



Email: info@timelesspaving.co.uk • Tel: 0800 587 8061
Website: www.timelesspaving.co.uk

The 11 Most Important Issues You MUST Be Aware of When Buying a Pattern Imprinted Concrete Driveway or Patio and The Right Questions To Ask

When you are investing in your property you need to be confident you are going to get a top quality job done. In this Free Report we highlight the 5 most common pitfalls buyers can fall into, and arm you with the knowledge you need to ask the right questions prior to purchasing.

You'll discover how to:

1. Minimise the chance of cracking
2. Achieve a superb quality print
3. Get a Surface that lasts a lifetime
4. Achieve ideal colour consistency
5. Minimise future maintenance

Introduction

There are a number of key considerations and points worthy of note when choosing a contractor to install an area of pattern imprinted concrete paving. Below is a list of points which are essential for a good quality project, with regard to aesthetics, long term durability and periodic maintenance.

It should be stressed that this is not a technical bulletin; the aim of the report is to be informative, easy to understand and not misleading in any way. There will be points about which an architect or engineer may say 'that's not 100% technically correct'. However, to make these points 100% technically correct would take pages and pages of probably, difficult to understand, and possibly overcomplicated paragraphs and industry jargon.

Should you have any questions regarding the information contained herein, or wish to raise any other points not covered, please call us on 0800 587 8061 and we'll be happy to talk with you in more detail.

Minimising the chance of cracking:

- **Issue #1: Inadequate concrete thickness.**

The short version here is that the thicker the concrete the less likely it is to crack.

You want to ensure that a MINIMUM of 100mm (4") of concrete is used in your installation for normal domestic driveways. In fact Timeless Paving will often use 150mm on heavily trafficked areas.

KEY QUESTION: Ask your contracting company how much concrete they will be using. They should be using a minimum of one cubic metre of concrete for every ten square metres of paving.

- **Issue #2: Not laying the concrete on polythene.**

When concrete is laid on polythene, the polythene acts as a 'slip membrane' between the prepared sub base and the hardened concrete slab. This allows the concrete to move independently of the sub base and consequently concrete laid on polythene is less likely to crack.

In the warm weather a very positive second advantage is that the concrete sets a little slower, giving the crew more time to print the patterns and therefore get a better quality, more uniform print.

KEY QUESTION: Ask your contracting company if they install on polythene.

- **Issue #3: Movement Joint spacings and locations are incorrect.**

Firstly, as a preamble to the important subject of Movement Joints in concrete, it is worth noting that in the vast majority of instances when the essential movement joints are installed in concrete, they are 'contraction joints' (or crack control joints or crack inducing joints). They are NOT 'expansion joints', although they are often (incorrectly) referred to as expansion joints by people not familiar with the construction industry.

The three guides to best practice for Control Joint locations are:

- Try to incorporate joints into corners or high stress areas wherever possible.
- Maximum individual slab size of 20m².
- Follow the maximum length to width rule of 2:1 - (e.g. a long thin area of concrete, like a path, will require more frequent joints than a rectangular driveway.)

KEY QUESTION: Ask your contracting company for a drawing detailing where they propose to install the movement joints.

- **Issue #4: Contraction joints are cut in too late.**

It is normal practice to use a diamond blade to cut the joints into the concrete. These are cut into the concrete between $\frac{1}{3}$ and $\frac{1}{2}$ of the concrete thickness (NEVER the full slab thickness). It is general construction industry good practice that these are cut in within 24 hours of the concrete being laid (or sooner if possible). The sooner these joints are installed, the less likely that the concrete will have cracked before they are cut in. This becomes more important the warmer the weather. This is a good rule of thumb.

In colder weather conditions, such as in the winter, it may not be possible to cut the joints in within 24 hours, as this may damage the surface of the concrete. However, the colder the weather, the less likely the concrete will crack prior to the joints being cut in.

In very hot summer conditions and / or in high stress areas on an installation, joints are sometimes cut in at certain (not all) locations either prior to imprinting the pattern, or whilst printing the pattern. This is not the normal method of installing contraction joints, however, it can be useful at times. When joints are cut into the concrete before it has hardened, the joint need not be so deep and are cut in between $\frac{1}{4}$ and $\frac{1}{2}$ of slab depth.

KEY QUESTION: Ask your contracting company when they plan cutting the joints, and / or if they may cut some of the joints into the concrete while the concrete is still soft.

Achieving a good quality print

- **Issue #5: Too much undertaken in one day for the prevailing temperature and available manpower.**

The higher the temperature, the faster the concrete will set, so in warmer weather it is good practice to undertake smaller concrete pours than would be undertaken on a similar job in cooler conditions. Too much concrete for too little manpower will result in a poor quality print.

- **Issue #6: Not enough imprinting mats in the set to provide two complete rows.**

The number of imprinting mats available to use makes a big difference to the quality of the imprint, because the concrete can be printed more quickly with more imprinting mats. More imprinting mats in its own right, improves the quality of the imprint regardless of the time factor.

The 'industry standard' is 6 rigid imprinting mats in a set plus one super flexible imprinting mat for getting into the many awkward areas where a rigid imprinting mat would not fit. Often 6 imprinting mats is not the optimum number. At the very least sufficient imprinting mats are required so that they may span the whole width of the job. The ideal scenario is to have two complete rows of imprinting mats and unless the job is not very wide, a normal 6 + 1 set is often not the optimum number of imprinting mats.

KEY QUESTION: Ask your contracting company how many imprinting mats they will be using on your job.

Achieving Long term durability

- **Issue #7: Insufficient Colour Surface Hardener (CSH) used.**

Colour Surface Hardener (CSH) is used by almost every company in the industry. CSH is a VERY important part of the process. In fact it can be argued that the CSH used in the process is actually more important than the type and strength of the concrete.

The reason for this is two fold:

- 1/ CSH will make any concrete surface more durable in terms of abrasion resistance and freeze thaw resistance. For areas of paving used by domestic vehicles and subjected to freeze - thaw cycles and de icing salts, the increase in surface durability is significant as the strength of the surface can be nearly twice the strength of the main concrete slab. Using insufficient CSH will not achieve a strong surface. Using a generous quantity of CSH will produce a better quality surface.
- 2/ The industry standard is a MINIMUM of one 25kg bag per 10m² (or 2.5kgs per m²). Better surfaces are almost always achieved using more CSH. Quality contractors will be looking at using one bag per 10m² as the bare minimum and not the norm. Often the concrete will use 1.5 bags per 10m² and therefore quality contractors will turn up on site with one bag for every 6.5m².

For example, a quality installation company will have 9 bags of CSH on site for a 60m² job and not only the bare minimum of 6 bags.

KEY QUESTION: [Ask your contracting company how many bags of CSH they will have on site to use on your job.](#)

Achieving Colour Consistency Across the Whole Surface Area

- **Insufficient Colour Surface Hardener (CSH) used. (Again!)**

Using insufficient CSH can also contribute to a patchy or untrue colour. Often it is possible to 'get away with' only using the bare minimum of CSH on a job requiring only one delivery of concrete to complete the job. This is because if the colour achieved is not a true representation of the colour chosen (when applied under controlled conditions), then there is not another area of concrete to compare it with.

However on a larger job requiring more than one delivery of concrete, it is highly likely that one pour may be a significantly different shade / colour to another pour if insufficient CSH is used. That's because it is very likely that one load of concrete will be a bit wetter than another, and the wetter the concrete, the more CSH is required in order to achieve the true / correct colour. For many very valid reasons the concrete companies are unable to produce one load of concrete exactly the same as the next, however it is possible to use more CSH (if it is available on site for use) to counteract the potential colour differences from load to load.

KEY QUESTION: [Ask your contracting company how many bags of CSH they will have on site to use on your job.](#)

- **Issue #8: Integral colour is used instead of CSH.**

Certain Pattern Imprinted Concrete paving companies will promote the use of an integrally coloured concrete (coloured throughout the whole concrete slab) for two reasons:

- 1/ At point of sale it sounds better to the layperson that the whole of the concrete slab is coloured rather than 'just the surface' using CSH.
- 2/ For their own interests, it makes the job easier to do. As the concrete is delivered to site coloured, the surface does not need to have CSH applied, and this is one less job to do.

The downside of using an integrally coloured concrete is that:

- 1/ The surface will not be as durable as a surface which has been colour hardened.
- 2/ Colour inconsistencies are much more likely if CSH is not used.

Interestingly, organisations such as Disney use integral colour for nearly all their concrete paving requirements, however will specify that CSH must be used for all the pattern imprinted, stamped or textured concrete surfaces.

KEY QUESTION: [Ensure your contracting company are going to be using CSH.](#)

- **Issue #9: Excessive Secondary Colour left on the surface of the paving.**

A release agent powder, often called Antique Release Agent, is applied to the surface of the soft, coloured concrete, prior to imprinting the pattern. This powder serves two purposes:

- 1/ It prevents the imprinting mats sticking to the surface of the soft concrete.
- 2/ The release powder is coloured (normally Charcoal or Mahogany, but other colours are available) and this powder remains on the surface of the imprinted concrete until it is washed off a few days later. (So, don't worry if you've ordered a Deep Red driveway and you come home and it is all black.... that will be the release agent powder).

When the surface is washed off, most of the RA powder is removed, exposing the true chosen colour, with 'antiqued' and highlighted textures, giving a more authentic and natural look than just the base colour. So, in summary, the release agent prevents the mats from sticking and aesthetically 'antiques' the surface.

It is essential that the area is washed thoroughly before sealing the surface. If insufficient antiquing release agent is removed from the surface, then this release agent will act as a de-bond between the sealer and the paving, and will be likely to cause the sealer to come away from the paving.

If this does happen it is a time consuming and expensive process to remedy, therefore to ensure sufficient release agent is removed it is highly recommended to use Release Agent Wash, and it's also important to use a light acid wash to complete the process.

KEY QUESTION: Check with your contracting company that they will be using a release agent wash and an acid wash, to ensure adequate removal of the antiquing release agent from the top (wearing surface) of the paving.

Minimising maintenance

- **Issue #10: Water based sealer is used.**

Some companies will use a water based (acrylic) sealer as opposed to a solvent based (acrylic) sealer; this is generally due to the mistaken belief that, because it is water based, it can be applied to a damp surface. Wrong!

Contrary to what may seem logical to the layperson, a water-based sealer is just as likely to fail as a solvent based sealer if applied to a damp surface. The difference is that if failure does occur, rectifying a problem with a solvent based sealer is easy. Problems experienced when using a water based sealer are far more difficult to resolve. Solvent based sealers can, effectively, be “over-painted” if the area is clean, making the process relatively pain-free and easy. Water based sealers may need to be removed / rubbed down completely before reapplying.

Any application of sealer (any type of sealer) may sometimes require a re visit to site and may need some simple remedial work to correct minor sealer imperfections. Conditions need to be dry when sealing and although we can control many things, we cannot (unfortunately!) control the weather! Any sealer remedial work is an easy, straightforward and successful process when using a solvent based sealer.

With regard to minimising maintenance, generally an area of pattern imprinted concrete will benefit from a reseal every 3-5 years. This is a simple process if a solvent based sealer has been used. Again, it is not a simple process if a water-based sealer has been used, as any subsequent quote relies entirely on a mechanical key for a bond.

Often DIY stores or builders merchants promote sealers which are water based. Sealing pattern imprinted concrete with a water-based sealer, will very likely create problems that are not at all easy to resolve. BEWARE!

KEY QUESTION: Check with your contracting company that they will be using a solvent based sealer.

- **Issue #11: Joints not filled with a silicone joint filler.**

Pattern imprinted concrete requires very minimal maintenance and it is a true weed free product. Weeds will not grow through an area of PIC. However, weeds may grow in the cut movement joints, if dirt is allowed to collect and build up in these joints.

Therefore to minimise the chance of weed growth in the movement joints, we control dirt build up by applying a bead of silicone joint filler into the joint. This is not designed to make the joint water proof. It is to reduce dirt build up in the joints. No dirt means no, (or very little chance of) weed growth, and IF a weed does grow in a movement joint it is easy to remove, including roots, as the roots are not in soil, they are in fresh air, under the silicone joint filler.

KEY QUESTION: Check with your contracting company that they will be applying silicone joint filler to all movement joints that are cut with a diamond blade.

We hope you've found this report useful. It is not intended to cover every single aspect of a pattern imprinted concrete installation (in fact there are a lot more do's and don'ts than just these!!). But if these disciplines are adhered to, there is a much better chance your installation will be a successful one that gives you many years of pleasure, whoever you choose to do the job.