



the**stone**yard.co.uk

# 2013

## Laying instructions, information and prices



TheStoneYard.co.uk

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## Laying instructions



Here is our general laying advice, however, always seek local advice in case your situation requires special or demands individual attention. Every country has its own methods and products to lay setts.

Granite in mainland Europe is often laid on sand, this is much cheaper than laying in cement but setts may shift over time and occasional maintenance is required. Sand laid granite is also susceptible to ruts if driven over. For further information see [http://www.ihbc.org.uk/context\\_archive/56/stonepaving/tradit.html](http://www.ihbc.org.uk/context_archive/56/stonepaving/tradit.html).

### Laying in cement

1. Vibrate down base well with a wacker plate
2. Lay 2 -3 " sharp sand over the base and vibrate down - this should be your basic level minus the thickness of setts and cement
3. Along the first line lay 3" (or 4" if you want to drive over the pavement) of 6 : 2 : 1 dust to 8mm gravel : sharp sand : cement, then combine additives - plasticiser. Be sure not to mix too dry. In mainland Europe polyester fibres are added to reduce cracking.
4. Make up a builders line and place stones along the first line. Knock down with rubber hammer while maintaining straightness and about a 2 cm grouting depth. Keep face as clean as possible.
5. Lay second line. When placing stones along this line be sure to align the stones along their centres rather than align each one with its side to the line as this may result in an uneven appearance.
6. Continue with remaining lines, keeping as flat and even as possible while continuously checking lines and adjusting accordingly.
7. Allow to harden for one week minimum, and more time if you intend to drive on it regularly. Full curing of cement to maximum strength can take up to four weeks.

You will need a good, strong, base to begin with – for example a well vibrated 2 - 4" MOT 1 rubble. I highly recommend beginning with a small trial area to make sure you are happy with your base and are confident of your laying technique. Please also note the following points:

- Any existing hard standing can be removed.
- Soft soil will require a thicker base
- Use a membrane to prevent sand mixing with the earth.
- For large areas use an expansion joint.
- Consider runoff and drainage.
- Start project in least visible area if possible. As you lay the stone comes better to hand and quality improves.

*Keep in mind run off, and installation of drainage pipes, as the setts will be waterproof unless you use an epoxy or lime based grout. Extra thickness cement mix is advised at the entrance to a driveway, or thicker setts (10cm) might be used.*



## Grouting when laying in cement.

You have a number of options:

1. Make up a 3 : 1 : kiln dried sand : cement (dry) mix. Mix well and brush in fully. This has to be done on a very dry day with setts completely dry. If you wish to water, use only a very fine mist. This method though commonly used and is the simplest it is not however the best for strength and long term frost resistance. A wet grout mix is superior but difficult to apply.
2. Use a jointing slurry from companies like Steintec (comes in many colours).
3. Use an epoxy based product from Resiply or Romex that has 3 - 40 ton rated grouts, see <http://www.romex-pfm.de>. This is probably the best



overall solution but is the most costly. It is water permeable (puddles do not form in the joints), as well as being flexible and strong. It is also the quickest to apply, and leaves the face totally clean. If application cost is factored in it may not be as expensive as it appears and certainly gives the best final effect. It offers many advantages including ease of application and working while standing being its major advantage. This product is available from TheStoneYard.co.uk and prices are available on enquiry.

- 4.
5. An asphalt base grout from Colas also produces good results.

## Laying in sand

It is preferable to have the outside rows well cemented in to avoid movement; this might also be a kerbing.

1. Lay and level 2 - 3" of sharp sand, damp sand binds better but dry also works.
2. Vibrate down well.
3. Place each row along a builder's line and firmly knock in place with a rubber hammer. This should not be deeper than about 1m or about 10 rows.
4. Continue with remaining lines, keeping as flat and even as possible while continuously checking lines and adjusting accordingly.
5. Lay marine ply over stone and vibrate down. This reduces stone movement.
6. Sprinkle sand over and brush in to avoid movement.
7. Lay next 1m keep knocked in height the same as the previous 1m row so that when it is vibrated down with the ply levels are the same. Sprinkle sand again and continue on to next 1m.
8. When a few 1m rows are finished vibrate down again adding sand until



you are happy that the stone will not move. You may consider watering in if you find there is still some movement. Finer sand can then be brushed in. This may have a few larger gradings in to help it bind. The more you vibrate the less chance of movement. A joint stabilising liquid can be used to make the joints firmer (see <http://www.resiblock.com/wjc.html>). You can also use granite dust/sand. This binds very well, I can supply this but it is cheaper to get it from the UK, ash is also commonly used.

<http://www.pavingexpert.com> offers lots of valuable advice and well worth consulting.



## Granite finishes



'Fine Picked' - also known as 'Bush Hammered'. Fairly smooth, good non-slip surface.

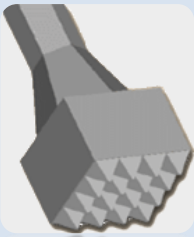


'Fair Picked' - moderately smooth. Less worked than fine picked.



'Rough Punched' - roughly hewn with high spots chiselled off.

### Fine Picked or Bush Hammered



In this process, the surface of the units is pummelled by a series of pyramidal chisels mounted as a hammer. The hammer repeatedly strikes the unit, picking away at the surface to create a roughened, natural looking surface, similar to that produced by shot-blasting.

When applied to stone paving, such as granite, the resulting texture is sometimes classed as 'Fair Picked' .



The texturing produced by the bush hammer can be repetitive (see the image of bush-hammered granite above). The ability to aim the bush hammer at a specific point can be used to create patterned textures, with parts of the paver treated while other parts are left in their original condition. This effect is best seen on those pavers where an untreated border

is left surrounding a textured panel. Fine picked is often a finer grade than bush hammered and the final effect varies from supplier to supplier and country to country.

**A minimum thickness is necessary to bush hammer stone. This depends on stone used and size of piece being made.**





### Rough Punched

This is a split stone but with the rough edges chiselled off and shape



kept to a good tolerance. When applied to stone paving, such as granite, the resulting texture is sometimes classed as Rough Punched.



Our setts are rough punched tolerances are generally kept to about 1.5cm. The grey stone keeps best to tolerance, the gold least due to its granular nature. When applied to steps and blocks the tolerance is

held to a higher level. Often Rough punched has the best effect on blocks. The odd partial drill hole may be visible on the larger worked blocks, these are the holes drilled during the quarrying process and are kept to an absolute minimum. The quality of the stonemason has a large effect on this finish when working on blocks, posts and pillars.

### Other finishes available.

Sawn . Sandblasted Shotblasted . Honed and Polished .  
Flamed stone is not produced due to the damaging effect it has on the stone .

### Materials available from TheStoneYard.co.uk



TheStoneYard .co.uk is the sole UK agent for Nital Quarries in Portugal. Nital provides access to a complete range of granite products. With 5 quarries to their name they can provide 8 different colours and with their onsite production facility they can produce setts, blocks, gateposts, pillars, kerbs, granite steps to any size, specialised items to your design, and aggregates and blocks for gabions. You can be sure you are buying a 100% ethical product without compromise to quality.





thestoneyard.co.uk

LAYING INSTRUCTIONS  
STONE TYPES  
PRICE LIST

LONG BARN, SIDBROOK ORCHARDS,  
WEST MONKTON, TAUNTON TA2 8NH, UNITED  
KINGDOM  
TEL: +44 (0) 8458 679237 (LOCAL RATE)  
FAX: +44 (0)700-6069608  
EMAIL: [INFO@THESTONEYARD.CO.UK](mailto:INFO@THESTONEYARD.CO.UK)  
VAT NO 885818269

**Price list**

Standard Price list from TheStoneYard .co.uk 1<sup>st</sup> of Jan 2013.  
Please contact us for prices of other items such as pillars, steps, and blocks.



**Setts (cropped)**

	Coverage m2/t	Colour	Price per m <sup>2</sup>	All Plus VAT
5 x 5 x 5cm	10.9	Grey	£24	
	10.9	Other colours	From £25.5	
10 x 10 x 5cm	9.0	Grey	£20	
	9.0	Other colours	From £22	
20 x 10 x 5cm	8.8	Grey	£23	
	8.8	Other colours	From £25.5	
20 x 10 x 10cm	4.4	Grey	£33	
	4.4	Other colours	From £35	
10 x 10 x 10cm	4.5	Grey	£28	
	4.5	Other colours	From £30.5	

**Larger blocks (cropped)**

	Weight (kg)	Colour	Cost per item	All Plus VAT
20 x 10 x 15cm	7.95	Grey	£2	
	7.95	Other colours	From £2.10	
30 x 10 x 15cm	11.93	Grey	£3.25	
	11.93	Other colours	From £3.50	

**Granite posts (worked)**

	Weight (kg)	Colour	Cost per item	All Plus VAT
2m x 30cm x 30cm	477	Grey	£ on request	£
	477	Other colours	£	£
2m x 40cm x 40cm	848	Grey	£	£
	848	Other colours	£	£

*Posts are Rough Punched. Fine Picked available at an extra cost of 25%.*

**Delivery costs to most areas of England plus VAT (Scotland/Ireland at extra cost)**

Number of bags	PalletForce	Truck	Forklift offload Plus VAT
1	£45 per bag	£45 per bag	£75 x1
2 - 3	£45 per bag	£42 per bag	£75 x1
4	£45 per bag	£38 per bag	£75 x1
5 - 9		£35 per bag	£75 x1
10 - 15		£30 per bag	£75 x1
16 - 19		£25 or less if directly delivered from Portugal	£75 x1
20+		Free to single address by container. Extra by flatbed.	At local cost



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**New items**

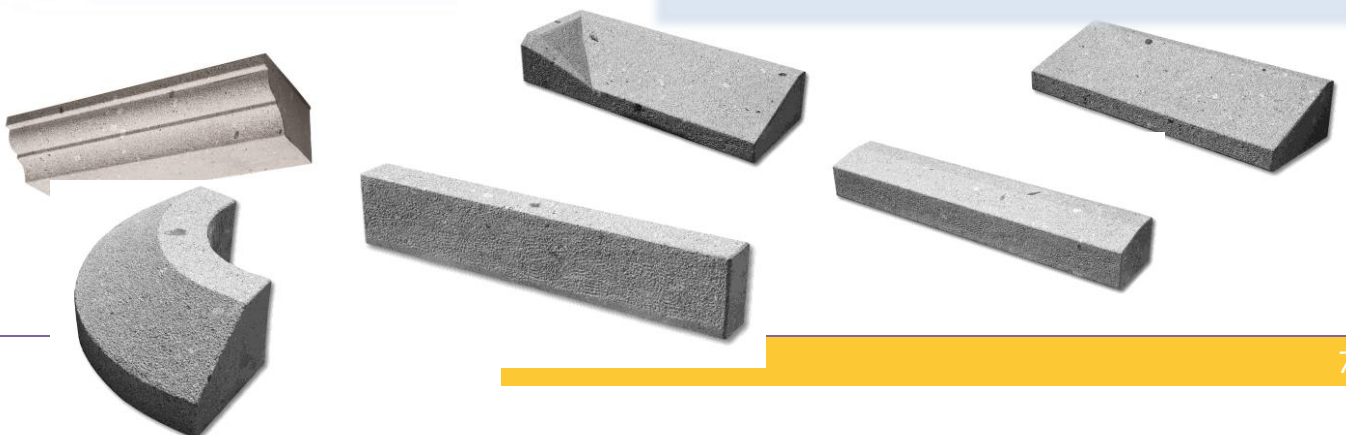
We have just started with new machinery and can now offer dimensioned stone with natural sett shape . This is sawn on the bottom and rough shot blasted or hammered on the top Sides look the same as normal setts

Price per m2 will be grey £38  
Gold £40

Plus VAT



Below is a new stone colour we are also producing. Speckled Gold .This is only available in dimensioned stone and large blocks due to its granular nature. A speckled white is also available .This is only to be used inside due to yellowing oxidation caused by weather.





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### Granite

Granite, with its beautiful range of colours and patterns, is becoming much more familiar both for exterior work and for polished interiors. A huge range of different types is now available, with colours ranging from black and dark olive green, through speckled pinks and reds with a silver sparkle, to almost white. To a geologist, not all of these types of rock are strictly granites, but they do all have a similar geological origin, which is quite different from the sandstones and limestones which started out as soft sediments on some ancient sea or river bed.

Tens to hundreds of kilometres below the surface of the Earth, the rocks are very hot and under huge pressure from the weight of the overlying crust. Under these conditions they slowly circulate by convection like molten toffee cooking in a pan. Cracks in the rigid, cooler surface of the Earth's crust are opened up by the force of the heaving mass beneath. In this way, the continents are slowly moved around on the surface (at a rate of a few centimetres a year) and the gaps between the plates of the moving crust are filled with upwelling material from deep in the Earth. On the opposite edges of the plates, sands and clays that have been eroded off the land and carried into the sea by rivers get pushed back deep into the Earth under the continents and via the deep trenches along the edges of the oceans.

The deep material (called the mantle) is made up of minerals that only form in the conditions of extreme high temperature and pressure found at great depths in the Earth. As convection causes it to move towards the surface, the pressure is released and this causes a partial melting, even though the temperature does not get any higher. As the so-called magma moves even closer toward the surface and starts to cool, crystals of different minerals form. In different parts of the deep Earth, the chemical composition of this molten magma is rather different. Where sediment gets recycled back into the earth it forms magma that is less dense than the surrounding rocks, so it starts to push its way slowly back up to the surface.

Magma cools as it slowly gets closer to the surface, forming a solid interlocking 3-D mass of crystals, usually of not more than three or four main mineral types. So rocks of this type are called crystalline.

There are two main things that control what the resulting rock-type looks like. First, the chemical composition of the magma. Crystalline rocks that form under the oceans contain lots of iron and magnesium and many of the minerals that as pyroxene) are coloured. These black granites (strictly they should be called gabbros) are particularly familiar in graveyards.

In contrast, the rocks that ascend from the bowels of the Earth underneath continents contain much ore silica and are characterised by light coloured minerals such as quartz, potassium-containing feldspars and the sparkling micas. The feldspars are particularly variable in colour and the reds, salmons, and whites of the granites that are familiar as kerbstones, work-tops, and cladding get their colours from crystals of feldspar that differ only in the trace amounts of iron and some other minor elements. These are the true granites, geologically speaking. The mica they contain may be silver or dark brown in colour. Both types have a characteristic flaky structure and their sparkle comes from the light reflected off the surface of each flake.

These two types of crystalline rock are the extremes. There are many that are of intermediate composition because different types

of magma got mixed or sorted at depth. Some rocks get squeezed and folded during their journey upwards and concentrations of different minerals can get smeared out and stirred into one another to give streaked and swirling patterns, like chocolate sauce stirred into ice cream.

The other thing that affects the appearance of crystalline rocks is how fast they approached the surface and how quickly they cooled down. If cooling was rapid (the extreme case of this is magma that spews onto the surface of the earth as volcanic lava) the crystals did not have much time to grow before the rock became solid. In this case it is only possible to see crystalline structure in a slice of the rock seen through a microscope.

The most decorative granites are the ones where the magma cooled slowly and large crystals had time to grow. The true granites of Cornwall and Shap are of this type.



The first crystals of feldspar started to grow when the temperature of the magma was still about 800°C. As some of the chemical elements in the melted mass got locked up in the feldspars, the composition of the surrounding liquid gradually altered, and with further cooling other minerals, such as glassy quartz and mica, grew in the remaining space. If you look carefully at a polished granite counter-top, the three intergrown types of mineral crystals can easily be spotted.

Sometimes, rising magma tore off flakes of the overlying rocks as it pushed up through them, mixing and melting the fragments to form small local patches of other minerals. These fragments are discoloured nuisances to the producer, but fascinating to geologists. Occasionally they produce granites with a completely new texture, such as the famous Australian orbicular granite with golf-ball like dark masses set in a light matrix.

These coarse-crystalled rocks were still deep in the earth, sometimes several kilometres down, when they finally became completely solid. They only became exposed at the surface by the gradual erosion of overlying rock layers over millions of years.

Some of the minerals that they contain are unstable at the low temperatures and pressures of the surface, or where they meet air and moisture. Some feldspars and dark minerals like pyroxene slowly rot into clay, staining brown as iron is released. This can be a source of discoloration on granite used for exterior work.