water are not necessary
- Never use an abrasive cleaner or scouring pad

### *Sealing Techniques*

Solvent or water borne sealers. Water borne best for very porous bluestone.

### *Special Notes*

Bluestone is an igneous stone. It is also called Basalt. Bluestone has fair porosity. Absorption is 1-2%.

## *Sandstone*

### *Type and Identification*

A sedimentary rock composed predominantly of quartz usually cemented together with clay and/or fused with secondary silica which has been chemically deposited. Minor minerals containing iron and manganese (among others) give the stone its unique characteristics. The movement of these soluble minerals throughout the stone can produce banding or develop as a uniform colour.

During burial the sand is compacted, and a binding agent such as quartz, calcite, or iron oxide is precipitated from ground water which moves through passageways between grains to create Sandstone. Sandstone has a subtle colour variation combined with an extremely fine grain composition, making it the ideal exterior or interior stone for any situation.

Sandstone is an extremely porous stone with a gritty appearance. Mostly found in tan/cream colouring or brown/grey

### *Typical Finishes*

#### Honed

A honed finish is a smooth, even, and non-reflective finish not dissimilar to an eggshell, making it ideal for indoor walls and floors. Honing is done by polishing the stone with a series of increasingly fine abrasives. With adequate lead time on appropriate materials. When compared to textured finishes, honing deepens the colour of the stone and still allows all its unique characteristics still show.

## Sawn

The surface resulting after a block is sawn into slabs using a Diamond Saw. Once cleaned of the sawing swarf the surface should be smooth probably with some saw marking evident. Diamond Sawing can be carried out on all natural stones

## Split faced

Split face or rock face blocks add a further artisan hewn finish to any wall or building and provide subtle contrast to sawn stone blocks, sills or lintels.

Like sawn blocks, split blocks tend to look best when blocks of random length are laid in a wall, as this adds to the authenticity of the stone being a product crafted and adapted from what nature has provided, rather than being cut to identical lengths on a production line.

Split face blocks look equally impressive when laid as either an interior or exterior wall.

## Sandblasted

is the operation of forcibly propelling a stream of abrasive material against a surface under high pressure to smooth a rough surface, roughen a smooth surface, shape a surface, or remove surface contaminants. A pressurized fluid, typically compressed air, or a centrifugal wheel is used to propel the blasting material (often called the *media*)

## Tool worked

Stonemasons use a wide variety of tools to handle and shape stone blocks (ashlar) and slabs into finished articles. The basic tools for shaping the stone are a mallet, chisels, and a metal straight edge. With these one can make a flat surface - the basis of all stonemasonry.

Chisels come in a variety of sizes and shapes, dependent upon the function for which they are being used and have many different names depending on locality. There are different chisels for different materials and sizes of material being worked, for removing large amounts of material and for putting a fine finish on the stone.

## *Typical Applications*

- External flooring
- Landscape walling

- Construction
- Pool surrounds
- Paving
- Feature walls

### *Compatibility with Chemicals*

Pre-test. Rinse and neutralise.

**What are the DO's and DON'Ts of Sandstone?**

- **DO** clean up spills immediately to minimize damage to your stone.
- **DO** clean surfaces regularly Cleaner & Protector.
- **DO** use sealer to protect the stone.
- **DON'T** wait to clean up spills on stone.
- **DON'T** use cleaners that contain acid such as bathroom cleaners, grout cleaners or tub cleaners.
- **DON'T** use vinegar, bleach, ammonia or other general-purpose cleaners.
- **DON'T** use abrasive cleaners such as dry cleansers or soft cleansers.
- **DON'T** use alkaline cleaners not specifically formulated for stone.
- **DON'T** use scouring powders and abrasives because they will scratch the surface.

### *Sealing Techniques*

Solvent or water borne sealers. Water borne best for very porous sandstone

### *Special Notes*

Sandstone is a sedimentary stone. Bluestone has high porosity. Absorption is 1-20%.

# Slate

### *Type and Identification*

Slate is a porous stone with a rough split-face finish. Honed finishes are also available. Mostly are grey or tan/red

### *Typical Finishes*

#### Honed

Honed stone simply means that the surface of the stone, has been ground to a smooth, flat, consistent surface. It also means, in the case of normally shiny

stones such as granite or marble, that the polish or shine has been removed leaving a matte (unpolished) surface.

## Sawn

Honing is a process where the material is polished down until it has a smooth, even surface. Some slates will be able to take a higher hone than others, though few can get to the fully polished state that you often see with marble. The result is a precise look, as well as a floor that is even, without any of the dimensional qualities which can make walking barefoot uncomfortable.

## Split faced

Split face or rock face blocks add a further artisan hewn finish to any wall or building and provide subtle contrast to sawn stone blocks, sills or lintels.

Like sawn blocks, split blocks tend to look best when blocks of random length are laid in a wall, as this adds to the authenticity of the stone being a product crafted and adapted from what nature has provided, rather than being cut to identical lengths on a production line.

Split face blocks look equally impressive when laid as either an interior or exterior wall.

## Tumbled

### *Typical Applications*

- External flooring
- Internal flooring
- Landscape walling
- Pool surrounds
- Paving
- Stack stone

## *Compatibility with Chemicals*

Pre-test. Do not use acids on honed slate.'

**What are the DO's and DON'Ts of Slate?**

**Do:**

- Consider the area in which you wish to install your slate tile flooring and be sure that the type you choose to buy is appropriate for your space's climate, foot traffic, and any other pertinent factors.
- Consider the substrate over which you will install your slate tile, and make sure that it is suitable for your specific choice.
- Expect color variations, and use them to your advantage when approaching the layout of your slate tile.
- Read all warranty information provided, and any other instructions or information related to your slate tile flooring purchase.
- Layout your slate tile flooring in a dry run, and test the color patterns, thickness variation, and overall spacing of your particular batch of slate.
- Use a type of mortar for slate tile that is conducive to your interior or exterior installation. Seek professional advice as to specific brands and varieties of mortar and always read the instructions on any products you buy.
- Choose an appropriate slate tile flooring sealant. Some varieties you might consider are high-gloss (which gives your slate tile a lustrous "wet look"), low sheen (which is reflective, but not as shiny as high-gloss), or no sheen, sometimes known as natural finish. The look that these finishes provide are down to taste, but (once again) it's a good idea to make sure that your sealant is suitable for slate tile.

**Don't**

- Fail to inspect your substrate for loose materials or dirt. It is important to have a clear, clean, and level substrate for a slate tile flooring installation.
- Install slate tile flooring on a wet surface. Despite the resilient nature of slate, trapped moisture remains to be something to be avoided in any flooring installation.
- Apply a sealer to a slate tile floor that has been waxed or oiled but has not yet cured. The resulting marks left by walking on a slate tile floor that hasn't cured can be difficult to remove later.
- Begin grouting too soon. It's a good idea to wait at least a day before grouting your slate tile in order to allow the mortar to properly set.

## *Sealing Techniques*

Solvent or water borne sealers. Slate flooring often sealed with topical sealers.

## *Special Notes*

Slate is a metamorphic stone. Slate has fair porosity. Absorption is 0.1-0.5%.

# Man-Made

## *Ceramic Tile*

### *Type and Identification*

Ceramic tiles are made from clay pressed and fired at lower levels than porcelain. They are always glazed.

### *Typical Finishes*

#### Glazed

Glazed ceramic tiles are most suitable for indoor use and can be found in kitchens, bathrooms and laundry rooms everywhere. The glazing process allows them to be created in virtually every colour of the rainbow, giving them almost universal appeal. In the kitchen, they have traditionally been the most commonly used material for splashbacks and no other material has been produced that rivals glazed ceramic tiles in popularity for use in the bathroom.

If glazed ceramic tiles have a rival for kitchen and bathroom flooring, it would be porcelain tiles, which are said to be even tougher and more scratch and chip resistant that ceramic. Ceramic and porcelain glazed tiles are virtually identical in appearance, but porcelain is more expensive.

#### Unglazed

A big part of unglazed ceramic tiles' appeal is their natural earth-toned appearance. This is why they are often chosen instead of glazed tiles even for use as kitchen and bathroom tiles, where glazed ceramic tiles are more commonly used. In order to stain and water-proof the tiles, a clear sealant must be applied. Once they are thoroughly sealed, unglazed ceramic tiles are suitable for use anywhere that other types of tiles are used.

Unglazed ceramic tiles are preferable to glazed tiles in many outdoor settings because their rough texture makes them highly slip resistant. With the addition of minerals to the unbaked clay, a variety of colours and tones are available, though they are still limited. One advantage of unglazed ceramic tiles over stone tiles is their uniformity of colour. If you are looking for an earthen-toned floor, paver or decking, they may be ideal.

### *Typical Applications*

Mainly internal. Often in bathrooms and kitchens. Too slippery for external applications

### *Compatibility with Chemicals*

Not Hydrochloric or Fluorine acid

**What are the DO's and DON'Ts of Slate?**

**Do's**

- After installation, apply tile and grout sealer in order to protect your flooring.
- Conduct a routine maintenance check of your tile for dirt, stains, or cracks.
- Always use dirt-free water during cleaning. You may have to stop and make a new soapy solution every 100 square feet as to avoid reintroducing dirt to the tile.
- Always perform routine cleaning maintenance to your tile. Even though tile tends to take care of itself, it still needs some help from time to time.

**Don'ts**

- Don't use bleach or any acidic solutions to your tile: they cause more harm than good.
- Don't use scouring pads or steel wool on your tile, ever. Unless you want scratches.
- Always know the limitations of your particular tile. Each form of tile comes with its own cleaning solutions, processes, waxing restrictions, and sealer constraints, so ask your contractor about how to care for you particular flooring.
- Never drop anything on your tile. Though tile is durable, it isn't indestructible to cracks and chipping.

## *Sealing Techniques*

They cannot be sealed.

## *Special Notes*

Absorption is nil

# Vitrified Tiles

## *Type and Identification*

Vitrified tile is a ceramic tile with very low porosity. It is an alternative to marble and granite flooring. Vitrified tiles are often used outdoors due to their water and frost resistance.

Vitrified tiles are contain more silica than ceramic tiles and are fired at higher temperatures, making them virtually non-porous

## *Typical Finishes*

Glazed or unglazed

**Glazed** vitrified tiles (GVT) have a glazed surface. They offer a wide variety of design, art work and surface textures like wood grain, bamboo, slate or stone. This is also an expensive process, but the cost is dropping as digital printing techniques are introduced.

### Double Charge

Double charge vitrified tiles are fed through a press that prints the pattern with a double layer of pigment, 3 to 4 mm thicker than other types of tile. This process does not permit complex patterns but results in a long-wearing tile surface, suitable for heavy traffic commercial projects.

## *Typical Applications*

Internal flooring & wall. External flooring & wall. Commercial and domestic areas

## *Compatibility with Chemicals*

Not Hydrochloric or Fluorine acid

## *Sealing Techniques*

No sealing required

## *Special Notes*

Absorption is very low.

# *Porcelain Tile*

## *Type and Identification*

Porcelain tiles are made from fine china clay. They are pressed and fired at extremely high temperatures.

## *Typical Finishes*

### *Glazed*

Many glazed porcelains are right a .5% absorption. However, if the bisque (clay body) of the tile is used as part of the visual design on the face of the tile the absorption should be under .1%. Glazed porcelains can be partially glazed, they can use glaze elements used in the manufacturing process or they can be completely glazed. There are even some glazes that can be polished!

## *Polished*

Polished porcelains are natural porcelains with a polished surface. The polished surface isn't a glaze, but actually comes from within the stone and is polished in a fashion similar to granite. It's important to note that the polishing process on a porcelain tile actually opens up the pores of the tile. This means polished porcelain tiles must have a penetrating or impregnating sealer applied before grouting in order to increase resistance against staining and make them easier to keep clean

## *Unpolished*

Natural porcelain is, as the name implies, porcelain that has not been glazed nor polished. These tiles are made of porcelain through and through. They can have surface treatments (soluble salts), have a different face and body (double loaded), or the face of the tile simply be a different colour or texture than the body of the tile, yet it's still classified as through-body "natural" porcelain. Most natural porcelain tiles have absorption ratings of less than .1%. Keep in mind that absorption has nothing to do with the facial surface being stain resistant. Unless the tile manufacturer has treated the porcelain to close up the surface (micro) porosity, you'll need to seal natural porcelain tile before grouting.

## *Textured*

A rough textured non sheen finish

- Ideal for external use
- Non slip texture

## *Typical Applications*

- Internal flooring & wall
- External flooring & wall
- Commercial and domestic areas

## *Compatibility with Chemicals*

Not Hydrochloric or Fluorine acid

### *Sealing Techniques*

Only seal polished porcelain with purpose built solvent sealer.

### *Special Notes*

Absorption is negligible on unpolished porcelain and low on polished porcelain

## Terracotta Tiles

### *Type and Identification*

Terracotta is a porous tile made from earthy clay baked not fired.
Characterised by earthy browns and reds

### *Typical Finishes*

Normally a dull non-smooth surface which is mostly also slightly undulating.
Often has irregular edges.

### *Typical Applications*

- Internal flooring & wall
- External flooring & wall
- Often used for balconies and walkways.

### *Compatibility with Chemicals*

Can be discoloured by acid. Pre-test.

### *Sealing Techniques*

Topical sealer + floor finish. Solvent or water based impregnating sealer

### *Special Notes*

Terracotta is a very porous tile.

## *Quarry Tiles*

### *Type and Identification*

Terrazzo is an agglomerate tile made of marble chips set in cementicous base

Which is then cut and polished.

### *Typical Finishes*

*Semi - polished*

### *Typical Applications*

- Commercial flooring.
- Change room partitioning

### *Compatibility with Chemicals*

Do not use any acids

### *Sealing Techniques*

Topical sealer + floor finish. Solvent or water based impregnating sealer for vertical partitions

### *Special Notes*

Terrazzo is a moderately porous tile.

## *Clay Pavers & Products*

### *Type and Identification*

Clay is a specific clay which is moulded and baked.

Normally used for paving and pottery.

### *Typical Finishes*

Semi-smooth.

### *Typical Applications*

- External flooring
- Walkways
- Roads

### *Compatibility with Chemicals*

Can be discoloured by acid. Pre-test.

### *Sealing Techniques*

Solvent or water borne sealers.

### *Special Notes*

Clay is a moderately porous substrate.

# *Concrete and Cement Products*

### *Type and Identification*

Concrete and cement products are composed of stone aggregate and clean sand bonded together with lime based cement

### *Typical Finishes*

#### *Wood float*

Prior to the introduction of power tools, a floated finish was that produced by a large, generally wooden or sometimes metal, hand float moved over the surface when the concrete was still plastic. This produced a flattish slightly textured surface which often contained float marks. Nowadays, the operation is carried out using powered machines fitted with either a large circular pan or large flat metal floats. Power floating is generally carried out later than hand floating as the concrete needs to take the weight of the machine. A simple test is when the heal of a boot leaves only a slight impression, say 3mm. Power-floating produces a similar surface to hand floating, with a slightly textured surface often with circular swirl marks from the floating operation. This operation is sometimes called panning. Too many passes can cause a ´burnished´ appearance. Power floating can sometimes lead to surface delamination.

#### *Smooth steel float*

Steel trowels produce a smooth surface finish. Always bear in mind that steel trowelled concrete surfaces can become slippery when wet and are better suited to internal use.

#### *Honed & polished*

Honing gives concrete a smooth matt finish by grinding the concrete surface and exposing the aggregates. Smoother (polished) concrete surfaces can be achieved through extended honing using progressively finer abrasives (finer grinding grit heads/pads) to impart a lustre to the concrete surface. Surface sealants may be applied to enhance the surface lustre.

## *Textured*

Stamped concrete, often called textured or imprinted concrete, is concrete that replicates stones such as slate and flagstone, tile, brick and even wood. Ideal for beautifying pool decks, driveways, entries, courtyards, and patios, stamped concrete is the perfect outdoor paving choice.

Recently, stamped concrete has become a popular choice for many homeowners because it offers a wide array of options when it comes to concrete pattern and concrete colours. Another factor contributing to its popularity is its price. The cost of stamped or imprinted concrete is often considerably lower than the materials it is a substitute for.

Concrete is the perfect canvas for creating a cost-effective replica of more expensive materials, without giving up a natural, authentic look. When choosing colours and patterns for your stamped cement, make sure they blend with other stone, tile or textured concrete elements at your residence. Even in complex designs with steps and fountains, patterns can be still be pressed into the concrete. Stamped concrete can also be used in conjunction with other decorative concrete elements such as exposed aggregate or acid staining. Popular patterns include running bond brick, hexagonal tile, worn rock or stone.

## *Typical Applications*

- External flooring
- Internal flooring
- Driveways
- Walkways
- Roads
- Structure

## *Compatibility with Chemicals*

Can be discoloured by acid. Pre-test.

## *Sealing Techniques*

Solvent or water borne sealers. Concrete often sealed with topical sealers.

## *Special Notes*

Concrete is a very porous substrate. Concrete is alkaline and reacts with acids. Only use acid if necessary.

# T&G Power

**T&G Power** is a super-strength tile, grout and hard surface cleaner for blasting through tough soil and carbon build-ups on tile, grout and concrete. It is a skillfully formulated power pack which bursts through the toughest of hard surface grime in industrial deep cleans and restoration work. **T&G Power** is a high concentration alkaline cleaner for removing embedded grime, grease, organic soiling and carbons from tiles and hard surfaces.

**Recommended Applications**

Ideally suited for use on all resilient flooring including concrete floors, ceramic tiles, terracotta and grout lines.

Excellent in applications such as industrial kitchens, refuse compactor areas, workshop floors, food processing facilities, bakeries and public eating areas.

Do not use or allow T&G Power to contact painted surfaces, non-ferrous metal surfaces (especially aluminum) and polymer coated flooring. Safe on all man-made tiles, natural stone products, grout and concrete at recommended dilutions.

## Performance

- Radical strength cleaning power for serious grime.
- Outstanding penetration and wetting chemistry for ultimate cleaning
- Excellent for baked-on carbons, compacted soiling and heavy oils.
- Ultra-concentrated, providing economical dilution ratios

## Surface Compatibility

- Safe for use on tiles and concrete. Use with caution on fine stone.
- Not suitable for use on surfaces coated with a floor polish or wax.

## Safety

**Classified as Corrosive Class 8. Use gloves and goggles**

# Chlorosan

CHLOROSAN is a powerful chlorine-based sanitiser for sanitising food premises and any areas where a high level of hygiene is required. CHLOROSAN will be effective against viruses, bacteria and fungi on hard surfaces, when used as per directions. A 2% solution of CHLOROSAN provides 600ppm F.A.C.

A super concentrate blend of cleaners and sanitisers to get food premises to a high standard of hygiene. Contains surfactants for user safety. Surfaces are rinsed after use.

## Performance

- Quickly destroys & removes mould, including the structure & spores
- Removes black mould staining and restores stone to original look.
- Provides excellent removal of organic staining such as leaf stains.
- Innovative penetrating action makes it effective on porous surfaces.

## Surface Compatibility

- Safe for use on stone, tiles and concrete.
- Will damage fabrics, fibres and polished surfaces

## Safety

- Classified as irritant. Use gloves and goggles

# T&G Cleaner Pro

Domestic, commercial, institutional

## Performance

- Employs innovative chemistry to tackle tough grime with low caustic
- Excellent wetting power for cleaning smooth non-porous tiles.
- Excellent penetrating action for use on porous stone.
- Bursts through a wide range of soils including fire and soot residue

## Surface Compatibility

- Safe for use on all natural stone, tiles, concrete & unsealed vinyl.
- Not suitable for use on surfaces coated with a floor polish or wax.

## Safety

Classified as an irritant. Non-hazardous when diluted to 1:10

# ProNeutro

**ProNeutro** is a new generation, neutral pH detergent cleaner specifically designed to remove soil from pH sensitive surfaces such as polymer coated flooring, wooden flooring and fine stone. Its stunning cleaning performance, safe and easy-to-use characteristics, with its economical price tag has earned it the "product-of-choice" reputation by many professional contractors.

**ProNeutro employs the latest in Nano surfactant technology to create a neutral high performance cleaner which leaves behind no unwelcome haziness, streakiness or slippery residues.**

### Performance

- New generation chemistry for high performance maintenance cleaning of fine stone, tiles, wood and polymer coated flooring
- Ideal for heavy duty cleaning of delicate surfaces.
- Safe & easy to use with awesome fresh lemon scent.

### Surface Compatibility

- Safe for use on all stone, tiles, wood, painted, polymer coated and pH sensitive surfaces.

### Safety

- Classified as non-hazardous.

# T&G Restore Grout Restore 20/60

T&G Restore is a proprietary restoration cleaner for neglected, black grout lines and tiles. Grout Restore's low pH formula contains no hydrochloric, hydrofluoric, phosphoric or Sulphamic acids, but is more powerful and effective, yet safer and pleasant to use.

It makes quick work of mineral scale, cement/grout smear, efflorescence, soap scum and embedded stains. It provides tough action on general grime and is excellent for grout restoration ahead of applying a sealant.

Safe on all man-made tiles, use with care on sandstone, quarry tiles, terracotta and slate. Not recommended for use on acid sensitive surfaces including marble, limestone, granite and other natural stone. Although unlikely to mark non-ferrous metals (e.g. Aluminum), always pre-test before use.

It can be used anywhere where there are dirty tiles. It is good in restoration applications and washrooms, showers and pool surrounds, grout smear removal and builders cleans.

## Performance

- Outstanding penetration and wetting chemistry for ultimate cleaning
- T&G Restore provides amazing cleaning with low hazard profile.
- Tackles limescale, soap scum, efflorescence & detergent residue.
- Ultra-concentrated, providing economical dilution ratios.

## Surface Compatibility

- Safe for use on ceramic and porcelain tiles.
- Not suitable for marble and fine stone and acid sensitive surfaces

## Safety

- T&G Restore and Grout Restore 20 classified as irritant.

- Grout Restore 60 - Corrosive Class 8. Use gloves and goggles

# Soils and Staining

The accurate identification of the soil or staining agent you are attempting to remove is vital if you are to choose the correct product to use and enjoy any measure of success. Listed below are commonly found soils and stains that you will most probably encounter

- Efflorescence
- Mould & Mildew
- Limescale & Soap Scum
- Detergent Residue Build-up
- Neglected Grout Lines
- Grout Smear
- Porcelain WaxRemoval
- Oil Spots
- Grease & Grime

## Efflorescence

***What is efflorescence?***

Efflorescence is the result of mineral salts being carried to the surface of stone tiles or clay products by moisture. The moisture may come from beneath the tile due to the installation process or there may be a sub- surface moisture source or it can come from moisture soaking into the top surface of the tile. As the moisture dries the mineral salts are left behind on the tile surface in the form of a white powder.

*Where is it found?*

Efflorescence is typically found around grout lines (floors and walls) and on cementicous & clay materials. It is often visible where there is evidence of excessive moisture presence such as floor drain areas, water running down a wall from a broken gutter.

*How is it removed?*

Efflorescence is best removed dry, by brushing. The addition of moisture will often cause more efflorescence. However, it may be necessary to remove residual efflorescence with a light acid wash.

***Prevention?***

It is important to research the source of the moisture and take applicable preventative action to stop it recurring.

Sealing the tile and grout with a penetrating sealer will also dramatically reduce or totally stop efflorescence. Sub-surface moisture sources must however be removed.



**Efflorescence**

**This procedure is dedicated to use on ceramic, porcelain, sandstone, concrete and acid resistant surfaces.**

*Procedure*

1. **Dry Removal** – First vigorously dry brush / scrub the area to remove as much of the efflorescence as possible. If some still remains proceed to step 2.

2. **Application** – Sparingly apply ***Grout Restore 20 (dilute 1:20)*** using a mop, sponge or sprayer. ***Grout Restore 60*** *or* ***T&G Restore*** *can also be used.*

3. **Agitate –** Agitate the area thoroughly using a scouring pad, brush (walls and small areas) or a slow speed rotary scrubber. Do not allow extra dwell time.

4. **Rinse** – Rinse with clean water or remove the dissolved soiling with a wet pick-up vacuum.

5. **Dry** – Assist speed drying by increasing natural ventilation where possible.

Note: Efflorescence is caused by water ingress into porous substrates, so it is important that only the

Minimum amount of moisture is used in this process. Ventilate the area to facilitate fast drying times. Avoid doing the job directly before nightfall or rain. Sealing the area after this process is highly recommended.

## Mould & Mildew

***What is Mould & Mildew?***

Mould & Mildew is fungal growth which shows itself as unsightly black or green marks or patches in washrooms, on garden & building walls and driveways. Mould mostly grows on porous surfaces which hold the moisture it needs to grow. Hence attractive sandstone walls soon show unsightly

***How is it removed?***

Mould & mildew is most effectively and efficiently removed with Actichem Chlorosan (Chlorine detergent). Good agitation is normally needed to remove the "mass" of the growth. Other chemicals which can be used are strong "Quat" sanitizers such as Biosan.

***Prevention***

Mould and mildew growth can be partially or sometimes totally prevented by sealing the substrate surface with a water repelling penetrating sealer. Mould may still grow on these sealed surfaces if atmospheric conditions are right but it can normally be removed just with a mild wash

TILE & STONE CARE METHODS & PROCEDURES

***Procedure***

1. **Application** – Apply ***Chlorosan*** *(use undiluted for severe cases and dilute 1:10 for lesser areas)* using a scouring pad, sponge or mop bucket.

2. **Agitate –** Agitate the area thoroughly using a brush (walls, counters and small areas), a slow speed rotary scrubber or deck scrubber. Allow at least 30 minutes dwell time.

3. **Rinse** – Washroom and external surfaces can mostly be washed down with running water or a high pressure washer.

4. **Repeat** – If the mould & mildew is not totally removed, repeat the last two steps.

5. **Dry** – Assist drying by squeegeeing or/and drying the cleaned areas. Increase natural ventilation if possible.

*Note:* Chlorine can damage grass and plants. Ensure suitable measures are taken to avoid contact. Chlorosan can bleach and damage some fabrics. Wear suitable protective clothing.

## Lime Scale & Soap Scum

***What is Lime Scale & Soap Scum?***

Limescale & Soap Scum are closely related. Limescale or hard water scale occurs when water evaporates and leaves mineral salts behind on the

surface. They are also deposited on the surface as a result of heat. (Hence the scale build up in your kettle).

***How is it removed?***

Hard water salts and soap scum are alkaline in nature and respond well to acidic cleaners, however agitation is often required for stubborn deposits. Where acid cleaners cannot be used (e.g. on fine stone), specialty alkaline blends are available.

***Lime Scale & Efflorescence***

Limescale and efflorescence are often found in the same areas (namely areas subjected to water) and can sometimes look very similar. Both limescale and efflorescence are treated in a similar way with the exception of a focus on dry removal and post sealing with efflorescence.

## TILE & STONE CARE METHODS & PROCEDURES

Limescale and Soap Scum

**This procedure is suited to ceramic, porcelain and acid resistant surfaces. Use Stone Gel Pro when cleaning marble and natural stone.**

***Procedure***

1. **Application** – Apply ***T&G Restore (dilute 1:10)*** using a scouring pad, sponge or mop bucket. ***Grout Restore 20 /60*** *can also be used.*

2. **Agitate –** Agitate the area thoroughly using a scouring pad, brush or slow speed rotary scrubber. Allow 15 – 30 minutes dwell time. Do not allow to dry.

3. **Rinse** – Remove the dissolved soiling by sponging or with a wet pick-up vacuum. Washroom surfaces can often be washed down with running water.

4. **Dry** – Assist drying by squeegeeing or / and drying the cleaned areas.

**Note:** Outdoor areas can be rinsed down with a high pressure washer.

Ventilate the area to facilitate fast drying times

Restrict foot traffic until totally dry

## *Detergent Residue Build-Up*

***What is Detergent Residue Build-Up?***

Tiled flooring in shopping centres', hospitals, schools and similar institutions are mostly kept relatively clean by regular maintenance cleaning. However, this regular cleaning regime often creates a resistant chemical residue build- up on the tiled surface and grout lines. This phenomenon is not easy to identify at first sight and is normally mistaken for regular soiling which results in severe cleaning headaches when the cleaner attempts to remove it

***How is it removed?***

Detergent Residue Build-Up requires a blend of acidic agents and emulsifiers to remove. The ***Actichem T&G Restore*** is the ideal answer for this problem. Build-ups which have occurred over many years may require longer dwell times and vigorous agitation.

***Prevention***

Prevention relies on a change in the maintenance cleaning programme. This may involve using lower dilutions of cleaning solutions, using low residue products, improving "dirty water" pick-up on autoscrubbers, using a wet pick-up machine instead of a mop bucket. It is also recommended that the programme includes a clean every 3 months using a light dilution of T&G Restore.

**TILE & STONE CARE METHODS & PROCEDURES**

*Detergent Residue Build-Up*

- **On ceramic and porcelain tiling.**
- **Assumes the use of autoscrubber or wet pick-up vacuum**

***Procedure***

1. **Application** – Apply ***T&G Restore*** (dilute 1:5 to 1:10) onto an area which can be worked within 30 minutes.

2. **Agitation** – Scrub this area using a slow speed rotary machine and pad. *(Use a brush for uneven and rough surfaces).* Walls and vertical surfaces will require manual agitation with a deck scrubber or scouring pad. Allow 10 to 20 minutes dwell time.

3. **Extraction Clean** – Clean and extract using an autoscrubber or wet pick-up. Rinse the area thoroughly with a 1:200 solution of Proneutro or clean water.

*Note* Large areas can be efficiently done using an autoscrubber. Lift the autoscrubber squeegee and apply the solution. Do a second pass where the area is scrubbed and extracted. During this second pass a 1:200 solution of Proneutro can be used to neutralise and rinse in one step.

Ventilate the area to facilitate fast drying times.

Restrict foot traffic until totally dry.

## *Neglected Grout Lines*

***What are Neglected Grout Lines?***

Grout lines, especially those found in flooring applications are oft times an eyesore on an otherwise beautifully tiled floor. Grout lines are most commonly constructed with a cementicous base and are extremely porous, acting like a sponge in-between the tiles. In addition to this unfortunate characteristic, grout lines are normally the lowest point on the tiled surface, into which cleaning detergent and dirt residues naturally migrate to without

***How are they restored?***

Due to the fact that the soiling in the grout lines contains high levels of detergent they are most successfully cleaned using an acid cleaner with good emulsifying properties such as T&G Restore. Often specific attention has to be given to agitation because machine scrubbers seldom reach into the grout line.

***Prevention***

You can never stop grout lines from getting dirty However you can dramatically improve the situation by sealing grout lines with a good quality sealer and ensuring that the water pick-up function on any maintenance machine is in good condition.

TILE & STONE CARE METHODS & PROCEDURES

Neglected Grout Lines

**On ceramic and porcelain tiling.**
**For grout on fine stone, use this procedure with T&G Cleaner Pro.**

***Procedure***

1. **Application** – Apply ***T&G Restore*** (dilute 1:5 to 1:10) onto an area which can be worked within 30 minutes. Cover the whole area, not just the grout lines.

2. **Agitation** – Scrub this area using a slow speed rotary machine and brush. *(The use of a "Grout Brush" is ideal for this application).* Walls and vertical

surfaces will require manual agitation with a scrubbing brush. Allow 10 to 20 minutes dwell time.

3. **Extraction Clean** – Clean and extract using an autoscrubber, wet pick-up vacuum or mop bucket. Rinse the area thoroughly with a 1:200 solution of Proneutro or clean water.

*Note:* Large areas can be efficiently done using an autoscrubber. Lift the autoscrubber squeegee and apply the solution. Do a second pass where the area is scrubbed and extracted. During this second pass a 1:200 solution of Proneutro can be used to neutralise and rinse in one step.

Ventilate the area to facilitate fast drying times.

Restrict foot traffic until totally dry.

## *Grout Smear*

### What is Grout Smear?

Grout smear occurs during the grouting process as the stone or tile layer fills in the grout lines, often with the sweeping action of a tiler's squeegee or sponge. A good installer will leave behind a minimum of grout smear and remove as much as possible before it dries.
Grout most commonly has a cementicous base and can cause severe staining to softer stone

### ***Where is it found?***

Grout Smear is, to a greater or lesser degree, a normal consequence of tile installation whether it be natural stone or man-made tiles and whether it be walls or floors

### ***How is it removed?***

Where cementicous grouts are used (most often on flooring), the thin grout film left on the tiled surface responds well to acid based cleaners however acid sensitive stone requires special care. To remove grout from sensitive stone, a neutral or alkaline cleaner is required with extra focus falling on the scrubbing action.

### **Prevention?**

The negative impact can be dramatically reduced by pre-sealing the stone before grouting. The skill of the tiler, of course, largely determines how much grout smear remains behind.

**TILE & STONE CARE METHODS & PROCEDURES**

Grout Smear

**This procedure is for use on ceramic,porcelain and *acid resistant* surfaces. Use Stone Gel Pro when cleaning marble and natural stone.**

***Procedure***

1. **Application** – Apply ***T&G Restore (dilute 1:50)*** using a scouring pad, sponge or mop bucket.

2. **Agitate –** Agitate the area thoroughly using a scouring pad (walls, counters and small areas) or a slow speed rotary scrubber. Allow 10 – 30 minutes dwell time.

3. **Extract Rinse** – Remove the dissolved grout smear by sponging or with a wet pick-up vacuum. Washroom surfaces can often be washed down with running water.

4. **Rinse** – Clean and rinse with clean water and assist drying by squeegeeing or / and drying the cleaned areas.

***Note:*** Outdoor areas can be rinsed down with a high pressure system.

Ventilate the area to facilitate fast drying times. Restrict foot traffic until totally dry.

## *Porcelain Wax*

**What is Porcelain Wax?**

Manufacturers of polished porcelain tiles, coat each tile with a tough wax film prior to packing and dispatch. This wax coating protects the tile in transit and prevents the tile from absorbing dirt and grout residues during the installation process. However this wax film dulls
The tile's appearance and needs to be removed as soon as the installation has cured.

**Where is it found?**

It is only found on new porcelain tiles. However, it is not uncommon to find residues of this factory applied wax on tiles which have been laid

**How is it removed?**

The wax used is notoriously tough and requires specialized chemistry to effectively remove. The most effective method of removing it is with T&G

Cream (ideal for walls and smaller areas) or T&G Strip. Good agitation is required.

**Note?**

Agitation on this sort of work is normally provided by a floor maintenance pad. It is worthwhile to note that when using a coloured pad for extra abrasiveness, the pad colouring can transfer to the corner edge of the tile. This is especially noticeable on light coloured porcelain tiles.

**TILE & STONE CARE METHODS & PROCEDURES**

Porcelain Wax

**Removal of factory applied wax from porcelain tiles**

**Procedure**

1. **Application** – Apply ***T&G Cream*** *(for small areas or vertical tiles) or* ***Powerstrip*** (dilute Powerstrip 1:1 to1:4).Agitate using a non- scratch abrasive cleaning pad. Allow 10-20 minutes dwell time.

2. **Extract** – Remove the resulting slurry using wet extraction equipment or by sponging.

3. **Rinse** – Rinse thoroughly with clear water.

**Note:** Outdoor areas can be rinsed down with a high pressure system.

Ventilate the area to facilitate fast drying times.

Restrict foot traffic until totally dry.

## *Oil Spots*

Oil spots on porous substrates are one of the toughest
Cleaning challenges facing the professional cleaner. These unsightly stains are found mainly on concrete flooring or driveways and are caused by oil dripping from trucks and cars.

*How are they removed?*

Oil Spots require treatment with a solvent degreaser such as T&G Spot Remover or HD Alkaline Degreaser. In addition to this treatment a high pressure clean will also often remove a large portion of the stain. Because many oil stains are deep set, the use of a poultice (Actisorb) is often necessary.

***Prevention?***

The most effective way to prevent oil stains is to seal the stone or concrete with a high quality penetrating sealer which guards against oil borne contaminants

## TILE & STONE CARE METHODS & PROCEDURES

Wax Films, Paint Spots and Oil Stain

**Includes the removal of many cosmetics, graffiti, bitumen, tar, putty, texture, greasy food stains and deep set oily grime.**

***Procedure***

1. **Preparation** – Remove as much of the spill or stain by scraping or sponging off excess stain material.
2. **Application** – Apply ***T&G Cream*** using a scouring pad. Spread a thin layer over the whole stain and agitate well. Allow 2 – 15 minutes dwell time.
3. **Extract** – Remove the emulsified stain and chemical by sponging or with a wet pick-up vacuum. Do not add water at this stage.
4. **Repeat** – If the stain is not totally removed, repeat the last two steps.
5. **Rinse** – Clean and rinse with a 1:50 solution of T&G Cleaner Pro or Proneutro followed by a rinse with clear water.

*Note:* Outdoor areas can be rinsed down with a high pressure system.

Ventilate the area to facilitate fast drying times.

Restrict foot traffic until totally dry.

***Grease & Grime?***

Maintenance and restoration cleaning of floors and walls in homes, businesses and institutions involves tackling a variety of oily, fatty soils and general grime. A combination of good quality cleaning equipment and purpose built grease cutting chemistry is needed to effectively emulsify and remove these oil-based soil deposits. Whilst strong alkaline/solvent blends are the most effective solutions to use, care should be taken to avoid damaging delicate surfaces.

## TILE & STONE CARE METHODS & PROCEDURES

Grease & Grime

**General soiling**
**Assumes the use of autoscrubber or wet pick-up vacuum**

*Procedure*

1. **Pre-Treatment** – Apply ***T&G Cleaner LF*** (dilute 1:5 to 1:10) onto an area which can be worked with, in not longer than 30 minutes. *Use T&G Power for soil build-ups and tough applications.*

2. **Agitation** – Scrub this area using a slow speed rotary machine and pad. *(Use a brush for uneven and rough surfaces).* Walls and vertical surfaces will require manual agitation with a deck scrubber or scouring pad. Allow 10 to 20 minutes dwell time.

3. **Extraction Clean** – Clean and extract using an autoscrubber or wet pick-up. Rinse the area thoroughly with clean water.

*Note:* Walls and outdoor areas can be rinsed down with a high pressure system.

Ventilate the area to facilitate fast drying times.

Restrict foot traffic until totally dry.

# Choosing the correct tile & stone sealer

**Organic staining**
- Inhibit plant material stains
- Inhibit mould & mildew.
- Inhibit pollution discoloration

**Water contaminants**
- Inhibit efflorescence
- Prevent salt attack, spalling and stone degradation

**Oily stains**
-Food & beverages
-General grime
-Body oils & fats

**Solvent Based**

- Better penetration in dense substrates.
- Better performance in some applications

# Defender SV

**Performance**

**Defender SV** is formulated to provide premium protection to sandstone, construction materials, engineered concrete, masonry surfaces, and cement & clay products. It employs high performance impregnators to create a powerfully repellent substrate, locking out water and water-borne contaminants water-borne contaminants.

**Defender SV** is a clear, solvent based, water repellent ideally suited to construction stone and concrete applications

**Surface Compatibility**

- **Premium Protection –** Defender SV provides unparalleled protection against water borne contaminants, chloride ions, efflorescence and biological growth.
- **Long Term Benefits - Defender SV**'s long lasting repellency, protects engineered concrete and porous construction materials from efflorescence, spalling (freeze-thaw damage), corrosion of reinforcing bar, salt ion ingress, weathering, mould and staining.
- **Retains Newness –** the high performance protection and long life span offered by Defender SV is ideal for the preservation and preventative maintenance of:
  - Construction concrete such as bridges, marine and port structures,
  - Concrete and paved walkways, parking areas, etc.
  - Concrete and stone building facades,
  - Stone walls and monuments, pool surrounds and patios.
- **Natural Look –** will not discolour or alter the natural look of recommended substrates.
- **UV Stable –** Ideally suited for both indoor and outdoor use.
- **Vapour permeable –** won't trap moisture. Does not hinder the natural passage of water vapour

**Safety**

**Hazardous according to the criteria of NOHSC and Flammable according to the Australian Dangerous Goods Code**

# Solv Sealer Pro

Patios, Pool surrounds, walkways

**Do not dilute**

Pro-Solv is an **economical**, no sheen, **solvent based** penetrating / impregnating sealer for all natural stone, tile & grout surfaces. Pro-Solv® is formulated to provide excellent stain protection. Perfect for very dense stone and tile. An ideal product for sealing porcelain tiles. **Last up to 10 years**.

**Key Features:**

- Excellent stain protection

- No-sheen natural look
- Allows moisture vapour transmission
- Does not alter the slip resistance of sealed surface
- Easy to use
- Solvent-based formula
- Lasts up to 10 years

**Suitable Tile Types:**

As a natural look sealer for all natural stone surfaces (such as sandstone, slate, marble, limestone, granite, bluestone / basalt) unglazed tiles, porcelain tiles, clay pavers, concrete, brick, masonry, terracotta and grout. For interior and exterior use.

**Limitations:**

- Do not allow sealer to come in contact with any non-recommended surface
- May slightly lighten or darken some stone surfaces
- Sealer will not prevent surface wear or etching from acids or caustic chemicals

**Performance**

- Premium protection against staining caused by foods, beverages, coffee, wine, fats and oils.
- Excellent for outdoor projects. Well suited to very porous stone.
- UV stable, fully breathable, no appearance change.

**Surface Compatibility**

- Ideal for marble, limestone, travertine, sandstone, bluestone, slate, terracotta and concrete.

**Safety**

- Non-hazardous. Non-flammable.

# Solv Sealer Gold

Floors, walls, counters, features

**Do not dilute**

**Solv Sealer Gold** provides premium "Nano-molecule" protection to, natural fine stone, sandstone, pavers, bricks, porous tiles and grout. It's extremely small molecular structure enables it to rapidly penetrate into the fine pores of natural stone, clay and cementicous materials. It provides long lasting, high performance protection against water and oil based contaminants, efflorescence and spalling.

Solv Sealer Gold is a solvent-based penetrating sealer that is light tan in colour.

- Provides premium protection for up to 15 years.
- Independently performance tested by NATA approved stone laboratory.

**Performance**

- Ultimate protection against staining caused by foods, beverages, coffee, wine, fats and oils.
- Suited to heavy duty applications and premium upmarket locations.
- UV stable, fully breathable, no appearance change

**Surface Compatibility**

- Ideal for granite, marble, limestone, travertine, slate, bluestone.
- Use Solv Sealer Pro for polished porcelain.

**Safety**

- Classified as an irritant. Flammable Class 3

**Water Based**

- Safe to use
- Environmentally friendly
- Non-flammable
- Often lower cost

# Defender WB Gold

Landscape, Pool surrounds, walling

**Do not dilute**

**Defender Gold WB** provides premium "Nano-molecule" protection to, concrete, brick masonry, concrete masonry and natural stone. It's extremely small molecular structure enables it to rapidly penetrate into the fine pores of engineered concrete, natural stone, masonry and cementicous materials. It provides long lasting, high performance protection against water and oil based contaminants, efflorescence and spalling.

- **Provides premium protection for up to 15 years**

**Defender Gold WB** is a water based, clear penetrating, breathable, surface treatment for use on concrete, brick masonry, concrete masonry and natural stone. The unique silane treatment penetrates deep into the substrate and chemically bonds with minerals to form a permanently fixed, water repellent molecule.

In addition, high performance fluoropolymers, oil repellent additives and super wetting agents resist the ingress of motor oil, transmission fluid, diesel and other automotive fluids. These additives also provide unparalleled protection against food and beverage spills such as wine, beer, soft drinks, food grease and ketchup.

**Performance**

- Ultimate protection against the detrimental effects of water borne contamination, such as organic stains, mould, surface degradation.
- Also provides protection against incidental oil spills.
- UV stable, fully breathable, no appearance change

**Surface Compatibility**

- Ideal for marble, limestone, travertine, sandstone, bluestone, slate, terracotta and concrete.

**Safety**

Non-hazardous. Non flammable

# Stone Sealer Gold

Commercial and domestic stone

**Do not dilute**

**Stone Sealer Gold** is a premium water-based penetrating sealer professionally formulated to provide unparalleled protection of marble, limestone, travertine, granite and bluestone. Its advanced Fluorochemical polymer technology chemically interacts with the minerals in these fine stones to create a powerfully repellent surface.

**Stone Sealer Gold** is a water-based penetrating sealer that is light tan in colour.

- Provides premium protection for up to 15 years
- Independently performance tested by NATA approved laboratory
- Meets the requirements for Green Building Council of Australia Green Star Office Design V3 IEQ-13

**Performance**

- Ultimate protection against staining caused by foods, beverages, coffee, wine, fats and oils.

- Suited to heavy duty applications and premium upmarket locations.
- Green star, UV stable, breathable, no appearance change.

**Surface Compatibility**

- Ideal for marble, limestone, travertine, sandstone, bluestone, slate, terracotta and concrete.

**Safety**

Non-hazardous. Non flammable

## TILE & STONE CARE METHODS & PROCEDURES

*Sealing of low porosity stone*

**Includes granite, marble, travertine and porcelain.**
**Use this same procedure for all penetrating sealers**

***Procedure***

1. **Preparation** – Based on the surface type and the potential soiling & staining agents, choose the appropriate sealer for the application. Ensure that the surface is totally clean, totally dry and chemical free.

2. **Application** – Saturate an area, with the applicable sealer, not larger than 20$m^2$ (or an area that can be worked within 10 minutes). Ensure that the surface is shiny wet for at least 60seconds and that it stays damp for at least 5 minutes.

3. **Remove Excess** – Remove the excess sealer on the surface with a squeegee and/or a clean, white, terry towel. Move this excess sealer onto the next portion of floor to be sealed.

4. **Moving forward** – Repeat steps 2 and 3 until the whole area is treated.

5. **Subsequent Coats** – If a 2$^{ND}$ or 3$^{RD}$ coat is to be applied; repeat this procedure. Water based sealers should be recoated within 20 – 30 minutes whilst solvent based sealers can be recoated from 30minutes to 1hr after the application of the first coat.

***Note:*** Be thorough with the removal of the excess sealer.

Residues which do remain can be "buffed" off using a polishing / buffing pad and a very light application of the sealer. Ventilate the area to facilitate fast drying times.

Restrict foot traffic until totally dry.

*Sealing of high porosity stone*

**Includes sandstone,bluestone and some limestones.**
**Use this same procedure for all penetrating sealers.**

***Procedure***

1. **Preparation** – Based on the surface type and the potential soiling & staining agents, choose the appropriate sealer for the application. Ensure that the surface is totally clean, totally dry and chemical free.

2. **Application** – Saturate the area with the applicable sealer. Ensure that the surface is shiny wet for at least 30 seconds and that it stays damp for at least 10 minutes.

3. **Remove Excess** – It is unlikely that there will be residual sealer left on the tile surface.

4. **Moving forward** – Repeat steps 2 and 3 until the whole area is treated.

5. **Subsequent Coats** – If a $2^{ND}$ or $3^{RD}$ coat is to be applied; repeat this procedure. Water based sealers should be recoated within 20 – 30 minutes whilst solvent based sealers can be recoated from 30minutes to 1 hrs after the application of the first coat.

***Note:*** Ventilate the area to facilitate fast drying times. Restrict foot traffic until totally dry.