

DIY PAVING GUIDE



Concrete Pavers • Stone Pavers • Tiles • Garden Walls & Edging
Retaining Walls • Concrete Sleepers • Concrete Blocks • Wall Cladding

BEFORE YOU START

Going DIY?

Doing a DIY project is very rewarding but requires thought, careful planning, the proper tools, the right materials as well as some lifting and patience.

If you've decided on DIY, at APC we can help. Browse our extensive Knowledge Centre for valuable resources on any DIY project or visit your nearest APC and grab a free paver sample!

And of course, once the job is done, you can help maintain your pavers by applying a sealer and also read through our paver maintenance brochure to tackle any stains and marks and keep your project looking great.

Required Tools & Materials

- Quarry rubble
- Bedding sand
- Pavers or blocks
- Gloves
- Wheelbarrow
- Shovel
- Steel screed rails/straps
- Pick
- Steel screed bar
- String lines
- String line level
- Steel pins
- Spirit level
- Hammer
- Straight edge
- Trowel
- Broom
- Blower (leaf) for cleaning pavers
- Compactor plate
- Tape measure
- Rubber mallet
- Brick saw
- Finejoint sand
- Concrete mix (edge restraint)

Before you start

- Always wear eye protection when cutting pavers
- Wear ear muffs when you are using a compactor or brick saw
- Bend your knees when lifting heavy pavers
- Wear work boots to protect your feet and gloves to protect your hands
- Slip, slop, slap if you are working in the sun and keep your fluids up.

Planning

Before beginning it is important to have a clear plan worked out. The first step is knowing the exact dimensions of the area to be paved. Measure out your area and mark with string or paint. Once you have measured and measured again you can start to draw up your plan.

Pavers can usually be laid around your house without council approval. However, if you're doing a driveway or working in an area where your paving encroaches onto council verges, you may need to contact your local council. Some of the newer residential communities have covenants covering the use of driveway material. If so get authorisation before proceeding.



Determining your paver quantities

After you decide the colour and texture, next you need to work out how many you'll need. But how do you accurately calculate how many pavers you will need? The easiest way to do this is by measuring the space you plan to pave. Multiply the length and width of your area to get the total square metre (m²). Once you have figured the entire area and how many pavers you'll need, we recommend adding an extra 5% to the number. These additional pavers will account for cuts and breakages that may happen.

Eg. length of 10m x width of 2m = 20m²

When planning make sure you allow for storm water run off and think about any other services you may want laid under the paving such as irrigation or electrical for lighting before you begin.

For odd shaped areas
break into sections

Area 1: 4m x 3m = 12m²

Area 2: 6m x 3m = 18m²

Area 3: 1/2m x 6m x 2m = 6m²

Total area to be paved = 36m²

For rectangular areas

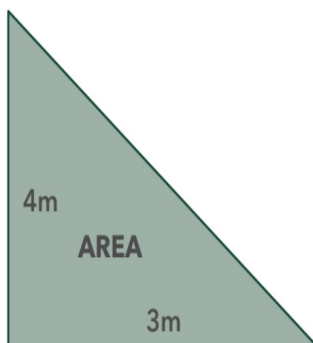
base(m) x height(m) = area(m²)



eg. 3m x 5m = 15m²

For triangular areas

1/2 x base(m) x height(m)
= area(m²)



eg. 1/2 x 3m x 4m = 6m²



PREPARING TO PAVE



STEP 1: Preparing the site

Correct preparation is the most important part of your paving project and if done correctly will save you time in the long run and make sure your pavers will look great for years to come.

Excavation

In most cases it may be necessary to excavate the area to be paved. The depth of this excavation will depend on the thickness of paver you have selected.



The depth of your excavation should be as follows:

(depth of paver) + 30mm for bedding sand + 75mm compacted road base (for walkways)

or (depth of paver) + 150mm compacted road base (for driveways)

= depth of excavation required.

Once you have worked out the desired finished surface level:

- Drive four stakes into the ground on the corners of the area to be paved and run string lines between them at the finished surface level.
- Level the strings using a string line level.
- Remove all grass from the area to be paved.
- Excavate the ground to the required depth.
- The prepared ground must be even.
- Compact or replace soft spots in the ground.
- Spread and compact road base if paving a driveway area.

Rain water must flow off the finished paving and away from the buildings. The paving must not be perfectly flat, but should slope a little (about 15mm per metre).

If the paving is against the side of the house, the pavers must be below the damp proof course. Never cover damp proof courses or air vents.

Check evenness and depth of base by measuring from string line. The finished surface level of pavers may be at or above ground level.

ESTIMATING MATERIALS

STEP 2: Sub-grade

Correct base preparation is perhaps the most important part of every paving project. The sub-grade is the natural soil that the paving is supported on. This should be firm and all top soil and vegetation removed. String lines should be used to determine the finished level. The finished height of the sub-grade should be trimmed to within 25mm of the desired level and compacted if necessary. Backfill for service trenches should be compacted in layers no greater than 150mm. Correct preparation of sub-grade reduces the incidence of shrinking and rutting.

Roadbase

The roadbase is imported quarry rubble used to build up areas, set levels and provide a strong, stable layer to support the laid pavement. A 75-80mm thick layer for walkways and 100-150mm thick for driveways to 10mm of the desired level to allow for compaction.

The roadbase for walkways may be reduced on sandy or non-reactive sub-grades, however, it does add considerable strength to the pavement and is recommended for a 'first class' job. All roadbase material should be compacted with, at least, three passes of a mechanical vibrating plate compactor.

The roadbase material extends past the outer perimeter of the paving work. This means that the edge restraint lasts longer and reduces the incidence of outer perimeter paving subsidence, so common with standard paving practices.

Bedding sand

The next step is to lay bedding sand evenly over the area to a depth of 30mm. Bedding sand (washed concrete sand) is required under all paving. 1 tonne will cover approximately 20m².

i.e: $20\text{m}^2 \times .03 \text{ (30mm) depth m} = .6 \text{ Cubic m}^3$

$.6\text{m}^3 \times 1.8 = 1.08\text{Tonne}$

STEP 3: Screeding the bedding sand

A thin layer of bedding sand is required as the final preparation for laying pavers. The levels for this base will be reflected in the finish of the paving, so it must be accurate. The most effective method to level the bedding is to use two screeding straps set accurately in the bedding sand to the required levels and placed approximately 1m to 3m apart. The screeding straps are about 100-125mm in width and 2-3mm in thickness. Length of the straps can vary from 1.5mtrs to 3mtrs long.

The screed rail is then used to level off between the screeding straps. The straps are then removed and the sand is smoothed off with a trowel prior to laying the pavers. The bedding sand is not a leveling medium, the thickness must be kept consistent across the paved area to avoid uneven settlement of the paving.

Remember the level of the bedding sand will determine the finished levels of the paving so take your time to get it right and allow for necessary falls.



PAVING PATTERNS

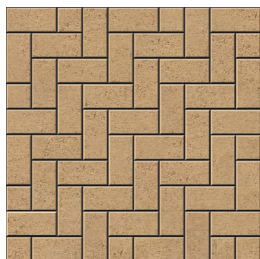
Paving Patterns can be unlimited due to the many different sizes, shapes and colours we now have to choose from. One of the key benefits to using pavers over poured concrete is because of the huge range of choices we have.

Pavers are designed to mix and match in colour and sizes. Whether you are utilizing different patterns to highlight feature areas or matching up to the colour range of your property and buildings, this is what makes segmental pavers unique.

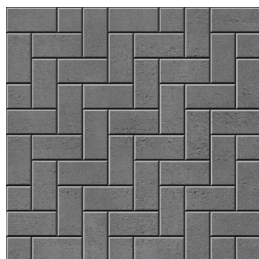
Not only is the colour of the paver important but so too is the pattern you select for each area. Each pattern may vary dependent upon whether a driveway is steep, sloping or flat. Alfresco paving patterns tend to be less busy with straight lines, whilst garden path patterns may be curved.

At your local APC store we have the knowledge and experience to best advise you which pattern and what colour will best complement the area you are about to pave.

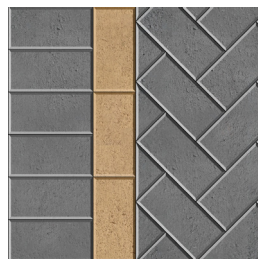
Brick Shape Paving Patterns



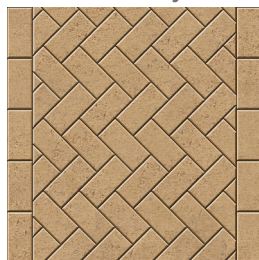
Herringbone



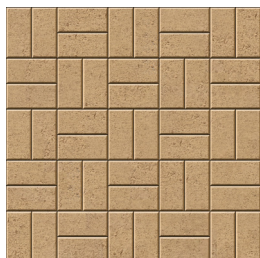
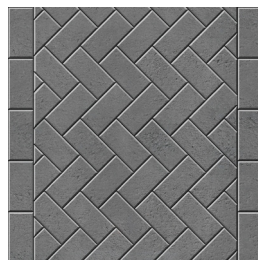
45° Herringbone with contrasting stretcher inlay and header



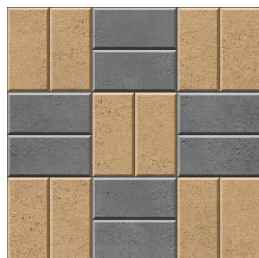
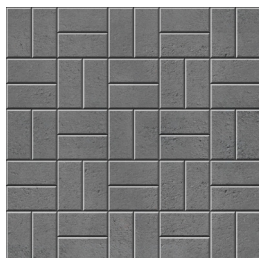
45° Herringbone with header course



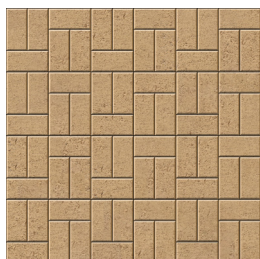
45° Herringbone with flat header course



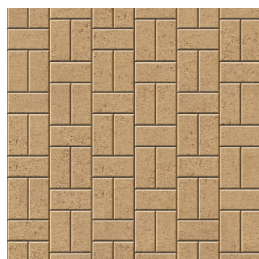
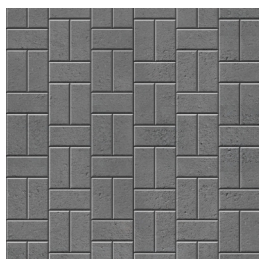
Basketweave



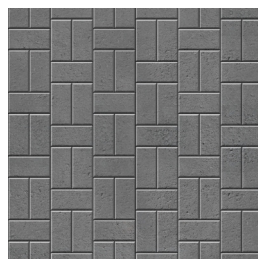
Basketweave with contrasting colour



Single basketweave



Offset single basketweave

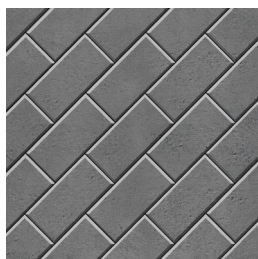


PAVING PATTERNS

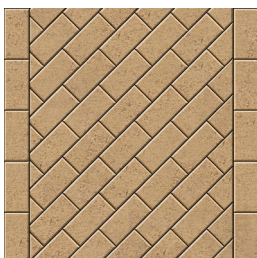
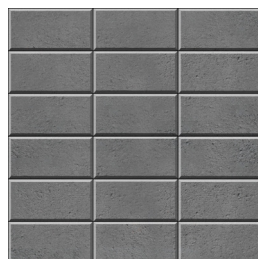
Brick Shape Paving Patterns



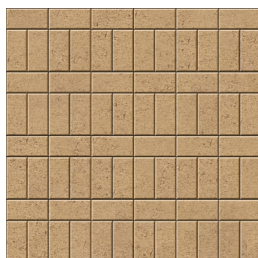
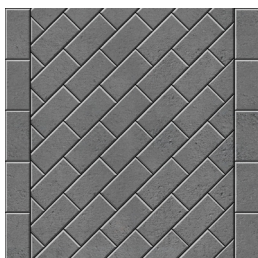
45° Stretcher Bond (rectangle)



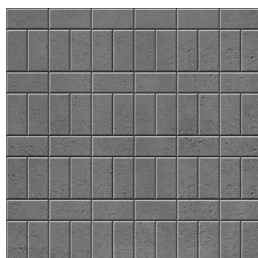
Stack Bond (Rectangle)



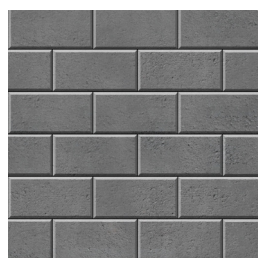
45° Stretcher Bond with flat header



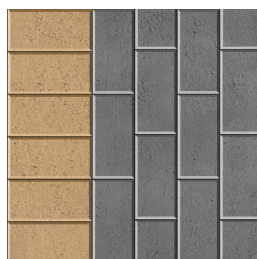
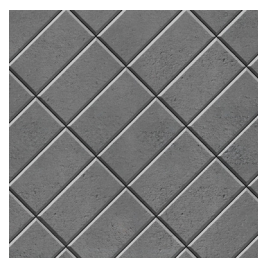
Running Stacked Bond



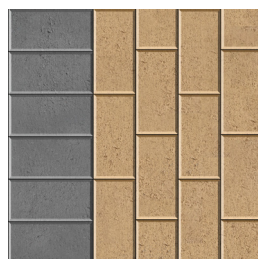
Stretcher Bond / Brick Bond (Rectangle)



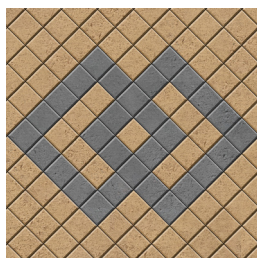
45° Stack Bond (Rectangle)



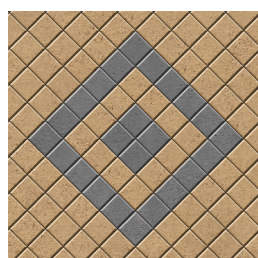
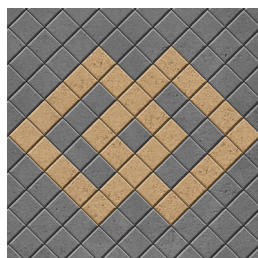
Stretcher Bond with contrasting header



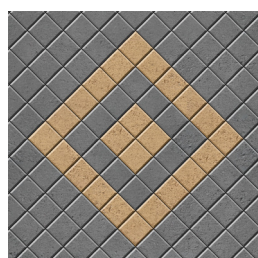
Diamond Paving Patterns



45° Stack Bond with contrasting double diamond inlay



45° Stack Bond with contrasting diamond inlay



PAVING PATTERNS

Square Shape Paving Patterns



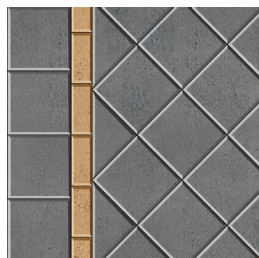
Stretcher Bond / Brick Bond (Square)



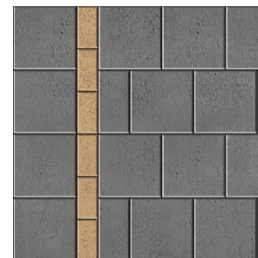
Stack Bond (Square)



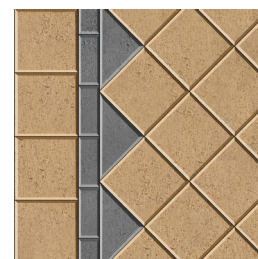
45° Stack Bond with contrasting stretcher inlay and header



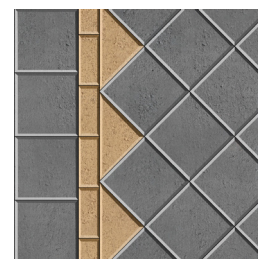
Stretcher Bond with contrasting stretcher inlay and header



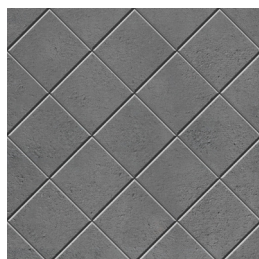
45° Stack Bond with contrasting triangle-cut inlay and header



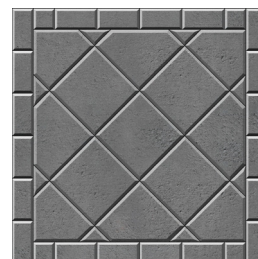
45° Stack Bond with contrasting triangle cut inlay, stretcher inlay & header



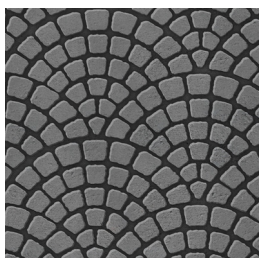
45° Stack Bond / Diamond (Square)



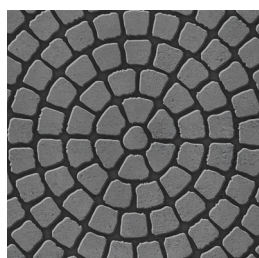
45° Stack Bond / Diamond with flat header course



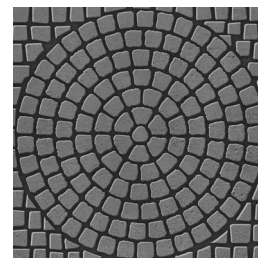
Circular Paving Patterns



Scallop



Circle



Circle with run bond border

HOW TO PAVE



Always lay pavers in lines using a string line if necessary.

STEP 4: Laying the pavers

When laying pavers, it is generally best to start in a corner or along an edge such as a house footing.

Place the pavers, using the desired pattern, on the screed sand. Take care to ensure that all pavers are level. By using string lines and regular visual checking of the paving, it is possible to keep the joints straight. Laid pavers can be adjusted with a trowel to correct any minor errors in the joint alignment. Some pavers should be laid with a 2-3mm gap between each paver.

Always work from the top of pavers that have just been laid so as to avoid disturbing the screeded bedding sand.

Cutting the pavers

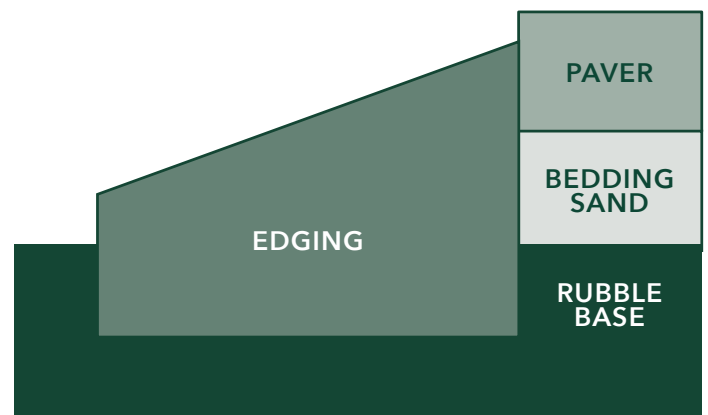
Leave cutting and placing of edge pavers until the last step. Carefully mark the pavers to be cut with a 'texta' and number the back of them. For a quality professional finish, use a diamond base brick saw, remembering to wear proper safety equipment when cutting pavers. Put aside any broken or chipped pavers and use these for cutting if possible.

STEP 5: Edge restraint

Where the paving does not abut a solid structure, an edge is required to prevent the pavers spreading or opening up.

Finishing unsupported edges of the paving with a concealed concrete edge strip is the most common method used to support the paving.

The edge restraint should be kept at least 10mm below the finished level of the paving to allow for compaction. Alternatively, the edge restraint can be an exposed concrete strip or the edge can be set on a concrete base.



Final preparation

The completed preparation for the paving should be firm and level with a fall to allow for rainwater run-off. The use of string lines will help maintain the line and levels to ensure an accurate preparation. The prepared surface level should not deviate by more than 10mm over a 3m length from the required profile.



HOW TO PAVE



Filling the joints

Dry jointing sand should be spread over the surface of the pavers and swept into joints in the paving. Compacting of pavement should then be completed to lock the pavers in before brushing off the excess sweep sand.

In some instances, it may be necessary to make an additional pass over the paving with the broom and re-compact the pavers to ensure all joints are thoroughly filled.

STEP 6: Pave Set

If paving a driveway, footpath, patio or any high foot traffic area, Pave Set is required to fill the gaps between pavers, blocks and bricks to secure their positioning and eliminate movement.

Made from a selected blend of sand, binder and gelling agents, Pave Set does not set hard rather it gels the area between the pavers and may require maintenance in certain areas over time.

Before using Pave Set

Before applying Pave Set to your paved area, check the following list of precautions.

Pave Set should not be used:

- If rain is forecast within 3 days of application
- If high winds are expected within 3 days of application
- On pavers that are not on a well-drained sub-base
- Around swimming pools
- In areas that are constantly wet as it does not prevent water penetrating gaps
- On steep inclines
- In gaps wider than 4mm

Ensure that the paved area is dry by covering a small area with plastic for 24 hours before application. Inspect the underside after 24 hours to ensure no moisture. This is essential if pavers are recently made or have been subject to recent rain.

Top layer: Jointing sand

When you lay pavers it's recommended that you leave a 2 – 3mm gap between pavers, jointing sand is broomed into the gaps. A 20kg bag should cover between 10 – 20m² at the recommended 2 – 3mm gap.

Paved area ____ (m2) x 0.067 (allows for 3mm joint spaces) = ____ 40kg bags of jointing sand required

HOW TO PAVE

Applying Pave Set

1. Make sure that the paved area is dry and clean of any loose material such as dirt or sand.
2. Spread Pave Set evenly over the surface of the pavers and then sweep the Pave Set into the gaps

Note: A good practice is to pour the Pave Set along the joints to minimize the potential for segregation of the polymer from the sand.

3. Avoid sweeping the Pave Set over long distances, as this will cause segregation and inconsistent gelling.
4. Compact the Pave Set into the joints using a vibrating plate or rubber mallet.
5. Apply more Pave Set, sweep and compact until joints are filled. Please note that Pave Set will only work effectively if applied correctly between the vertical walls of the pavers.

✓ Correct Pave Set filling amount



✗ Incorrect Pave Set filling amount



6. Thoroughly clean the pavers by sweeping with a fine bristle broom to avoid the polymer and binder from sticking to or staining the surface of the pavers during wetting.

Note: Using a blower ensures that all residue is removed from the top of the pavers.

7. With a fine mist spray, wet the paved area until Pave Set has efficiently absorbed the water through its entire depth.

Note: For best results, target areas of no greater than 2m² at a time before moving on to the next area. Do not flood the area or use high pressure, as this will impede the gelling process.

8. Allow the Pave Set to dry and gel for at least 2 days (longer during cooler months) before sweeping or allowing heaving traffic on the area.

Note. It is important to allow the approximate drying time for Pave Set to work effectively.

9. You may need to top up gaps every year especially after heavy rains. To do this clean out the gap before applying the Pave Set and soak again with the steps above.



HOW TO PAVE



STEP 7: Compacting the pavers

After the pavers have been laid and dry jointing sand spread over the surface, (and into the joints), the pavers should be compacted. This will bed the pavers down and assist in ensuring all the pavers are level and any minor imperfections are rectified to produce a professional finish to the job.

For a more professional finish, it is better to hire a mechanical vibrating plate compactor fitted with rubber or carpet base.

A layer of sweep sand spread over the surface of the pavers will protect the pavers from damage during the final plate compaction of the laid pavers.



Important points to remember

Termite control

Correct building standards must be adhered to whilst paving around your home. If not, infestation may occur from subterranean termites, wood boring beetles and fungi.

Damp proofing

Ensure the paving level around your home is minimum of 50mm below the damp-course level of your house or to local building codes.

This prevents excessive moisture breaching the damp-course membrane.

Surface water drainage

Ensure the sub-grade is graded correctly to adequately direct service water away from your home. The paving height around the overflow relief galley must be a minimum of 150mm below the lowest sanitary fixture. If these requirements are not followed, raw sewage may flow inside your home.

Storm water

All pipe work, sumps, grates and inspection points must be back-filled with filling sand and compacted.

All storm-water installation must comply with minimum depth requirements. Correct storm-water installation and back fill reduces the incidence of sinking or rutting over trenches.



TIPS & TRICKS



Laying pavers can be tricky to master so to achieve a professional finish we have compiled some quick tips and tricks.

- Use string lines where possible.
- Ensure you lay the grain running the same way.
- When laying pavers work off as many pallets as possible (three or more). This will allow you to evenly blend the product.
- For best results, choose pavers down the sides of your pallets (not across) randomly. This will give a more even blending.
- Imagine the finished product. Have all half cuts or full pavers at doorways and focal points, when setting out your paving.
- There is no such thing as too much drainage!
- When laying up a hill, start at the bottom and sand in as you go. This will help avoid lines shifting with gravity.
- The screed rail and straps method of preparing sand for laying is most effective (see Step 3. Screeding the bedding sand)

- Always use coarse washed river sand or a similar bedding sand for paving projects.
- Ensure you order everything you need at once and set aside an allowance for breakages and cutting.
- Use stakes to mark corners of the area to be paved and run a string line between them. The level of the string should be the level at which you want your paving to be. You can use spirit level to check the level.
- Do not keep the entire surface on a single level. You need to give a small slope for the water to run off. Be careful while setting the direction of the slope as the slope should be away from your property.
- If you are paving right next to your house, use a plastic membrane against the concrete foundation that has been exposed.
- Invest in a drain at the low point of the slope so that water does not accumulate between pavers. If water is allowed to remain between pavers, it can reduce stability and also bring efflorescence.
- To prevent washing out of the bed sand, restrain the edges of the paving. Opt for reinforced concrete or mortar restraints for strong support.

Paving is simple and with the endless option of pavers, you are surely going to enjoy the experience!



TIPS & TRICKS

Top 10 Tips for Easy Delivery of Pavers

Delivery of your pavers, bricks or retaining wall system is the first exciting step in the construction of your project. We at APC take pride in efficient and effective delivery of our products to your site. A few simple guidelines will help us help you in placing your product where you want it, when you want it.

1. Estimate accurately. We can help you estimate your requirements to avoid over or under ordering.
2. Not so fast! Have your product delivered to site at least one day before starting work. Starting work on the delivery day may lead to lost time due to waiting.
3. Take as much product as you can on each delivery. Ordering a full load ensures priority delivery and allows tradesmen to blend from multiple pallets ensuring an even mix of colours in blended products.
4. Trucks are big! We need to know if there are any obstacles for the trucks such as clearways, main roads, one way streets, schools, hospitals, weight restrictions, a land mark if on a main road etc.
5. Is your site prominent? Place a "site sign" on your front fence or boundary to eliminate any confusion.
6. Is the site locked? We need to know access times. If you require us to enter through a neighbor's property, it is your responsibility to gain prior written permission.
7. Where do you want them? Consult with your Tradie on best place for delivery and inform our sales staff where your delivery is to be placed. You want your delivery to be in a convenient location, without being in the way. Place markers where possible. Our tractors need at least 2.5 meters clear width and 2.1 meters height clearance.
8. Pavers are heavy! A forklift with a pallet weighs about 5 tonnes. It is your responsibility to ensure the ground and any path or driveway that has to be crossed can take the weight. Storm water pipes are particularly vulnerable to damage.
9. Safety first! Ensure children and pets are well out of the way during delivery. Our delivery drivers will do their best to place pallets in the locations required but they have the final say when it comes to safety and possible site damage and damage to their vehicles.
10. Delivery times. A minimum of 48 hours is usually required to organise your deliveries. We cannot guarantee exact delivery times, as heavy vehicles can be affected by traffic and difficult sites.



FINDING THE RIGHT TRADIE

Tips on how to find the right Tradie

When it comes to paving or retaining walls, you'll need to consider whether you'll hire a professional contractor or DIY. You can hire a licensed contractor and they can do the job for you, guaranteeing quality of work. At Australian Paving Centre, we know the best paving and landscaping contractors. All of our preferred tradies are licenced, insured, qualified and produce excellent work quality, providing maximum value for your money. You can request a quote online and we'll put you in touch with the right tradie for your project.

- Find someone local. Local tradies should respond to quotes quickly because they are concentrating on work in their local area. If they are local, they are generally on-site more often and readily available to attend to the project for any rectification work or additional small jobs. If you don't use a local tradie in the first instance, it is most difficult to get the same tradie back to do a small fiddly job.
- Your local tradie must be licensed for the work they are quoting to complete. Their builders' license will have a summary of what work they are authorised to do.
- Your tradie must be insured in case something goes wrong on the job. Accidents can happen!
- The tradie should provide a written quote. It is not unreasonable for them to ask for a deposit prior to starting the job. A deposit of between 33% and 50% is fair for the small operators.
- Ask to see some local work similar to what you are asking them to quote and inspect it.
- Look for the local tradies' Facebook page or Instagram page and check out their work. Some have websites, but most are very basic. If they don't have a website, this should not deter your choice because a lot of these tradies do not have a website. Good tradies find their work through word-of-mouth and referrals. The tradies having to rely on service-based internet companies for quotes may not produce good quality work.

- Try not to use a business where the person quoting the project does not work in the industry in a hands-on capacity. Many people find that those that only quote the jobs and do not get involved in installation invariably over promise and under deliver. These types of business structures are more expensive due to higher operating costs of covering the salesperson or the quoter as well as the installation team.
- For best results and better value for money, use the small business owner-operators who quote and build the project they have quoted for you. When the tradie who quotes the job builds the job, you get a much better result of what you are looking to achieve.

Research and purchase the pavers, retaining wall and landscaping products yourself. It provides a cheaper overall cost for your paving, landscaping or retaining wall project and you buy the product you like and not the product the tradie makes the most money out of.

