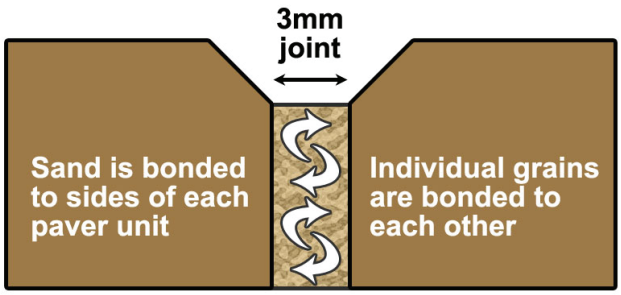
DIFFERENCES BETWEEN POLYURETHANE AND ACRYLIC SEALERS

- Solvent-based Acrylics
- Moisture Cured Urethanes

The most common sealants are the acrylics and urethanes (polyurethane).

The acrylic sealants are typically used on PIC and residential paving. They are relatively cheap, but require repeat treatments at yearly intervals to maintain their properties. They are not as flexible as urethane sealants and can be adversely affected by oils, petrol and other hydrocarbons. They are best considered as 'colour enhancers'.

The **Polyurethane sealants** are much more reliable and offer longer protection, albeit at a slightly higher cost. While some of the cheaper acrylic sealants are simply glorified varnishes, these top quality products can repel oils and paints, including light fuel oils such as petrol and paraffin, prevent staining and efflorescence, and virtually eliminate weeds. More importantly from a structural point of view, they bond the jointing sand to reduce loss through erosion, and give excellent flexibility of the sand between the joints. Some sealants have no visible effect on the appearance of the paving whilst most impart a permanent 'wet-look', with either a gloss or a matt finish.



How a Urethane sealant works

It is the higher-spec urethane-based sealants that are specified for civil or commercial applications. There is a growing body of research showing that the use of a high-specification urethane sealant can prolong the working life of a pavement as well as reducing 'whole-life' costs by minimising maintenance and cleaning. In high water-flow areas they ensure the structural integrity of the jointing sands and therefore the pavement as a whole, and they have been shown to reduce the amount of settlement/deformation in a trafficked pavement compared to untreated block paving.

GENERAL

Sealants for paving really established themselves in the Decorative Concrete market where they are an essential component of the finished work. From there, they moved into the Block Paving market, initially as stain preventers and, for concrete pavers.

As sealant technology advances, novel applications are being found, and their use is now spreading to new and rapidly growing markets such as:

- concrete and clay pavings used as internal floors.
- sealing of natural stone pavements
- sealing and joint stabilisation of wide jointed paving
- coloured acrylic sealers for patterned concrete

Sealants are proving their worth in more and more areas of the paving industry, but it is important to use the right sealant for any given paving type. A sealant that has been developed for use with PIC

may not be suitable for patio flagstones, and some surfaces, such as granite or quarry tiles, may not benefit at all from the application of sealants.

The Block Sealer Company Limited has developed a complete range of exciting sealers for use over a variety of pavers and concrete substrates.

Our aim is to provide the highest quality of sealers at the best cost effective price to the end user.

APPLICATION

Sealants should not be applied to any pavement that is less than 3 months old and not before all traces of efflorescence have disappeared - there's no point paying good money to seal in the efflorescence! Recent research suggests that sealing could take place as soon as 8 weeks after laying. The best sealer to use at this stage is a low solids polyurethane.

Power washing is recommended before applying the sealant, although this should be done at least 14 days before sealing to enable the bedding layer and sub-base to dry and allow for any reactive efflorescence to appear, and the lance must be kept at a shallow angle to minimise loss of jointing sand.

Prior to any sealing, the pavement should be thoroughly inspected for minor faults, and to ensure the jointing is complete, i.e. there is no jointing sand missing from the joints. Make sure there is no chance of rain over the next 24 hours and that the pavement is completely dry by raking out a couple of joints and checking the jointing sand 10mm or 15mm deep; if that's dry, the whole pavement can be considered dry.

The sealants can be applied by low-pressure spray, a squeegee or a long-handled roller. Different sealants recommend different application methods, so check the labelling before starting. Low-viscosity sealants can be sprayed, (we do not recommend spraying polyurethane sealers) as long as all relevant safety precautions are followed. Application by squeegees may not leave sufficient sealant on the surface of the blocks, and therefore roller application is preferred. The type of roller used can adversely affect sealant performance if the pile of the roller reacts with the solvents in the sealant, and so, care should be taken in choice of rollers. Some manufacturers supply specialist rollers precisely for the purpose of applying paving sealants.

Make sure that the sealant is worked into the joints to penetrate the jointing sand. Coverage is usually poor on the first coat, typically 2- 4 m² per litre. This coat should be allowed to dry, and then a second coat applied at right angles to the previous application. The second coat will cover at a much better rate, approx 4-6m2

New research is constantly being undertaken on the long term performance of various pavers both sealed and unsealed. There is some evidence that sealing a pavement can prevent damage by water ingress via the joints of elemental surfaces, such as block or brick paving, although how relevant this is to residential, low-traffic paving is debatable. PIC has no option; they must be sealed, if only to make the colours look acceptable.

CONCLUSIONS

The good quality polyurethane sealants are relatively expensive, costing £2 and more per m² treated, but latest research is indicating they have a lifespan of 10 years or more, whereas the cheaper acrylics might be only half the cost but the paving usually has to be re-sealed every 12-36 months.

Whether these sealants represent a good investment for residential paving can only be determined by the client, but some will consider it a small price to pay to protect and preserve their paving.

However, they can be a worthwhile investment if you are protecting valuable or 'hard-to-replace' types of paving, such as custom-manufactured blocks or PIC. For high-load or heavy-traffic applications, they are becoming essential, and in town centres, they not only keep the paving clean, they all but eliminate the risk of damage to the jointing caused by mechanical sweepers and high-power water jet cleaning techniques.

For the homeowner, the main attraction of a sealant, other than stain protection, is that the better products do reduce or eliminate any colonisation by weeds, thereby reducing the chore of regular maintenance, and they can also prevent 'mining' of the jointing sand by ants or other invertebrates.

One area of growth for sealants is in driveway refurbishment. As the number of block paved areas older than around 10 years has grown, owners have realised that sealants offer an effective method of reducing regular maintenance, by keeping the surface clean and free from weeds.

However, when undertaken properly, there can be no doubt that a wash-and-brush-up followed by the application of a quality sealant can completely rejuvenate a tired-looking block driveway and usually at a quite reasonable price. The key to success is to find a professional contractor who understands paving as well as cleaning, and is willing to give the project the necessary time between cleaning and sealing to ensure the very best of results. Be wary of 'cleaning-only' companies: there's a knack to cleaning paving and keeping it in tip-top condition.

In summary, if a sealant is to be used on any paving, it's well worth spending extra and getting a quality product, rather than trying to do it on the cheap and then being hit with re-application costs in the none-too-distant future.