



# Clay Paver Coping on Concrete Pools

Good Practice  
Recommendations

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# Recommended procedure for laying clay paver pool coping

Unless the ring beam is smoothly finished there will be a need to lay a leveling mortar bed to give a level surface to lay the coping. The clay coping pavers should be laid using a flexible adhesive such as Bostik Seal 'N' Flex or a product with similar attributes.

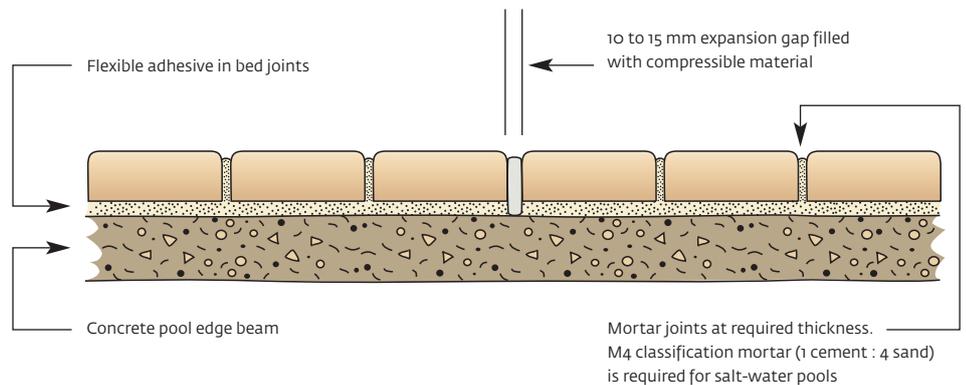
Based on tests at The University of Newcastle, it is recommended that the adhesive used should have an elastic modulus less than 1 MPa at 100 percent elongation.

Prepare the leveling bed and the clay coping paver in accordance with the Bostik recommendation (see appendix) and lay the pavers on an even bed of adhesive 3 to 5 mm thick with mortar joints at the required thickness. (see figure 1). Note: M4 classification mortar (1 cement : 4 sand) is required for salt-water pools.

The location and width of expansion gaps is usually specified by the pool designer (for typical locations see figure 2). However, the gaps should be sufficiently wide (minimum of 10 mm) to accommodate the combined expansion of these short runs of pavers, the shrinkage in the concrete, and thermal expansion. Their intention is to break the pool coping into lengths shorter than 5 metres.

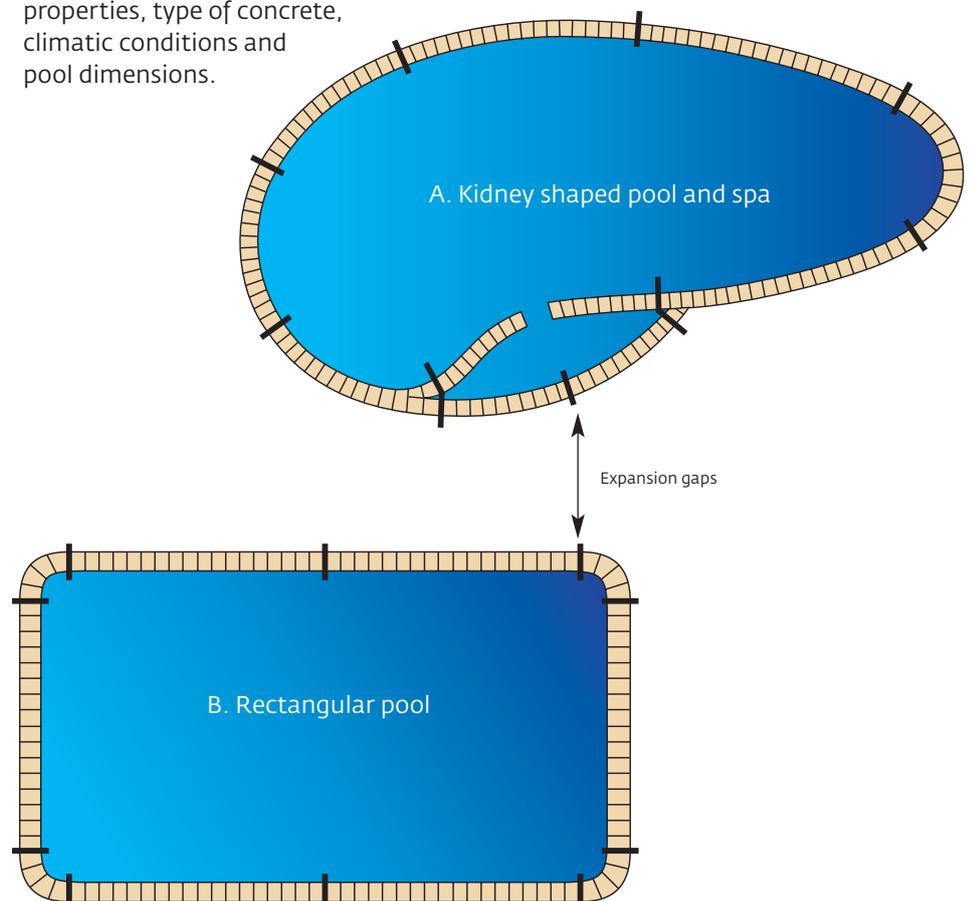
The expansion gap should extend the full depth of the paver and adhesive layer and it is essential the gap is free of any waste material.

**Figure 1. Expansion gap construction detail**



**Figure 2 Typical location of expansion gaps around pools**

These locations are indicative only. The number and actual locations may vary depending on the paver properties, type of concrete, climatic conditions and pool dimensions.



## General recommendations

These recommendations aim to minimize shrinkage in the concrete ring beam and mortar levelling bed, maximize the bond between the coping paver and the bed joint adhesive and minimize the effect of the expansion from the clay coping paver.

## Design

In the pool design, avoid sharp radius corners which can increase the local stresses between the pavers and the bed joint.

## Selecting pavers

- Choose low expansion pavers with an 'e' factor of less than 1.0 (ask the manufacturer for the characteristic expansion properties).
- Allow as much time as possible for the pavers to age before laying – the rate of expansion reduces rapidly with time after the pavers leave the kiln.
- Pavers used around swimming pools should be classified Exposure Grade.

## Pool concrete

- Avoid construction in hot, dry weather – shrinkage is higher at high temperatures and low humidity. Increased air movement (wind) will increase the rate of drying which will lead to increased shrinkage.
- the minimum practicable water content (consider the use of a superplasticiser for the pool concrete).
- Ensure good compaction of the pool concrete and the use of the maximum practicable aggregate size.
- Allow as much time as possible between casting of the concrete ring beam and the laying of the pavers – shrinkage is faster at early age (even a few days can be beneficial).
- Cure the concrete by keeping it moist, especially in hot, dry weather.
- As far as practicable ensure a level, true finish to the concrete ring beam, with a rough surface (not trowelled) to maximise adhesion.
- Ensure the ring beam is clean before applying a levelling mortar bed (if required) or adhesive.

## Mortar levelling bed

- Avoid construction in hot, dry weather – shrinkage is higher at high temperatures and low humidity. Increased air movement (wind) will also increase shrinkage.
- Use the minimum practicable water content.
- Allow as much time as possible between laying of the mortar bed and laying of pavers – shrinkage is faster at early age (even a few days can be beneficial).
- Cure the mortar by keeping it moist, especially in hot, dry weather.
- Consider the use of shrink limited (SL) cement, if practicable, for the bedding layer.
- Avoid the use of high cement content in the bedding mortar (1:5 cement:sand by volume should be adequate).
- Use a uniform thickness bedding layer of mortar, preferably between 20 and 40 mm thickness.
- Use a screeded or wooden float finish (not steel trowelled) to maximise adhesion of the pavers.
- Use a clean sharp sand with minimal clay content for the bedding layer mix (not brickies loam).
- Do not use workability enhancing admixtures in the bedding mortar.

# Appendix

## Bostik adhesive recommendation

The following is Bostik's recommendation for fixing of clay coping pavers to the horizontal plane of the ring beam of concrete pools in exposed locations with proximity to chloride environments. The recommendation does not apply to areas below the overflow level of the pool where the product will be immersed in pool water.

Clay coping pavers are porous by nature. Even pavers with a decorative finish must be assumed to be porous, without protection from external moisture.

The following procedures, using polyurethane adhesive, will maximise adhesive performance and give maximum protection to the bond line on both substrates, however, exposed adhesive will be subject to softening and loss of adhesion over time.

## Concrete substrate

- The substrate should be clean and dry with no contamination present. Prior to the application of adhesive the substrate should be fully cured (minimum 28 days) and structurally sound.
- Once the substrate is cured, clean and dry apply Simson Primer P as per the Bostik Technical Data Sheet which is available with the purchase of Seal 'N' Flex FC.
- To minimise staining of the substrate not covered by the coping paver it is recommended that the template provided with the Simson Primer P be used.

- Allow minimum one hour after the application of the primer before applying Seal 'N' Flex FC.
- Due to the proximity to a chloride environment, adhesive must be applied to the entire area of concrete to be covered by the coping pavers. Intermittent, beaded or spot-fixed application is not recommended as increased concentrations of chlorine may become trapped in the adhesive bed voids.

## Coping paver base

- The base of the coping paver must be clean and dry with no contamination.
- To the base of a clean and dry coping paver apply Simson Primer P.
- Co-ordination of the priming sequence to both the concrete substrate and the coping paver is required for optimum results.
- Bed the coping pavers into the adhesive a minimum of one hour after application of Simson Primer P to the paver and as soon as practicable after application of Seal 'N' Flex FC to concrete substrate.
- The dry film thickness of the adhesive must be a minimum 1 mm, however 3 mm to 5 mm is recommended. Care should be taken to ensure maximum contact and transfer to both interfaces (see Bostik Technical Data Sheet).

## General

- Not using of a primer prior to the application of the adhesive may provide short to medium term success of up to five years due to the possible effect of saturated porous substrates.
- Seal 'N' Flex FC or similar products should not be used in areas subject to constant or periodic immersion in pool water.
- Full bed application of adhesive to primed substrates will limit the affect of softening to the exposed adhesive due to splashing from chlorine or salt treated water.

Adherence to these recommendations will provide the best possible result for the long term sustainability of the pool coping.