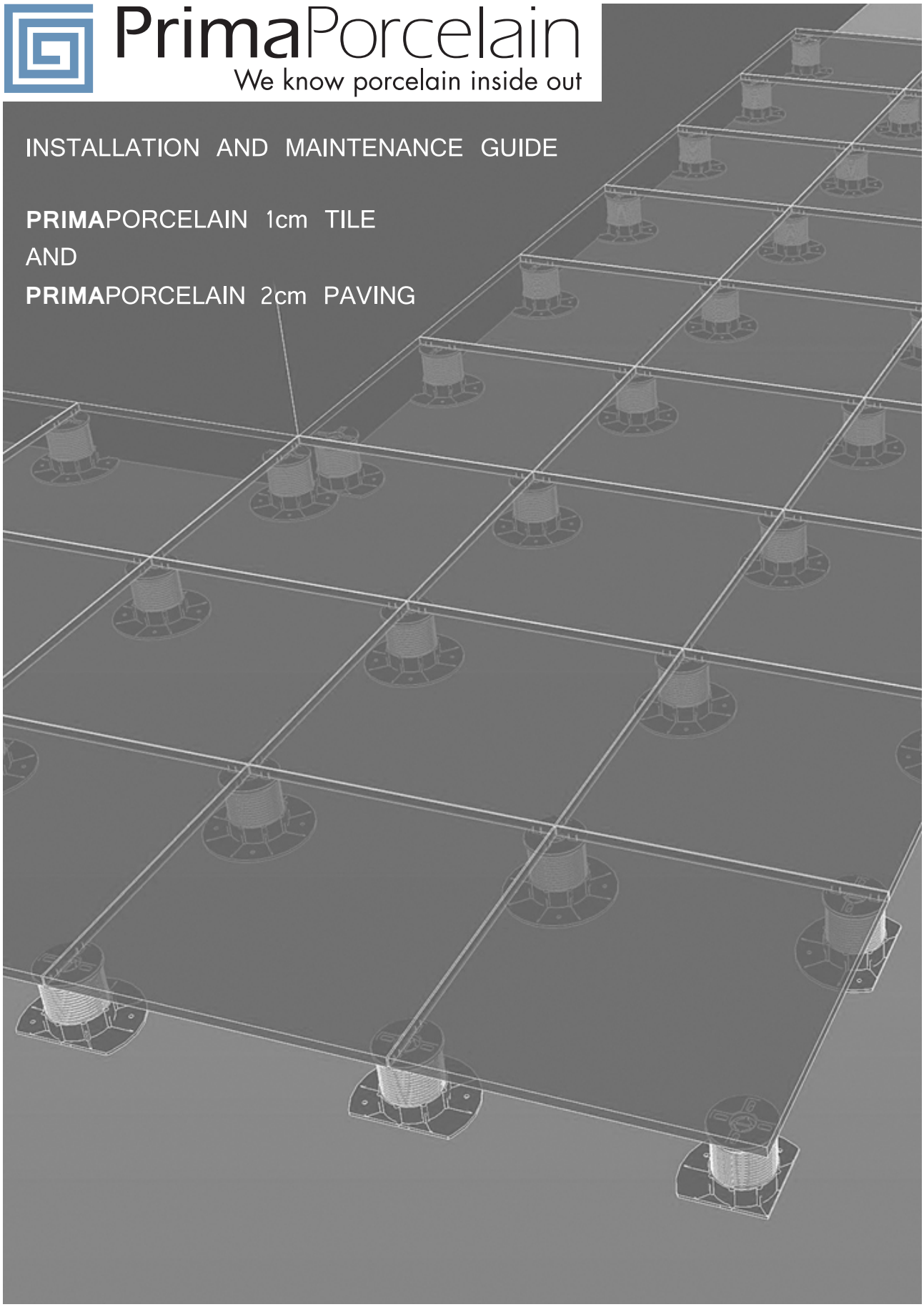
PrimaPorcelain

We know porcelain inside out

INSTALLATION AND MAINTENANCE GUIDE

PRIMAPORCELAIN 1cm TILE
AND
PRIMAPORCELAIN 2cm PAVING

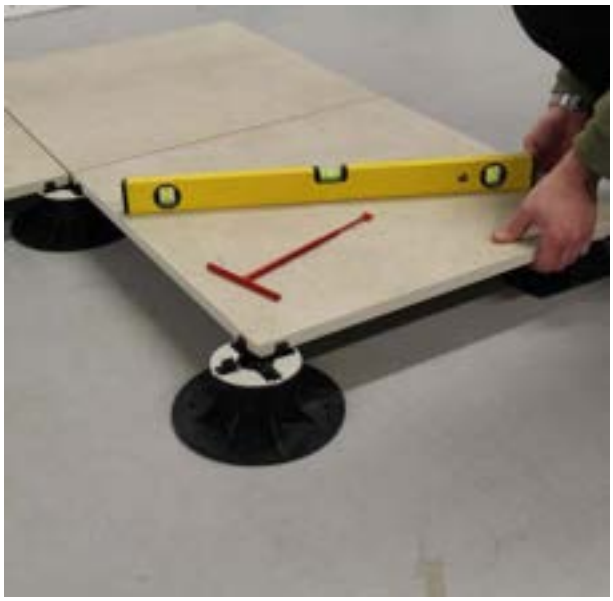


INSTALLING 1cm TILES AND 2cm PAVING

Dear Valued Customer . . .

Here at Greensquares we would like to thank you for your interest in our paving products.

Our aim is to provide excellent customer service with unrivalled product quality.



At Greensquares we focus on quality, innovation and brand in all that we do. With an assortment of porcelain tiles and paving, with numerous accessories, constructing a beautiful terrace has never been simpler.

We are committed to providing homeowners, builders and professional tile installers with exciting new products as well as providing supporting material for the professional to help differentiate themselves in the marketplace.

PrimaPorcelain's 1cm and 2cm tiles and paving are available nationally in the UK and are backed by a 10 year limited residential warranty.

We at Greensquares have compiled this Installation and Maintenance Guide to provide a thorough resource for technical information and installation instructions for our 10mm and 20mm porcelain range.

PrimaPorcelain 1cm Tiles and 2cm Paving cover the internal and external floor tiling market

With a variety of porcelain paving offerings from the 10mm tile for use with a flexible adhesive to the 20mm paving for use on paving supports, paving pedestals or flexible adhesive we can cover all of your internal and external flooring applications. With porcelain tiles and paving slabs that offer laying choices, revolutionary colours and finishes matched between the two thicknesses we can give your flooring for indoors and outdoors – the truly professional finish that you deserve.

These installation methods are recommended by Greensquares, but they may not cover every installation scenario you may encounter. Since each installation is unique in its performance requirements, the ultimate installation method used is the sole responsibility of the installer.

We would recommend that all designs be reviewed by a registered architect, structural engineer or local building control officer before installation, especially in the case of a roof terrace, balcony or elevated and/or stepped installation. Make sure your plans meet building regulations before you begin your installation.

Do you need help with your installation?

Greensquares strives to provide the very best service to our customers. We have an excellent customer service team that is here to help you with your installation questions.

If you need help you can call customer services at 029 2080 3756 or visit www.primaporcelain.co.uk

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INSTALLING 1cm TILES AND 2cm PAVING

01 - Tools required:

PrimaPorcelain's 1cm Tiles and 2cm Paving can be installed with a minimum number of readily available tools. However, many other tools are available that can provide even greater efficiency and ease of installation. All tools should be used per applicable manufacturers' instructions. Some of the basic tool requirements:

Required Tools

- Carpenters Saw
- Straight Edge
- String Line
- Tape Measure
- Porcelain saw with appropriate blade
- Angle Grinder
- Spirit Level
- Safety Glasses
- Safety Glasses/goggles/visor
- Safety Gloves
- Protective Dust Mask
- Ear Protectors
- NMKEY Adjustment Key

Optional Tools

- Angle Finder or
- Carpenters square
- Chalk Line

02 - **STOP!** Read Before You Start:

Cutting Porcelain:

Porcelain is a very dense, hard material. It is therefore advisable to use the correct equipment and blades to cut the material to achieve the cleanest cut and avoid breakages.

If you are cutting a reasonably large quantity of porcelain (straight cuts) we recommend you use a Rubi TC-180 circular saw that is designed for cutting porcelain. The machine can be used with either a dry blade (model no. Rubi TCR31975 180mm) or wet blade (model no. Rubi CPC230955 180mm).

Safety Wear:

When working with porcelain be sure to wear proper clothing and safety equipment. Safety glasses should be used during the entire installation process.

Colour Shades:

Batch production using organic materials results in some shade variation. Therefore, please note that sample swatch may vary slightly from current stock.

It is advisable that you order an additional 10% on your order to allow for waste caused by cutting etc.

Cantilever

When laying PrimaPorcelain 2cm paving on pedestals and paving supports ALWAYS cut the supports and pedestals and supports below ALL edge and corner paving slabs to ensure the supports/pedestals are as close to the edges as possible. This will minimise any cantilever and thus eliminate the risk of injury caused by paving slabs tilting or tipping when stepped on. Both the pedestals and supports can be easily cut using a carpenter's saw; installation details are included in section 09b of this guide.

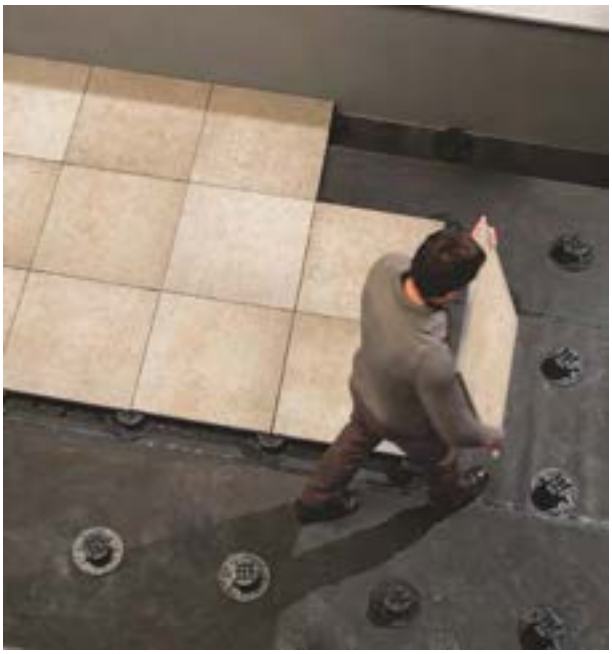
We cannot accept any responsibility for damage or injury caused as a result of incorrectly installed tiles or paving.

03 - Suitable Sub-Bases for laying

03a – External

Both the 1cm tile and 2cm paving can be laid on a variety of bases externally to suit your every need. Below are detailed some of the more common applications:

Laid on Pedestals.



2cm paving can be laid on paving supports or pedestals on the following bases:-

- Compacted stone dust over a minimum of 75mm well consolidated hardcore.
- Concrete slab of 50mm minimum thickness over a minimum of 75mm well consolidated hardcore.
- A built up/single ply membrane/GRP flat roof, roof terrace or balcony.
- A balcony with any continuous surface such as steel checker plate or treated timber deck.
- They can also be laid on pedestals directly over existing slabs or decking.

If laying 2cm paving on a balcony, flat roof or any decked timber structure we would recommend that you employ the services of a structural engineer to assess the loadbearing capacity of the supporting structure.

When laying tiles on pedestals over compacted hardcore and stone dust we would recommend laying a weed control membrane over the area.

Under NO circumstances should the 1cm porcelain tile be laid on paving supports or pedestals.

When laying tiles on pedestals it is not recommended that you grout between the tiles.

Bedded on Adhesive.

Both the 1cm and 2cm porcelain can be laid on adhesive on the following bases:-

- Concrete slab of 50mm minimum thickness over a minimum of 75mm well consolidated hardcore.

PrimaPorcelain's porcelain stoneware tiles and paving slabs are characterized by low water absorption level (less than 0.5%). Therefore, it is necessary to use specific high-quality adhesives – these are more suitable than traditional installation on cement. For the most suitable adhesives for porcelain stoneware installation refer to section 08 Adhesives.

Because of the low water absorption level of porcelain, porcelain tiles will not adhere to cement or concrete.

03b – Internal

Both PrimaPorcelain's 1cm tiles and 2cm paving can be laid on a variety of bases internally to suit your every need. Below are detailed some of the more common applications:

Bedded on Adhesive.

It is not common to use 2cm paving when bedding on adhesive, however, it can be laid on adhesive in exactly the same way as the 1cm tile should you wish.

PrimaPorcelain's 1cm tiles and 2cm paving can be laid on adhesive on the following bases:-

- An existing concrete floor slab/screeded floor slab.
- An existing joisted and boarded floor, we would only recommend installing 1cm tiles on raised boarded floors, 2cm paving is not recommended for this application due to its greater weight.

If laying 1cm tiles on a joisted and boarded floor we would recommend that you employ the services of a structural engineer to assess the suitability and loadbearing capacity of the supporting structure and finish.

PrimaPorcelain's porcelain stoneware tiles and paving slabs are characterized by low water absorption level (less than 0.5%). Therefore, it is necessary to use specific high-quality adhesives – these are more suitable than traditional installation on cement. For the most suitable adhesives for porcelain stoneware installation refer to section 08 Adhesives.

Because of the low water absorption level of porcelain, porcelain tiles will not adhere to cement or concrete.

When bedding tiles on an internal concrete slab the concrete must be allowed to cure for a minimum of six weeks prior to laying the tiles.

Laid on Pedestals.

In some circumstances it is acceptable to lay 2cm paving internally on pedestals over a concrete slab this has the benefit of allowing an accessible service zone below the tiles for cables and/or pipework.

When laying tiles on pedestals it is not recommended that you grout between the tiles, this method would not therefore be recommended for 'clean' areas or where hygiene is paramount.

INSTALLING 1cm TILES AND 2cm PAVING

04 - Tile Thickness and Finish

Thickness

We offer PrimaPorcelain porcelain products in two thicknesses as follows:

1cm tile	is available in 10mm thickness
2cm paving	is available in 20mm thickness

The 1cm porcelain tiles can be used both indoors and out and additionally the 1cm tile and 2cm paving are available in the same finishes, thus allowing you the opportunity of extending your indoor living space into your garden.

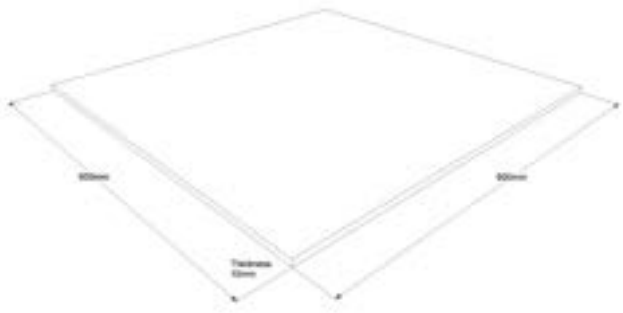
Colour Choice

We offer a large range of colour and finish options for both the 1cm tile and the 2cm paving.

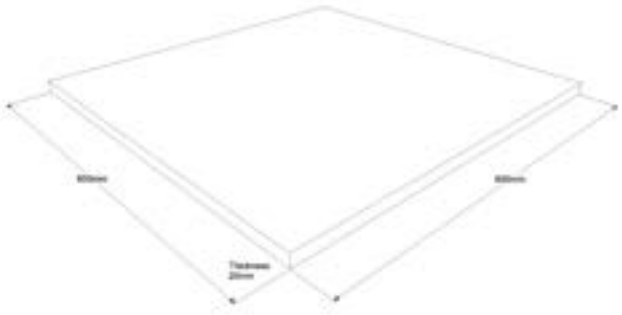
Please note that the smoother finishes have an additional anti-slip finish on the 2cm paving, whereas the 1cm tile does not. This gives rise to a slightly different appearance to the 1cm tile of the same name. Please call 029 2080 3756 for further information or assistance.

Colour Variation

The marked chromatic variation (colour shade variations) and the veining of the product is an intrinsic feature and re-creation of the character of natural stone (randomness and richness of the colour shading in natural stone) - the inspiration behind this collection. For these reasons, we recommend installing the product choosing tiles/paving from different boxes/sections of the pallet in order to enhance the natural random effect. Due to these intrinsic features of the product, the colours represented on the website must only be considered an example of the variety of colour shades available.



PRIMAPORCELAIN's 1.0cm TILE



PRIMAPORCELAIN'S 2.0cm PAVING

05 – Accessories

05a – PS20 Paving support (12mm)

The PS20 paving supports are a simple way of paving on a variety of surfaces, and are available in 12mm thickness.

A maximum of two PS20 paving supports can be stacked to overcome larger level differences.

05b – PS20LEV Levelling disc (3mm)

The universal PS20LEV levelling disc is available to adjust differences in level between the paving support and the supporting structure; this is available in 3mm thickness.

05c – LGH3 Rubber levelling shim (3mm)

The LGH3 rubber levelling shim is used on top of the PS20 paving support to take up differences in level/falls in the supporting structure. No more than three levelling shims should be used per paving support; this is available in 3mm thickness.

Do not insert levelling shims or levelling discs between stacked paving supports. We would recommend using only two levelling shims on top of the paving supports when two paving supports are stacked, this is to aid stability.

A total build-up of 33mm can be achieved when using paving supports and levelling shims.

05d – NM1 Adjustable paving pedestal (25-40mm)

The NM1 pedestal has a height that is adjustable between 25mm and 40mm using the NMKEY.

The base of the pedestal distributes the load over an area of 305cm² and provides over 1400kgs of loadbearing capacity.

Do not stack NM1 pedestals on top of each other nor stack them with the PS20 paving supports.

05e – NM2 Adjustable paving pedestal (40-70mm)

The NM1 pedestal has a height that is adjustable between 40mm and 70mm using the NMKEY.

The base of the pedestal distributes the load over an area of 305cm² and provides over 1400kgs of loadbearing

capacity.

Do not stack NM2 pedestals on top of each other nor stack them with the PS20 paving supports.

05f – NM3 Adjustable paving pedestal (60-100mm)

The NM1 pedestal has a height that is adjustable between 60mm and 100mm using the NMKEY.

The base of the pedestal distributes the load over an area of 305cm² and provides over 1400kgs of loadbearing capacity.

Do not stack NM1 pedestals on top of each other nor stack them with the PS20 paving supports.

05g – NM4 Adjustable paving pedestal (90-160mm)

The NM1 pedestal has a height that is adjustable between 90mm and 160mm using the NMKEY.

The base of the pedestal distributes the load over an area of 305cm² and provides over 1400kgs of loadbearing capacity.

Do not stack NM1 pedestals on top of each other nor stack them with the PS20 paving supports.

05h – NM5 Adjustable paving pedestal (150-270mm)

The NM1 pedestal has a height that is adjustable between 150mm and 270mm using the NMKEY.

The base of the pedestal distributes the load over an area of 305cm² and provides over 1400kgs of loadbearing capacity.

Do not stack NM1 pedestals on top of each other nor stack them with the PS20 paving supports.

05i – PS20LEV Levelling disc (3mm)

The universal PS20LEV levelling disc is available to adjust differences in level between the paving pedestal and the supporting structure; this is available in 3mm thickness.

05j – NMKEY

The NMKEY is an adjustment key which can be inserted between the tiles into the NM1-5 paving pedestals to allow for height adjustment and ensure a level finish to the paving during and after the laying of the tiles.

06 – Tile Properties and Technical Features

Technical Features:

Our robust porcelain products are put through a series of rigorous tests to make sure they're everything we say they are. We offer sturdy, slip-resistant tiles that are extremely difficult to damage, and we're determined to make good on that promise. With this in mind, here are the technical features of our porcelain paving:

Dimensions: 1cm tile

Calculated as the average of the four dimensions measured 5mm from the corners of the tile.

Dimension tolerances:

Thickness

The requirements state that the thickness of the tile may vary by 5% maximum. This means that the maximum variation in the thickness of the tiles will be from 9.5mm to 10.5mm.

Length and width

The requirements state that the length and width of the tile may vary by 0.6% maximum. This means that the maximum variation in the length and width of the tiles will be from 596.4mm to 603.6mm.

The PrimaPorcelain 1cm tile also passes all other dimensional tests for straightness of edges, wedging and warpage, the results of which fall within the tolerances above.

Dimensions: 2cm Paving slab

Calculated as the average of the four dimensions measured 5mm from the corners of the tile.

Dimension tolerances:

Thickness

The requirements state that the thickness of the tile may vary by 5% maximum. This means that the maximum variation in the thickness of the tiles will be from 19mm to 21mm.

Length and width

The requirements state that the length and width of the tile may vary by 0.6% maximum. This means that the maximum variation in the length and width of the tiles will be from 596.4mm to 603.6mm.

The PrimaPorcelain 2cm paving slabs also passes all other dimensional tests for straightness of edges, wedging and warpage, the results of which fall within the tolerances above.

Water Absorption Test (UNI EN ISO 10545/3) 1cm tile & 2cm paving

The test requirement for water absorption is expressed as less than or equal to 0.5% our tiles and paving achieves a figure of 0.05%.

There is negligible water absorption with our porcelain which means that the dimensional stability, resistance to frost, resistance to temperature fluctuations and structural integrity of the material are not compromised by changes in moisture content.

Bending Strength Test (UNI EN ISO 10545/4) 1cm tile & 2cm paving

Resistance to breaking under a constant load.

The test requirement for breaking strength states that a tile must withstand a force of at least 1300 Newtons (which is equivalent to 132.6Kg force). This is measured for the length of the tile on the centreline of the tile. Our tiles and paving achieves a breaking strength of 13671 Newtons (which is equivalent to 1394Kg force). Our tiles and paving's resistance to breaking under a constant pressure exceeds the ISO test requirements at least tenfold.

Impact Resistance Test (UNI EN ISO 10545/5) 1cm tile & 2cm paving

This test is carried out on tiles fixed to a solid base with a resin adhesive, with a 19mm diameter chromed steel ball dropping from a height of 1m. Our tiles and paving achieves a rating of 0.73 in this test.

Static Loading Test (EN 12825) 1cm tile & 2cm paving

This test is carried out on the material sitting on pedestals and is only applicable for raised paving. A 25mm steel cube is pressed onto the tile with an increasing force and the pressure at which the tile breaks is recorded. The test is repeated in three locations and the results for our tiles and paving are as follows:

Centre
6.4kN (which is equivalent to 652.6Kg force)

Centre point of edge
7.43kN (which is equivalent to 757.6Kg force)

Diagonal
4.14kN (which is equivalent to 422.2Kg force)

Deep Abrasion Resistance Test (UNI EN ISO 10545/6) 1cm tile & 2cm paving

The ISO test data requires a value of less than or equal to 175mm³. Achieves a far better value of 139mm³.

Temperature 1cm tile & 2cm paving

Our tiles and paving experiences negligible thermal expansion and hence is very dimensionally stable. Frost resistance is very closely related to water absorption and as such our tiles and paving is completely frost proof. In the thermal shock resistance testing our tiles and paving shows no visible sign of defects resulting from sudden extreme changes in temperature. Our tiles and paving is suitable for all external climate conditions.

Deep Abrasion Resistance Test (UNI EN ISO 10545/6)

Testing is carried out using a variety of chemicals including chemicals for household use and swimming pool additives. Our tiles and paving complies with the requirements of the testing as being resistant to chemical attack.

Stain Resistance 1cm tile & 2cm paving

Because our material is non-porous all spillages remain on the surface and do not soak into the product. All spillages can simply be mopped up leaving no visible staining.

Slip Resistance

PrimaPorcelain provides a wide range of finishes, from polished or smooth (best for interiors) to fine textured (for either indoors or out) to textured or grip (primarily for outside use) to comfortably accommodate any application you require.

Fire 1cm tile & 2cm paving

Our material Achieves Class A1 Fire Rating, and is completely resistant to fire and the surface spread of flame.

INSTALLING 1cm TILES AND 2cm PAVING

07 – Calculating Materials

07a) Tiles/Paving

1cm Tiles

Calculating the number of packs of tiles that you require, you will need to start by calculating the area of the surfaces to be tiled by multiplying the length by the width for rectangular areas, for more complex shapes this formula will not work. Once you have calculated the area of the surfaces to be tiled, divide it by 1.08 to ascertain how many packs of tiles you require (3N° tiles per pack).

Should you want assistance in calculating the number of tiles that you require, please don't hesitate to give us a call on 029 2080 3756.

When calculating the number of tiles you will need, it is recommended that you add 10% to the total for wastage.

2cm Paving

Calculating the number of packs of slabs that you require, you will need to start by calculating the area of the surfaces to be tiled by multiplying the length by the width for rectangular areas, for more complex shapes this formula will not work. Once you have calculated the area of the surfaces to be tiled, divide it by 0.72 to ascertain how many packs of tiles you require (2N° tiles per pack).

Should you want assistance in calculating the number of tiles that you require, please don't hesitate to give us a call on 029 2080 3756. We can then also advise you on the number of paving supports or pedestals that you require.

When calculating the number of paving slabs you will need, it is recommended that you add 10% to the total for wastage.

Temperature & Expansion and Contraction

PrimaPorcelain 1cm tiles and 2cm paving slabs experience negligible thermal expansion and hence are very dimensionally stable.

Frost resistance is very closely related to water absorption and as such PrimaPorcelain 1cm tiles and 2cm paving slabs are completely frost proof.

In the thermal shock resistance testing PrimaPorcelain 1cm tiles and 2cm paving slabs show no visible sign of defects resulting from sudden extreme changes in temperature.

PrimaPorcelain 1cm tiles and 2cm paving slabs are suitable for all external climate conditions.

Gapping requirements for 1cm Tiles and 2cm Paving

When laying PrimaPorcelain 1cm tiles and 2cm paving slabs on adhesive it is recommended that you leave a 3mm gap between tiles and between tiles and adjacent walls/structures for grouting.

Paving supports and Pedestals have spacers which will allow for a 3mm gap between tiles, a 3mm gap is also recommended between tiles and adjacent walls/structures.

When laying tiles on pedestals it is not recommended that you grout between the tiles.

07 – Calculating Materials

07b) Accessories

PAVING SUPPORTS

The PS20 paving supports are a simple way of paving on a variety of surfaces, including waterproofing membranes, concrete slabs and compacted hardcore. They allow the transformation of roof terraces, balconies, patios and gardens.

A maximum of two PS20 paving supports can be stacked to overcome larger level differences.

The universal PS20LEV levelling disc is available to adjust differences in level between the paving support and the paving tile.

The 3mm thick LGH3 rubber shim is used on top of the PS20 paving support to take up differences in level/falls in the supporting structure. No more than three levelling shims or levelling discs should be used per paving support. Do not insert levelling shims or levelling discs between stacked paving supports.

The number of PS20 paving supports required can vary considerably depending on the size, shape, number of cut tiles, fall and laying pattern of the tiles. As a general guide we suggest calculating the number of supports as follows:

You will need to start by calculating the area of the surface to be tiled by multiplying the length by the width (for rectangular areas, for more complex shapes this formula will not work). Once you have calculated the area of the surfaces to be tiled, multiply it by 3.5 to ascertain approximately how many paving supports you require. To accurately calculate the number of paving supports we would recommend that you draw out the area of tiles accurately and count the supports accordingly.

When calculating the number of paving supports you will need, it is recommended that you add 5-10% to the total.

Under NO circumstances should the 1cm porcelain tile be laid on paving supports.

PAVING PEDESTALS

There are five different pedestals available for different heights as listed in section 5d-5h of this guide. To aid in the levelling of the NM pedestals we would recommend purchasing the NMKEY which can be inserted between the tiles to adjust the height of the pedestals and obtain a level finish.

The NM 1-5 pedestals are a simple way of paving on a variety of surfaces. They allow the transformation of roof terraces, balconies, patios and gardens. Pedestals allow for a greater build up than the paving supports.

Under no circumstances should the NM 1-5 pedestals be stacked on each other or stacked with the PS20 paving supports.

The universal PS20LEV levelling disc is available to adjust differences in level between the paving support and the paving tile.

The number of PS20 paving supports required can vary considerably depending on the size, shape, number of cut tiles, fall and laying pattern of the tiles. As a general guide we suggest calculating the number of supports as follows:

You will need to start by calculating the area of the surface to be tiled by multiplying the length by the width (for rectangular areas, for more complex shapes this formula will not work). Once you have calculated the area of the surfaces to be tiled, multiply it by 3.5 to ascertain approximately how many paving supports you require. To accurately calculate the number of paving supports we would recommend that you draw out the area of tiles accurately and count the supports accordingly.

When calculating the number of paving supports you will need, it is recommended that you add 5-10% to the total.

Under NO circumstances should the 1cm porcelain tile be laid on pedestals.

08 – Adhesives

PRIMAPORCELAIN's porcelain stoneware tiles and paving slabs are characterized by low water absorption level (less than 0.5%). Therefore, it is necessary to use specific high-quality adhesives – these are more suitable than traditional installation on cement. The most suitable adhesives for porcelain stoneware installation can be identified as follows:

ADHESIVES CLASS C2TE ACCORDING TO EN 12004
ADHESIVES CLASS C2F ACCORDING TO EN 12004 for quick-setting installations (for example, in case of low temperatures)
ADHESIVES CLASS S1 ACCORDING TO EN12004 for heating screed installation for big sizes (45×45,30×60, 60×60)
ADHESIVES CLASS SI ACCORDING TO EN 12004 for installations on existing floors

Because of the low water absorption level of porcelain, porcelain tiles will not adhere to cement or concrete.

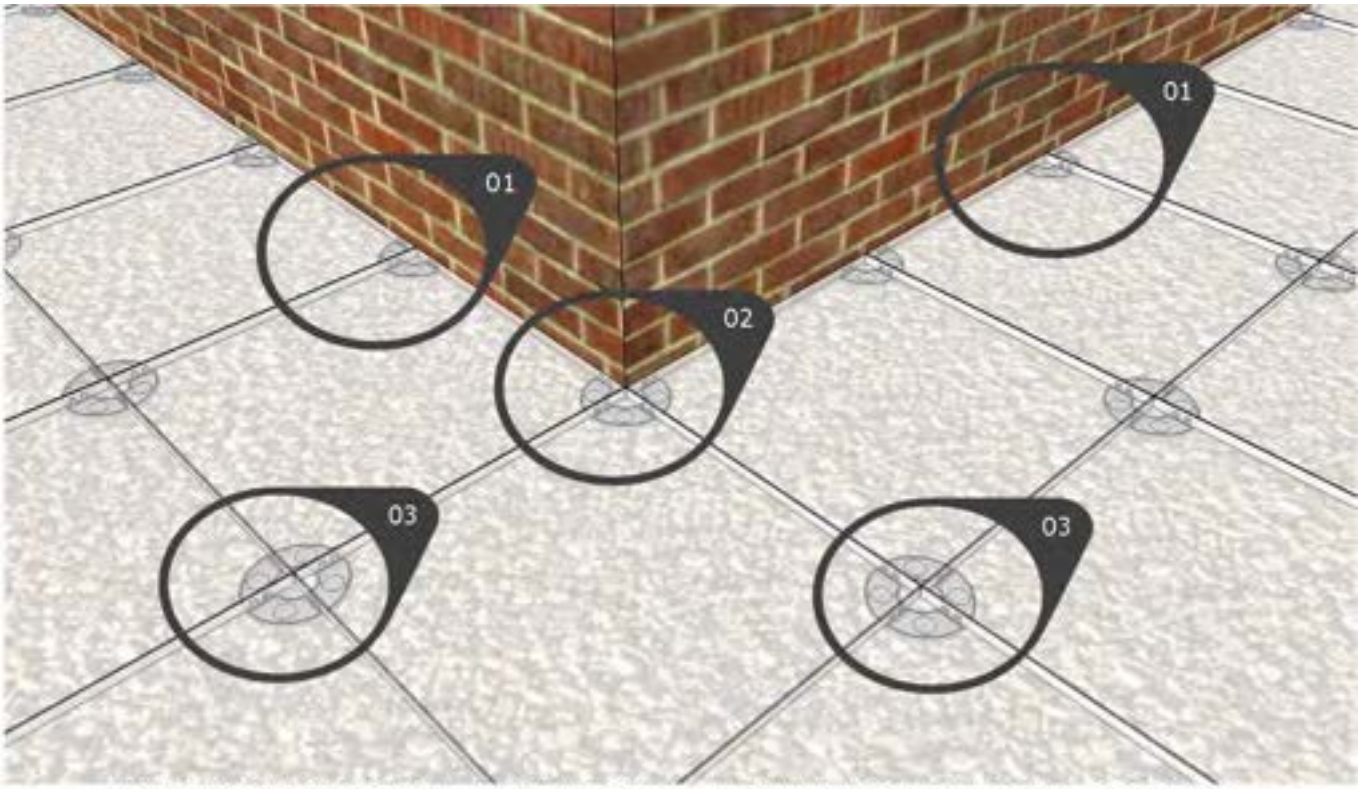
For advice on appropriate adhesives for bonding porcelain please contact your choice of adhesive manufacturer or one of the following adhesive manufacturers:

Bal uk	www.bal-adhesives.co.uk
Kerakoll	www.kerakoll.com
Mapei	www.mapei.com/GB-EN/

09 – Installation Methods 2cm PAVING

Fig 09/01 - Laid on PS20 paving supports to building external corner.
Fig 09/02 - Laid on PS20 paving supports to building internal corner.
Fig 09/03 - Laid on PS20 paving supports to outside edge.
Fig 09/04 - Laid on PS20 paving supports, indicative edge details.
Fig 09/05 - Laid on NM 1-5 pedestals to building external corner.
Fig 09/06 - Laid on NM 1-5 pedestals to building internal corner.
Fig 09/07 - Laid on NM 1-5 pedestals to outside edge.
Fig 09/08 - Laid on NM 1-5 pedestals, indicative edge details.
Fig 09/09 - Laid on PS20 paving supports, setting out and installation.
Fig 09/10 - Laid on NM 1-5 pedestals, setting out and installation.

Fig 09/01 - Laid on PS20 paving supports to building external corner.



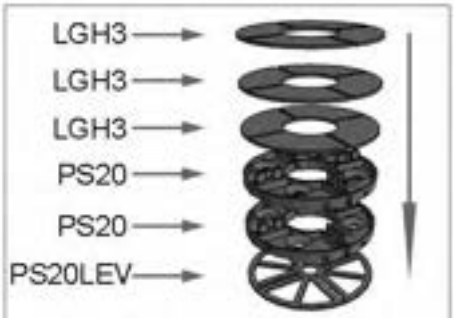
PAVING LAYING PATTERN AROUND A BUILDING EXTERNAL CORNER.

Condition 01
(Edge - against wall)

Condition 02
(Corner - against wall)

Condition 03
(4 Tile junction)

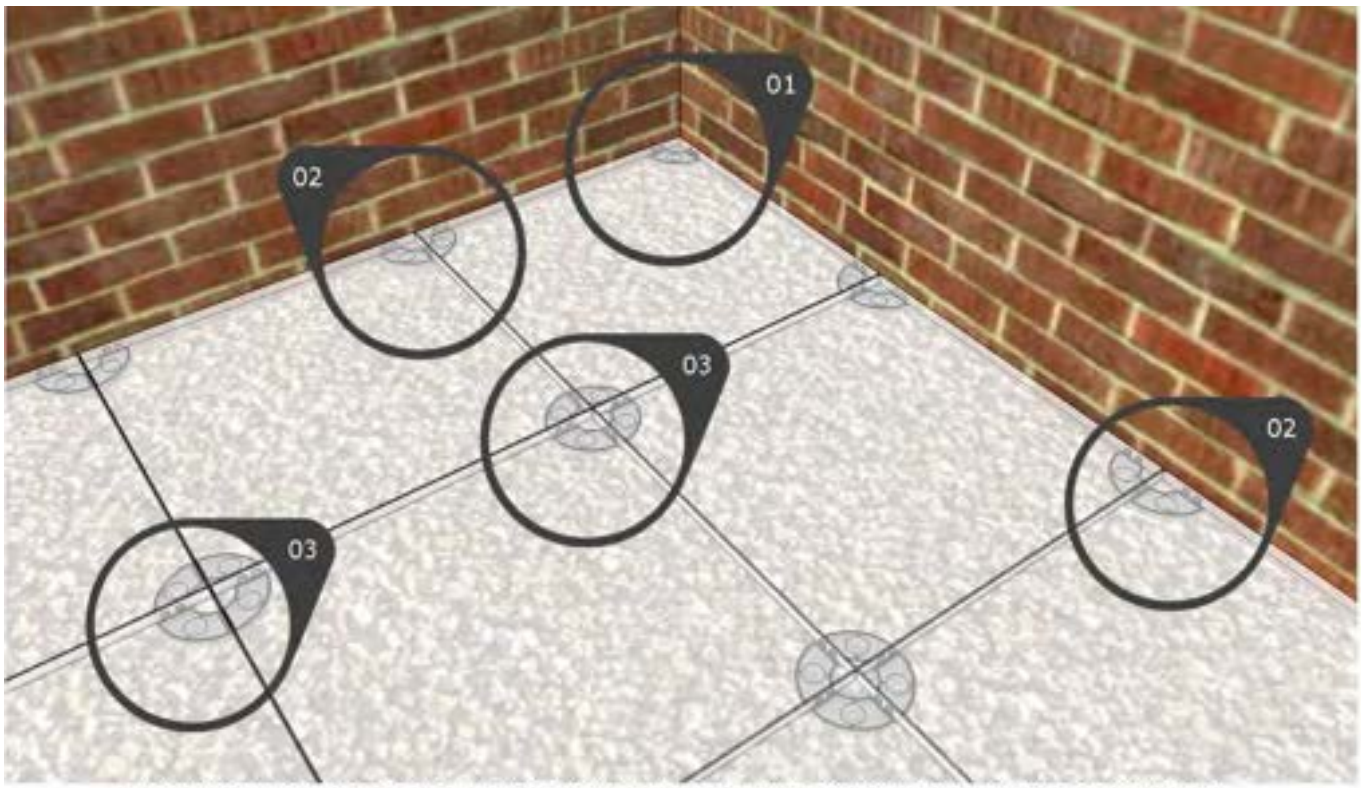
PAVING SUPPORT ILLUSTRATIVE CUTTING GUIDE.



PS20, PS20LEV & LGH3 STACKING.
A maximum of two PS20 paving supports and three LGH3 3mm shims with one PS20LEV levelling disc can be stacked (Total 36mm build up). For greater height build up the NM1-5 paving pedestals should be used.

NOTES:
- PrimaPorcelain 2cm paving laid in chequerboard pattern to building external corner.
- Paving indicated transluscent for clarity.
- LGH3 3mm shim can be inserted on paving supports (maximum 3 per support).
- A PS20LEV 3mm levelling disc can be inserted below the paving support to adjust level differences between the supporting structure and the paving support.
- A maximum of two PS20 paving supports can be stacked to overcome larger level differences.
- Condition 01: PS20 Paving support cut in half with six tabs remaining.
- Condition 02: PS20 Paving support cut in 3/4 with all eight tabs retained.
- Condition 03: PS20 Paving support, no tabs removed. No cutting to paving support.
- In addition to the paving supports indicated, an additional PS20 paving support can be installed at the centre of each Paving slab for extra support.

Fig 09/02 - Laid on PS20 paving supports to building internal corner.



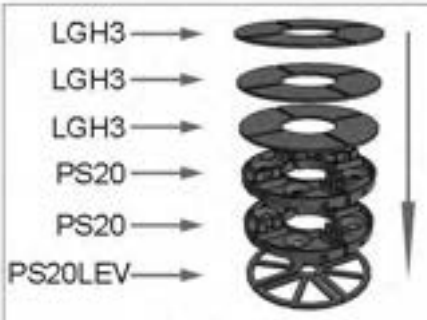
PAVING LAYING PATTERN AROUND A BUILDING INTERNAL CORNER.

Condition 01
(Corner - against wall)

Condition 02
(Edge - against wall)

Condition 03
(4 Tile junction)

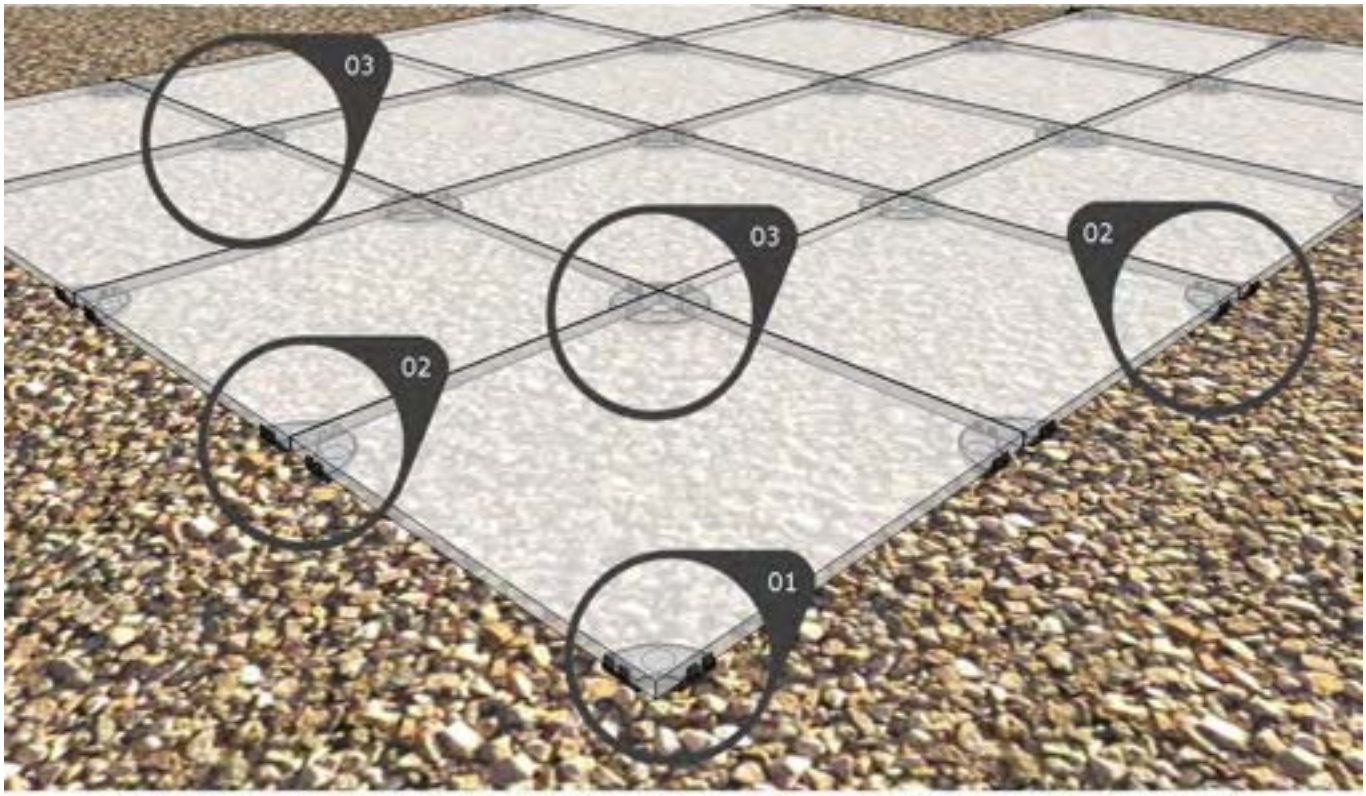
PAVING SUPPORT ILLUSTRATIVE CUTTING GUIDE.



PS20, PS20LEV & LGH3 STACKING.
A maximum of two PS20 paving supports and three LGH3 3mm shims with one PS20LEV levelling disc can be stacked (Total 36mm build up). For greater height build up the NM1-5 paving pedestals should be used.

NOTES:
- PrimaPorcelain 2cm paving laid in chequerboard pattern to building external corner.
- Paving indicated transluscent for clarity.
- LGH3 3mm shim can be inserted on paving supports (maximum 3 per support).
- A PS20LEV 3mm levelling disc can be inserted below the paving support to adjust level differences between the supporting structure and the paving support.
- A maximum of two PS20 paving supports can be stacked to overcome larger level differences.
- Condition 01: PS20 Paving support cut in 1/4 with four tabs remaining.
- Condition 02: PS20 Paving support cut in 1/2 with six tabs retained.
- Condition 03: PS20 Paving support, no tabs removed. No cutting to paving support.
- In addition to the paving supports indicated, an additional PS20 paving support can be installed at the centre of each Paving slab for extra support.

Fig 09/03 – Laid on PS20 paving supports to outside edge.



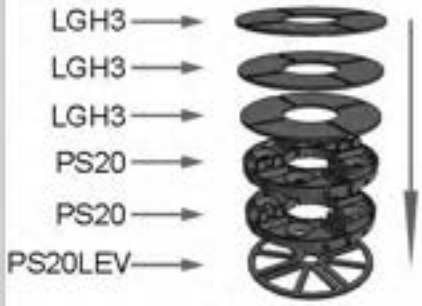
PAVING LAYING PATTERN AROUND A EXPOSED EXTERNAL CORNER.

Condition 01
(Exposed external corner)

Condition 02
(Exposed edge)

Condition 03
(4 Tile junction)

PAVING SUPPORT ILLUSTRATIVE CUTTING GUIDE.



PS20, PS20LEV & LGH3 STACKING.
A maximum of two PS20 paving supports and three LGH3 3mm shims with one PS20LEV levelling disc can be stacked (Total 36mm build up). For greater height build up the NM1-5 paving pedestals should be used.

NOTES:
- PrimaPorcelain 2cm paving laid in chequerboard pattern to building external corner.
- Paving indicated transluscent for clarity.
- LGH3 3mm shim can be inserted on paving supports (maximum 3 per support).
- An PS20LEV 3mm levelling disc can be inserted below the paving support to adjust level differences between the supporting structure and the paving support.
- A maximum of two PS20 paving supports can be stacked to overcome larger level differences.
- Condition 01: PS20 Paving support cut in 1/4 with four tabs remaining.
- Condition 02: PS20 Paving support cut in half with six tabs retained.
- Condition 03: PS20 Paving support, no tabs removed. No cutting to paving support.
- In addition to the paving supports indicated, an additional PS20 paving support can be installed at the centre of each Paving slab for extra support.

Fig 09/04 - Laid on PS20 paving supports, indicative edge details.

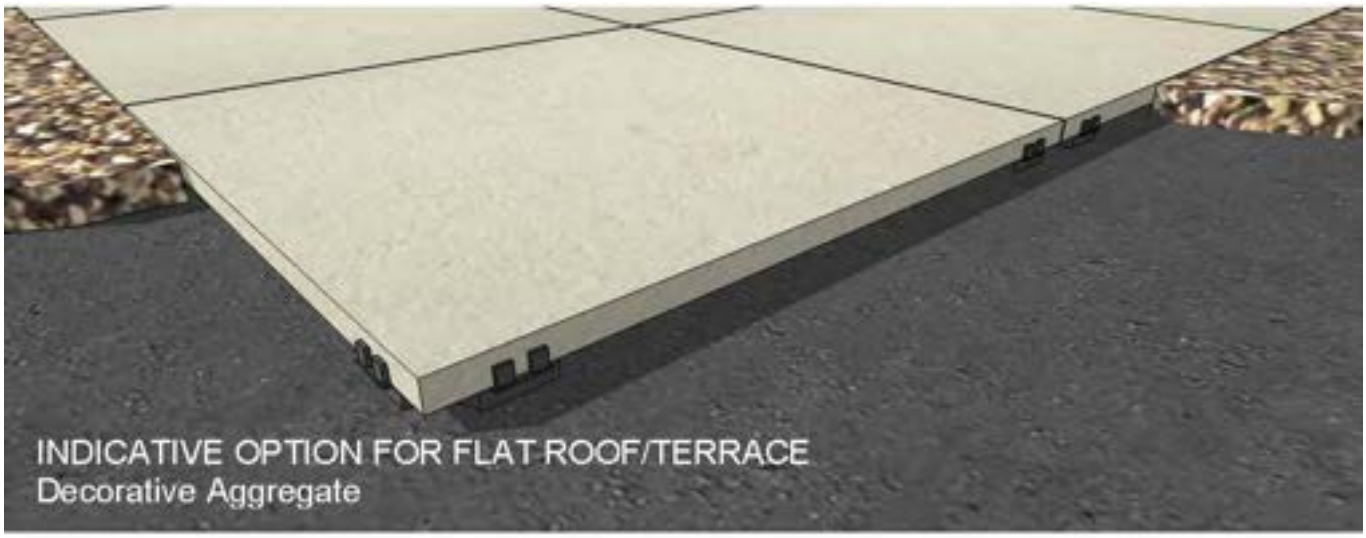
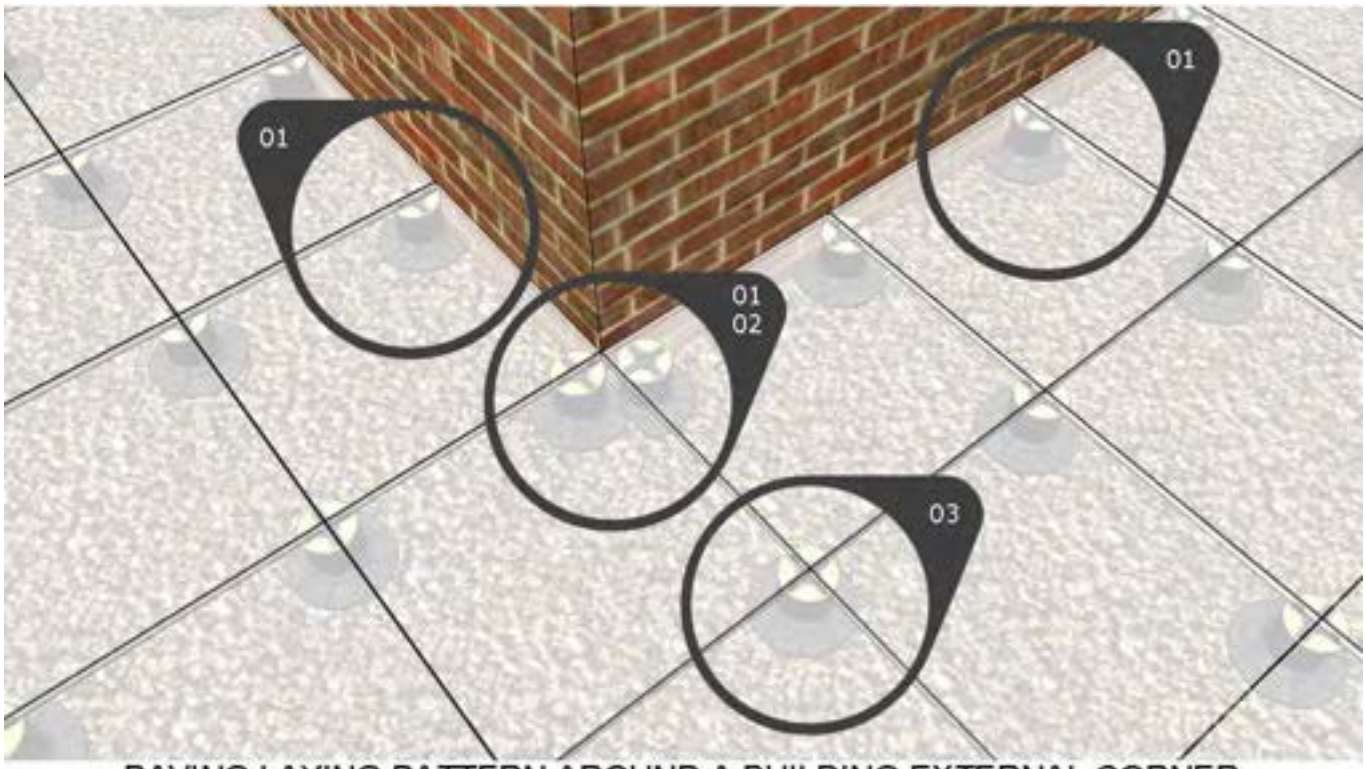


Fig 09/05 - Laid on NM 1-5 pedestals to building external corner.



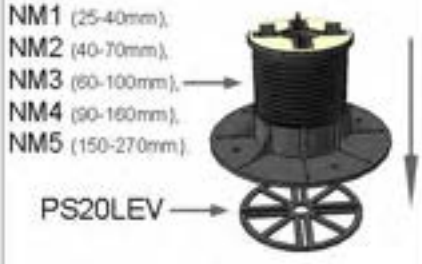
PAVING LAYING PATTERN AROUND A BUILDING EXTERNAL CORNER.

Condition 01
(Against wall)

Condition 02
(Corner - against wall)

Condition 03
(4 Tile junction)

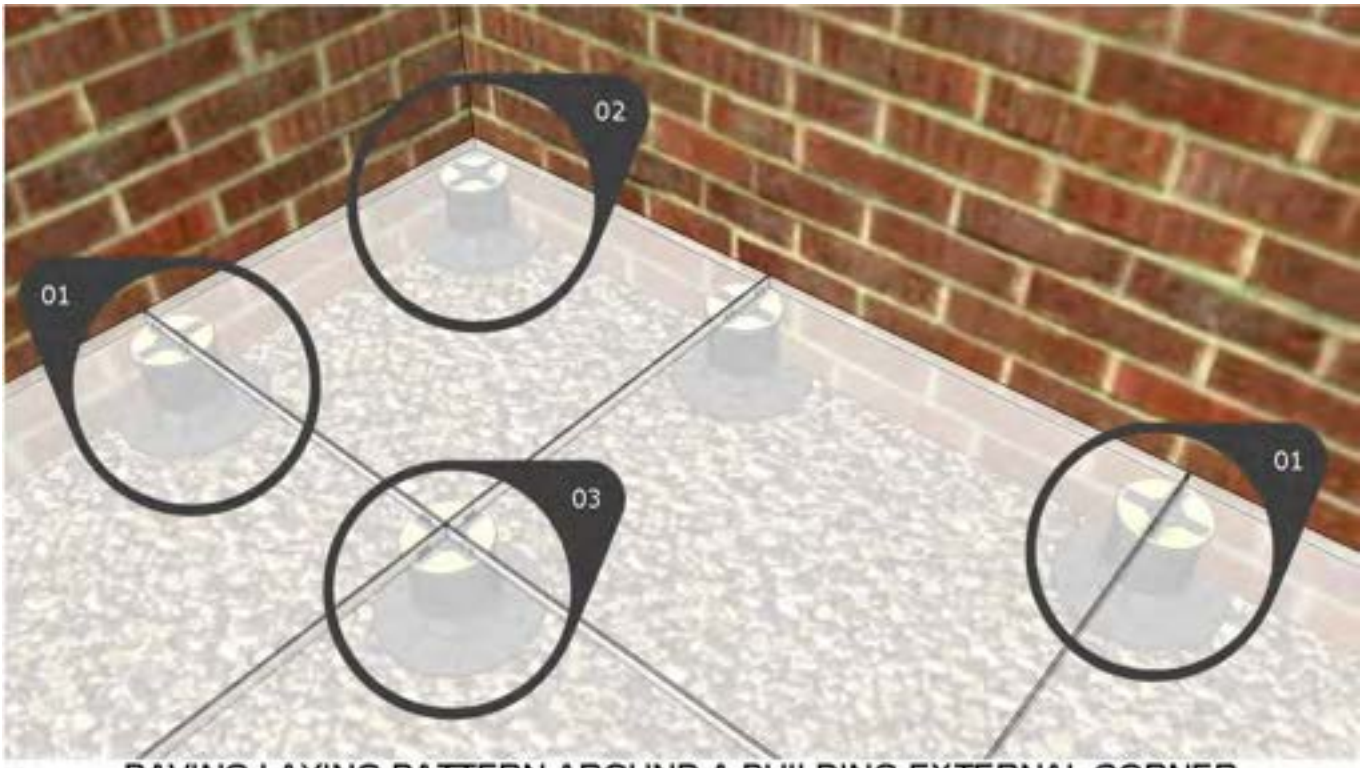
PAVING SUPPORT ILLUSTRATIVE CUTTING GUIDE.



NM1-5 & PS20LEV STACKING.
The NM pedestals can be used in conjunction with one PS20LEV Levelling disc. Do NOT stack the NM pedestals to achieve greater height. For lesser height build up the PS20 paving supports should be used.

NOTES:
- PrimaPorcelain 2cm paving laid in chequerboard pattern to building external corner.
- Paving indicated transluscent for clarity.
- An PS20LEV 3mm levelling disc can be inserted below the NM-- pedestals to adjust level differences between the supporting structure and the pedestal.
- Under no circumstances should the NM-- pedestals be stacked.
- Condition 01: NM-- pedestal, base cut straight with 2 tabs parallel to cut, removed.
- Condition 02: NM-- pedestal, base cut on two edges at right angles with all tabs removed.
- Condition 03: NM-- pedestal, no tabs removed. No cutting to paving support.
- In addition to the pedestals indicated, an additional NM-- pedestal can be installed at the centre of each paving slab for extra support.

Fig 09/06 - Laid on NM 1-5 pedestals to building internal corner.



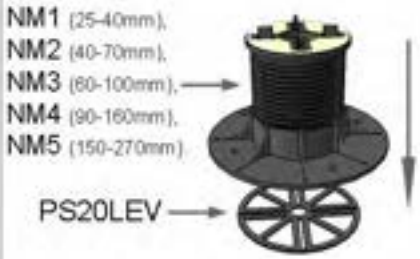
PAVING LAYING PATTERN AROUND A BUILDING EXTERNAL CORNER.

Condition 01
(Against wall)

Condition 02
(Corner - against wall)

Condition 03
(4 Tile junction)

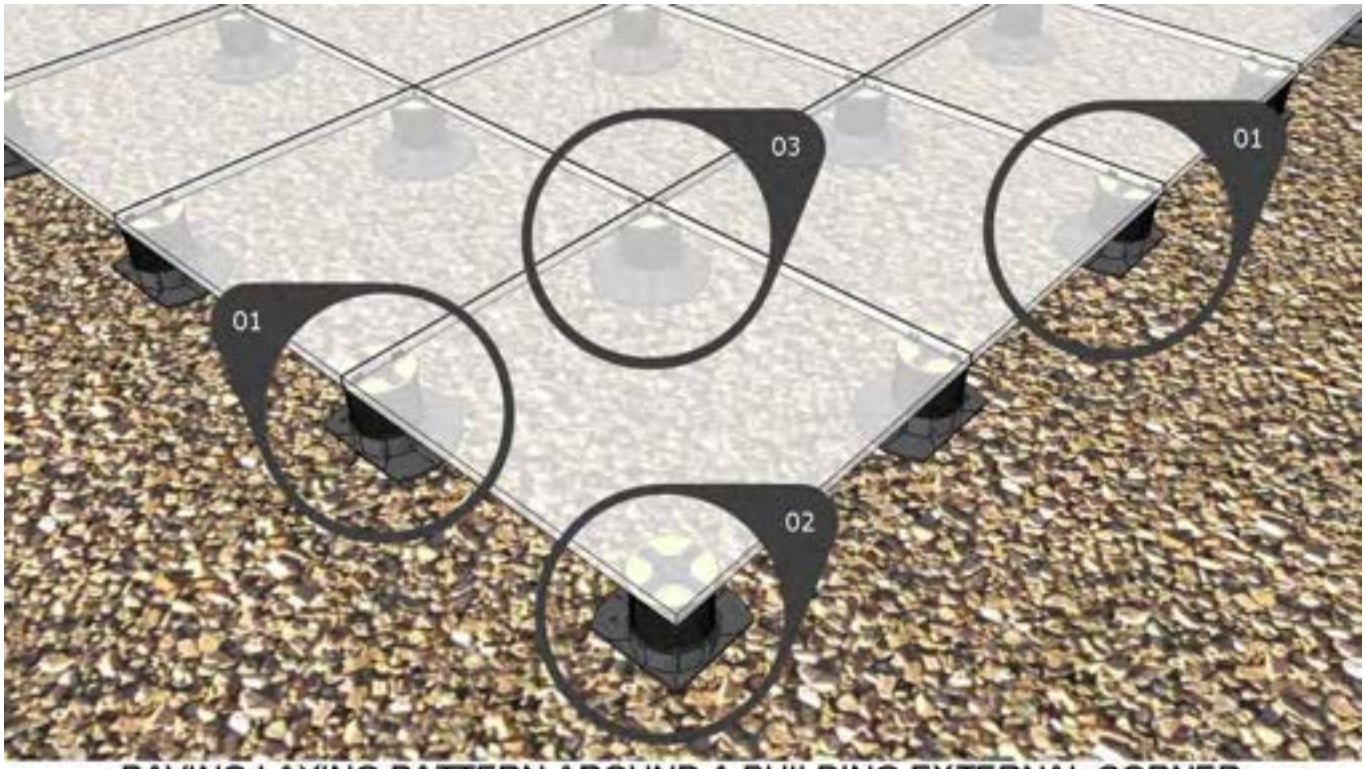
PAVING SUPPORT ILLUSTRATIVE CUTTING GUIDE.



NM1-5 & PS20LEV STACKING.
The NM pedestals can be used in conjunction with one PS20LEV Levelling disc. Do NOT stack the NM pedestals to achieve greater height. For lesser height build up the PS20 paving supports should be used.

NOTES:
- PrimaPorcelain 2cm paving laid in chequerboard pattern to building external corner.
- Paving indicated transluscent for clarity.
- An PS20LEV 3mm levelling disc can be inserted below the NM-- pedestals to adjust level differences between the supporting structure and the pedestal.
- Under no circumstances should the NM-- pedestals be stacked.
- Condition 01: NM-- pedestal, base cut straight with 2 tabs parallel to cut, removed.
- Condition 02: NM-- pedestal, base cut on two edges at right angles with all tabs removed.
- Condition 03: NM-- pedestal, no tabs removed. No cutting to paving support.
- In addition to the pedestals indicated, an additional NM-- pedestal can be installed at the centre of each paving slab for extra support.

Fig 09/07 - Laid on NM 1-5 pedestals to outside edge.



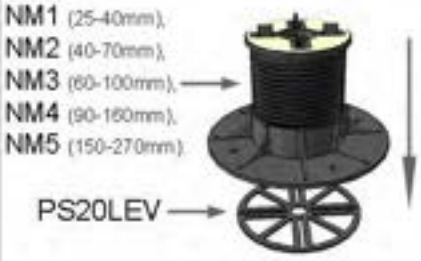
PAVING LAYING PATTERN AROUND A BUILDING EXTERNAL CORNER.

Condition 01
(Along external edge)

Condition 02
(In external corner)

Condition 03
(4 Tile junction)

PAVING SUPPORT ILLUSTRATIVE CUTTING GUIDE.

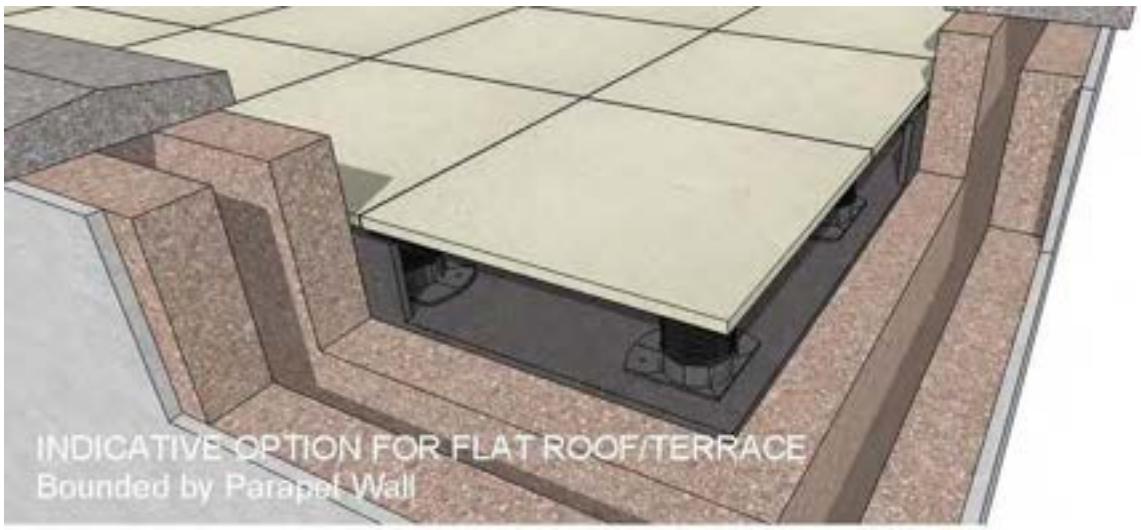


NM1-5 & PS20LEV STACKING.
The NM pedestals can be used in conjunction with one PS20LEV Levelling disc. Do NOT stack the NM pedestals to achieve greater height. For lesser height build up the PS20 paving supports should be used.

NOTES:
- PrimaPorcelain 2cm paving laid in chequerboard pattern to building external corner.
- Paving indicated transluscent for clarity.
- An PS20LEV 3mm levelling disc can be inserted below the NM-- pedestals to adjust level differences between the supporting structure and the pedestal.
- Under no circumstances should the NM-- pedestals be stacked.
- Condition 01: NM-- pedestal, base cut straight with 2 tabs parallel to cut, removed.
- Condition 02: NM-- pedestal, base cut on two edges at right angles with all tabs removed.
- Condition 03: NM-- pedestal, no tabs removed. No cutting to paving support.
- In addition to the pedestals indicated, an additional NM-- pedestal can be installed at the centre of each paving slab for extra support.

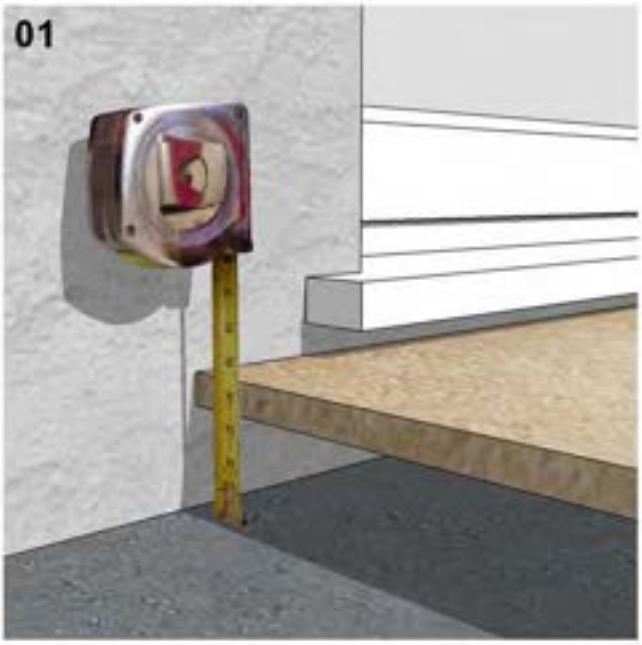
INSTALLING 1cm TILES AND 2cm PAVING

Fig 09/08 - Laid on NM 1-5 pedestals, indicative edge details.

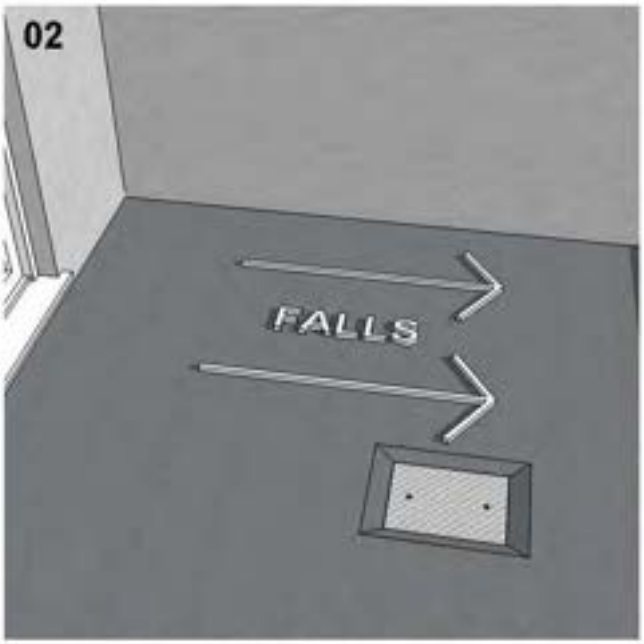


INSTALLING 1cm TILES AND 2cm PAVING

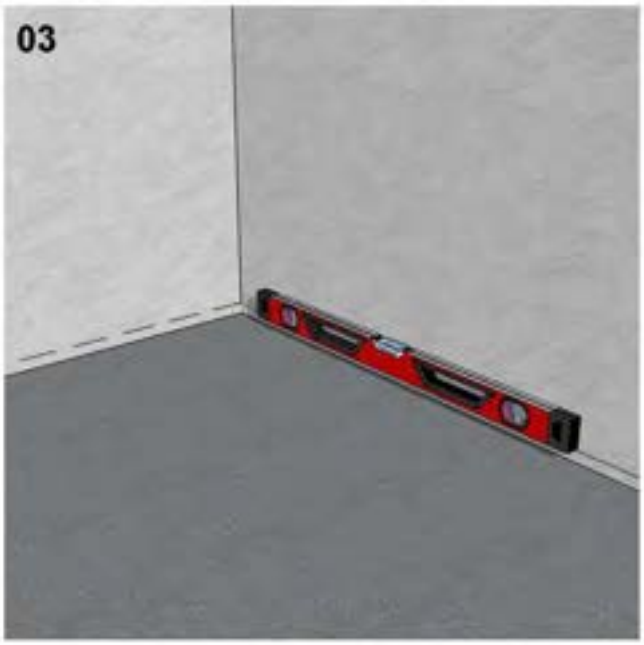
Fig 09/09 - Laid on PS20 paving supports, setting out and installation. (1 of 5)



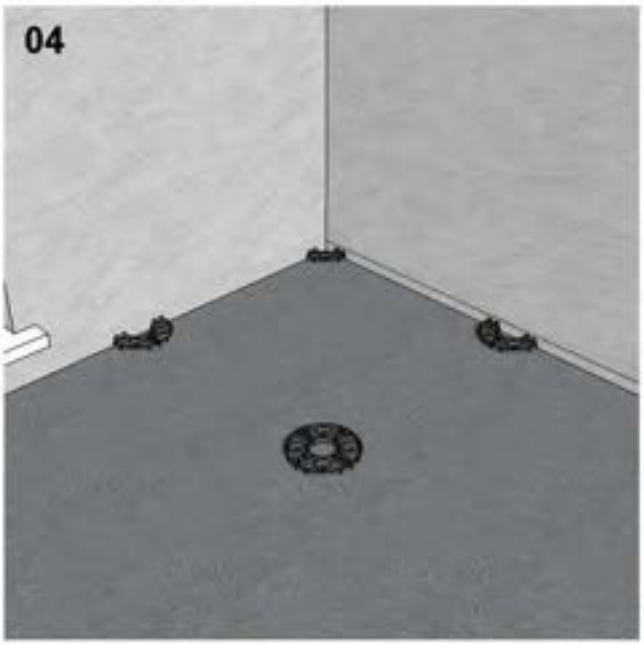
01 - Measure the distance between the area to be paved and adjacent door cills to determine that you have sufficient height. A minimum of 35mm will be required to accommodate the 12mm paving support, the 3mm LGH rubber shim and the 20mm paving slab.



02 - Determine the direction of falls on the supporting structure and commence setting out from the highest edge.

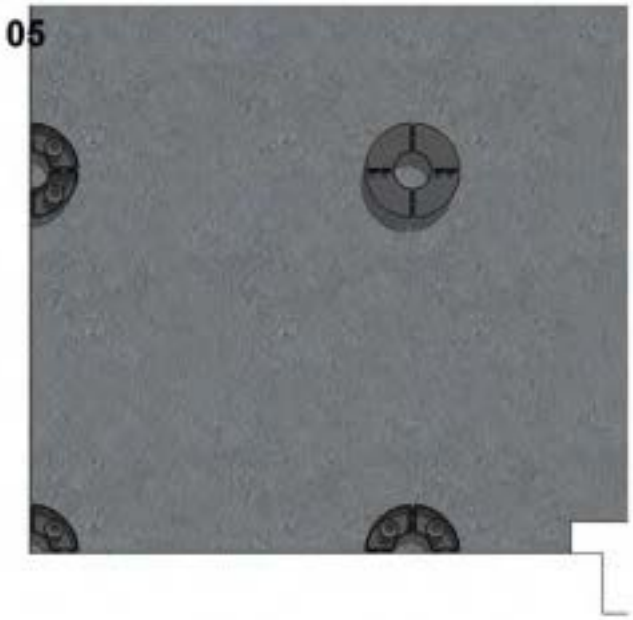


03 - Using a string or chalkline and spirit level set out a horizontal setting out line to one edge, Set the string line at the desired level above the highest edge, in line with the top of the paving slabs



04 - Set out 4N° PS20 paving supports in the first corner adjacent to the string line. The corner and edge paving supports should be cut and spacer tabs retained as outlined in 05 below.

Fig 09/09 - Laid on PS20 paving supports, setting out and installation. (2 of 5)



05 - Using a hand saw cut the corner and edge paving supports as indicated, to ensure the PS20 paving support sits as close to the slab edges and corners as possible, to avoid tipping the slabs when standing on the edge of the laid paving. Retain the spacer tabs to the top of the cut paving supports adjacent to cuts. This should be repeated for all corner and edge pedestals.

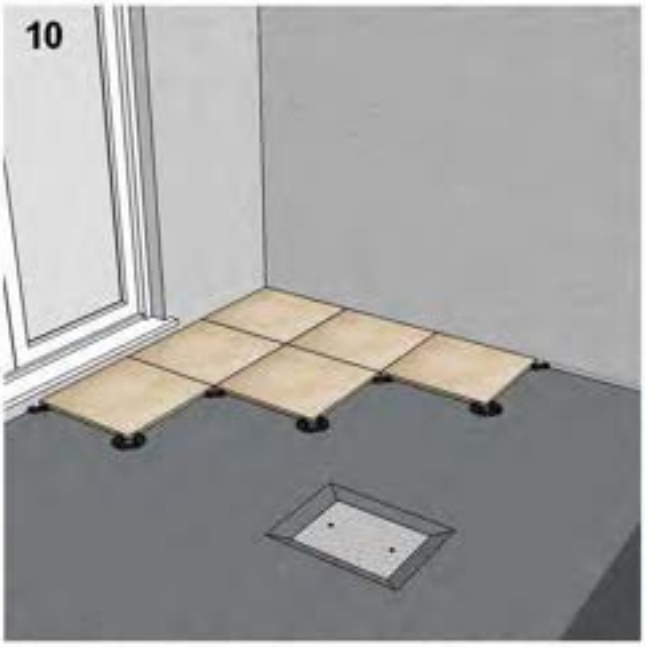
06 - Always place a LGH3 rubber shim on top of the paving support to achieve a level platform to lay the corner paving slab. You can add a PS20LEV levelling shim below the PS20 paving support if necessary.

07 - Lay the corner slab and ensure all four paving support tabs sit snugly against the slab. With the aid of a spirit level ensure the slab is level in all directions. Always maintain a minimum 3mm gap between the edge slabs and any adjacent walls or structures.

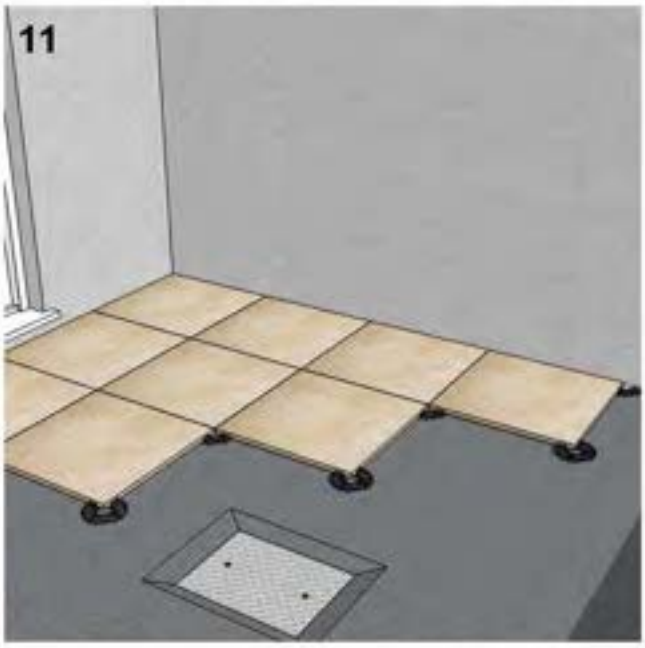
08 - Raise the slab corners and insert additional LGH3 shims as necessary to achieve a completely level finish.

Fig 09/09 - Laid on PS20 paving supports, setting out and installation. (3 of 5)

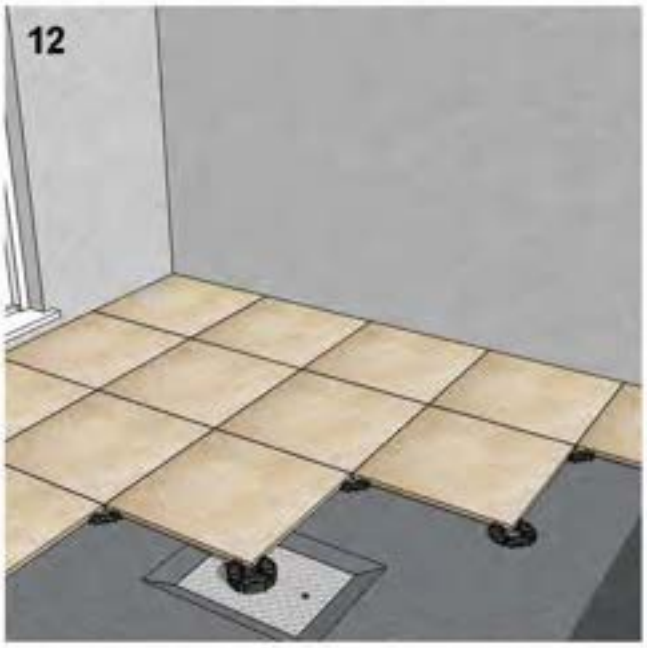
09 - Lay the adjacent paving supports and slabs. Cut the edge paving supports and retain tabs to the edges as outlined in 6 above. Using a spirit level ensure each slab is level as the work progresses. Continue laying the paving by laying adjacent slabs in a diagonal pattern as indicated in 10 - 14.



10 - Using the same method outlined in 09 continue laying the adjacent pedestals and slabs in a diagonal pattern. Inserting additional LGH3 shims and stacking PS20 paving supports as necessary to achieve a level finish.Do not stack more than 2N° PS20 paving supports and 3N° LGH3 shims. For a build up of greater than 36mm use NM1-5 Paving pedestals.

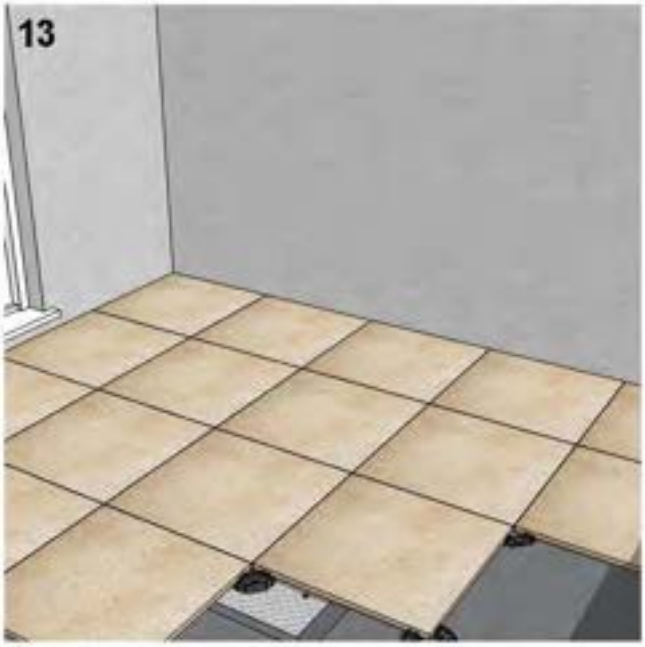


11 - Using the same method outlined in 09 continue laying the adjacent pedestals and slabs in a diagonal pattern. Inserting additional LGH3 shims and stacking PS20 paving supports as necessary to achieve a level finish.Do not stack more than 2N° PS20 paving supports and 3N° LGH shims. For a build up of greater than 36mm use NM1-5 Paving pedestals.



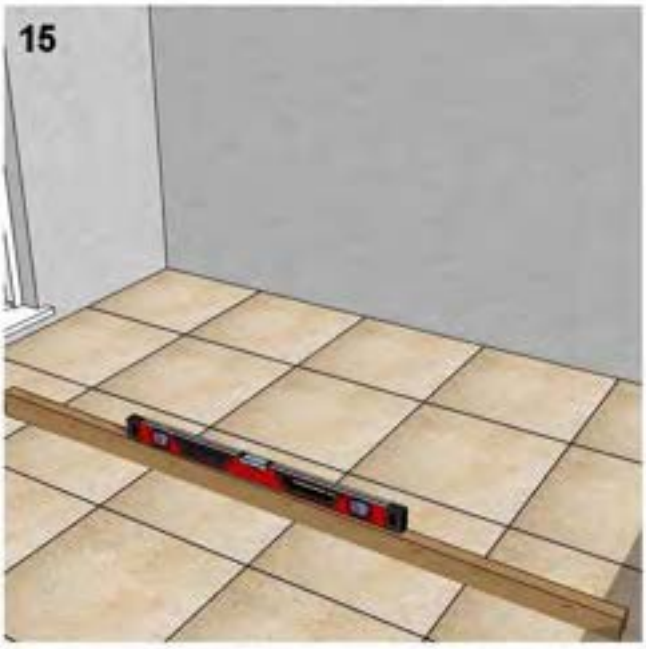
12 - Using the same method outlined in 09 continue laying the adjacent pedestals and slabs in a diagonal pattern. Inserting additional LGH3 shims and stacking PS20 paving supports as necessary to achieve a level finish.Do not stack more than 2N° PS20 paving supports and 3N° LGH3 shims. For a build up of greater than 36mm use NM1-5 Paving pedestals.

Fig 09/09 - Laid on PS20 paving supports, setting out and installation. (4 of 5)



13 - Using the same method outlined in 09 continue laying the adjacent pedestals and slabs in a diagonal pattern. Inserting additional LGH3 shims and stacking PS20 paving supports as necessary to achieve a level finish.Do not stack more than 2N° PS20 paving supports and 3N° LGH3 shims. For a build up of greater than 36mm use NM1-5 Paving pedestals.

14 - Using the same method outlined in 09 continue laying the adjacent pedestals and slabs in a diagonal pattern. Inserting additional LGH3 shims and stacking PS20 paving supports as necessary to achieve a level finish.Do not stack more than 2N° PS20 paving supports and 3N° LGH3 shims. For a build up of greater than 36mm use NM1-5 Paving pedestals.



15 - Using a long spirit level or straight edge check accross all slabs in both directions for flushness. To make fine adjustments, lift any slabs that are out of flush and add/remove LGH3 shims accordingly.

16 - You may need to install cut slabs to the last two edges of the area. Starting in a corner lay a corner and edge paving support, edge and corner paving supports should be cut and spacer tabs retained as for all corner and edge supports, as outlined in illustration 05 above.

Fig 09/09 - Laid on PS20 paving supports, setting out and installation. (5 of 5)

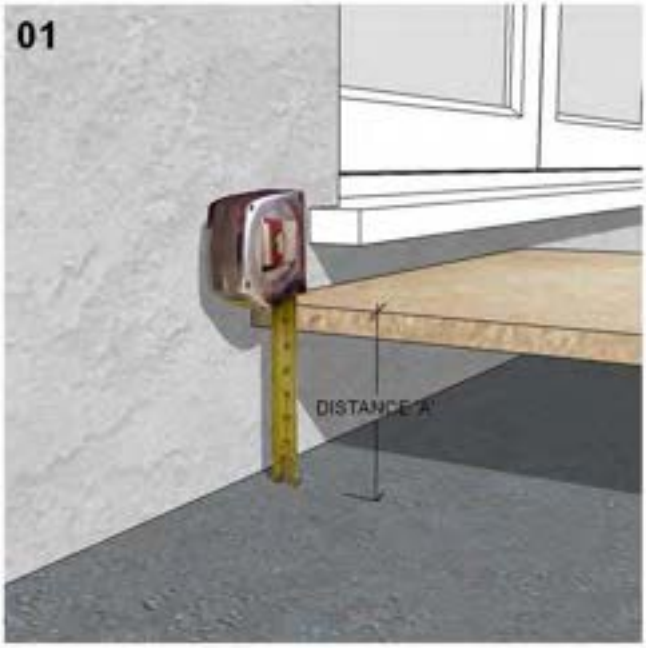
17 - Measure the distance to be paved between the last slab and the bounding wall or structure and subtract 6mm to determine the correct dimension of the cut slab and ensure a mimimum 3mm gap between slabs and adjacent walls or structures. To cut the slabs we recommend you use a Rubi TC-180 circular saw with either dry blade (Rubi TCR31975) or wet blade (Rubi CPC230955).

18 - Continue laying the pedestals and cut slabs in it the same manner to all remaining edges requiring cut slabs.

19 - For recesses, recessed manholes/drains or level changes, you may require to stack up to a maximum of 2N° PS20 paving supports and 3N° LGH3 shims, alternatively NM 1-5 pedestals can be employed for recesses greater than 36mm deep. See our full range of accessories so that you select the appropriate pedestals to suit your application.

20 - Sit back and enjoy your new outdoor terrace.

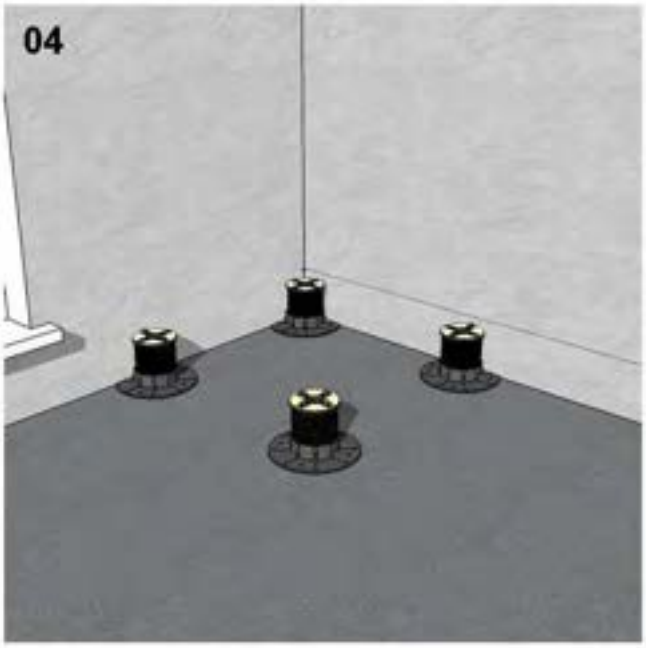
Fig 09/10 - Laid on NM 1-5 pedestals, setting out and installation. (1 of 5)



01 - Determine the direction of falls on the supporting structure and commence setting out from the highest edge. Using a tape measure, measure the distance from the supporting structure to the top of the paving slab (Distance 'A').

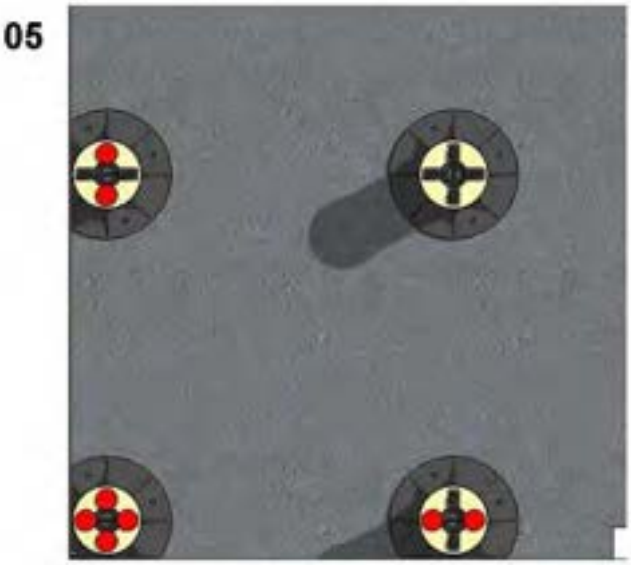
02 - Subtract 20mm from dimension 'A' to determine the height of the pedestals along the setting out edge.

03 - Using a string or chalkline and spirit level set out a horizontal setting out line to one edge, Set the string line at distance 'A' above the highest edge, in line with the top of the paving slabs

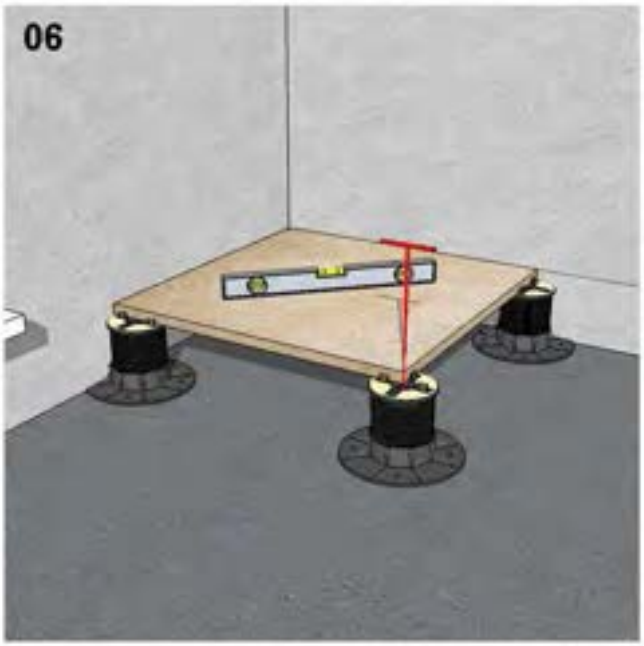


04 - Set out 4N° NM pedestals in the first corner adjacent to the string line. The corner and edge pedestal bases should be cut and spacer tabs removed as outlined in 05 below.

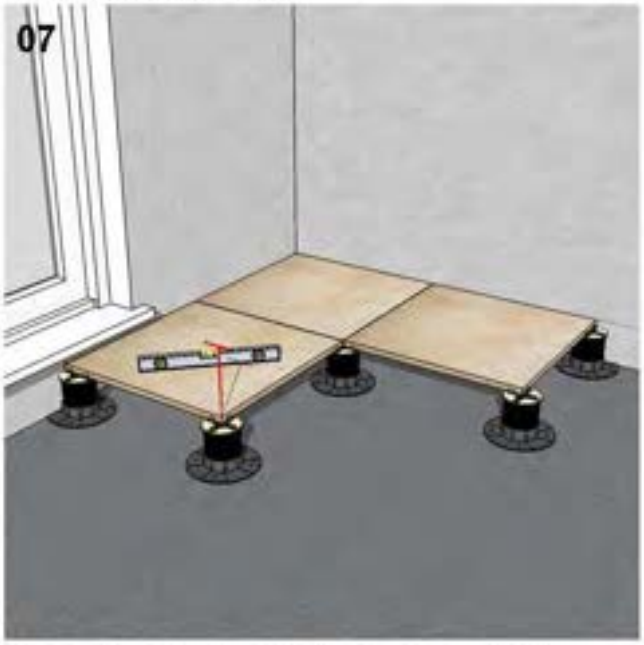
Fig 09/10 - Laid on NM 1-5 pedestals, setting out and installation. (2 of 5)



05 - Using a hand saw cut the corner and edge pedestal bases as indicated, to ensure the NM pedestal sits as close to the slab edges and corners as possible, to avoid tipping the slabs when standing on the edge of the laid paving. Remove the spacer tabs to the top of the pedestals where indicated with a red circle. This should be repeated for all corner and edge pedestals.



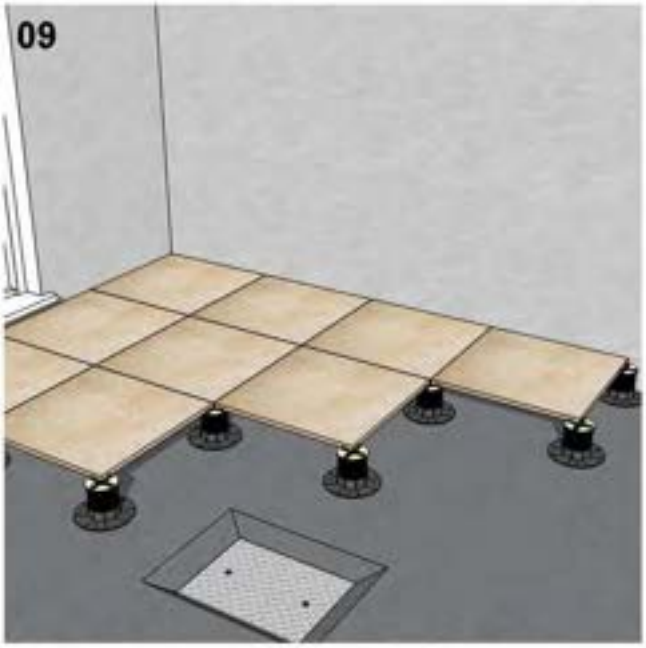
06 - Lay the corner slab and ensure all four pedestals tabs sit snugly against the slab. Adjust the height of the NM pedestals using the NMKEY or a flat head screwdriver, with the aid of a spirit level ensure the slab is level in all directions by finely adjusting each pedestal in turn. Always maintain a minimum 3mm gap between the edge slabs and any adjacent walls or structures.



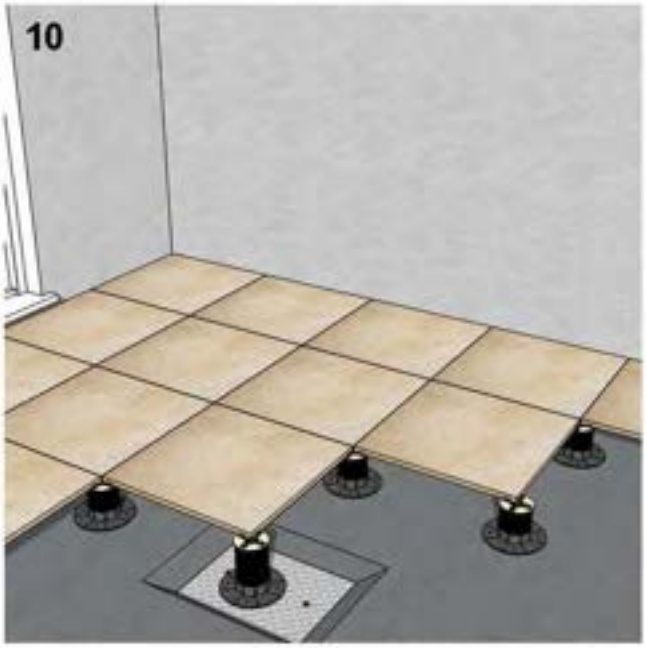
07 - Lay the adjacent pedestals and slabs. Cut the bases and remove tabs from the edge pedestals as outlined in 5 above. Using a spirit level and the NMKEY or flat head screwdriver ensure each slab is level as the work progresses. Continue laying the paving by laying adjacent slabs in a diagonla pattern as indicated in 08 - 12.

08 - Using the same method outlined in 07 continue laying the adjacent pedestals and slabs in a diagonal pattern.

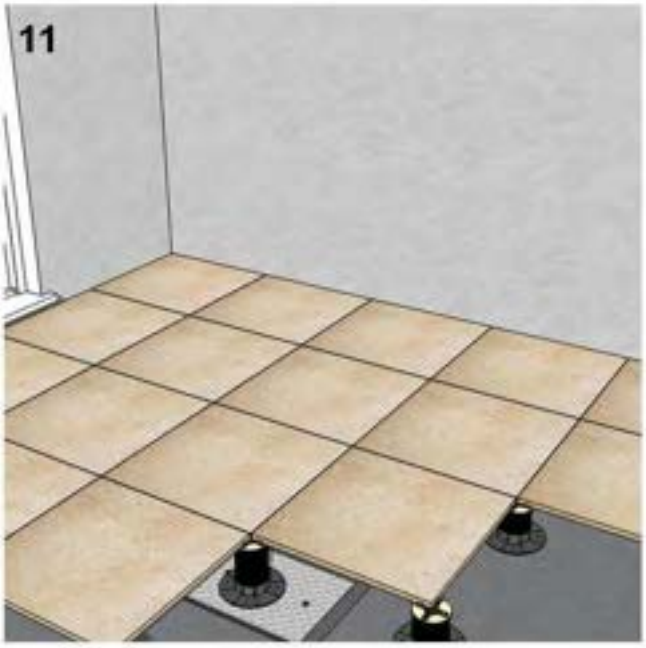
Fig 09/10 - Laid on NM 1-5 pedestals, setting out and installation. (3 of 5)



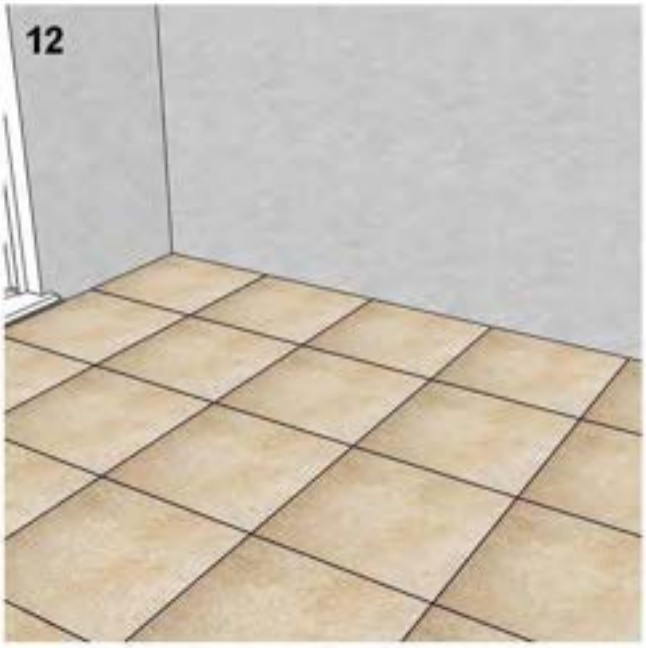
09 - Using the same method outlined in 07 continue laying the adjacent pedestals and slabs in a diagonal pattern.



10 - Using the same method outlined in 07 continue laying the adjacent pedestals and slabs in a diagonal pattern.



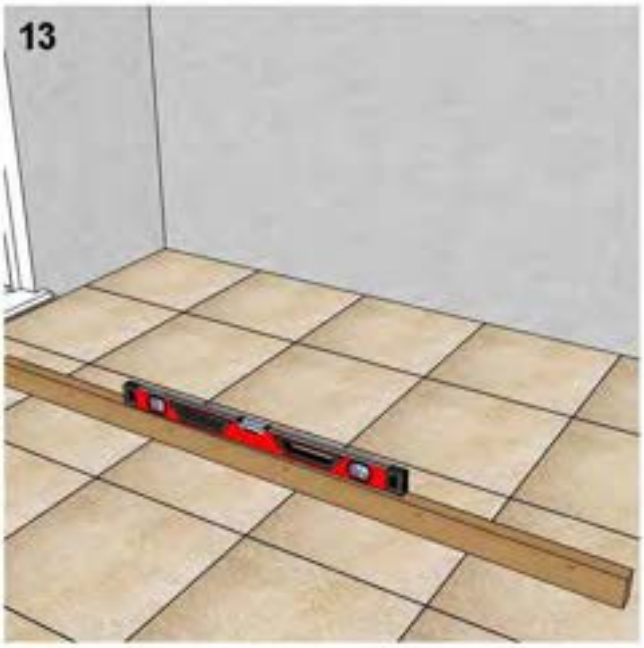
11 - Using the same method outlined in 07 continue laying the adjacent pedestals and slabs in a diagonal pattern.



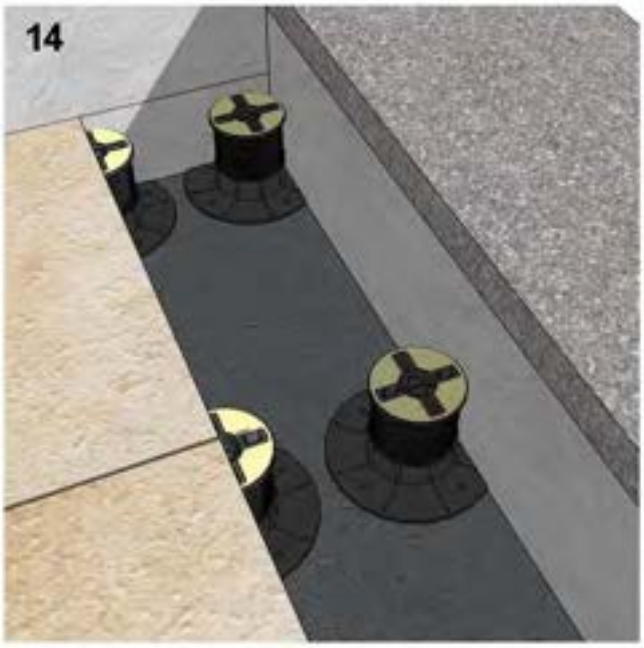
12 - Using the same method outlined in 07 continue laying the adjacent pedestals and slabs in a diagonal pattern.

INSTALLING 1cm TILES AND 2cm PAVING

Fig 09/10 - Laid on NM 1-5 pedestals, setting out and installation. (4 of 5)



13 - Using a long spirit level or straight edge check accross all slabs in both directions for flushness. Fine adjustments can be made at this stage by inserting the NMKEY or flat head screwdriver between the slabs into the pedestals and adjusting the pedestal heights accordingly.



14 - You may need to install cut slabs to the last two edges of the area. Starting in a corner lay a corner and edge pedestal, edge and corner pedestal bases should be cut and spacer tabs removed as for all corner and edge pedestals, as outlined in illustration 05 above.

15 - Measure the distance to be paved between the last slab and the bounding wall or structure and subtract 6mm to determine the correct dimension of the cut slab and ensure a mimimum 3mm gap between slabs and adjacent walls or structures.To cut the slabs we recommend you use a Rubi TC-180 circular saw with either dry blade (Rubi TCR31975) or wet blade (Rubi CPC230955).

16 - Continue laying the pedestals and cut slabs in it the same manner to all remaining edges requiring cut slabs.

Fig 09/10 - Laid on NM 1-5 pedestals, setting out and installation. (5 of 5)

17 - For recesses, recessed manholes/drains or level changes, you may require longer NM pedestals which should be set out and installed in exactly the same manner as all other pedestals. See our full range of accessories so that you select the appropriate pedestals to suit your application.

18 - Sit back and enjoy your new outdoor terrace.

10 – Hints and Tips

Porcelain paving installation is astoundingly easy! Even if you're not a seasoned DIY expert, you'll discover that our tile and paving products are superbly simple and straightforward to lay. Here are a few installation tips that will make the whole process even smoother; if you have any questions, don't hesitate to contact us.

How many tiles/paving slabs should be ordered

Calculate the m² area required or alternatively give us the dimensions of the area and we can work out the area for you. Decide how you plan to fix the porcelain – ie use the 1cm on a suitable adhesive or mortar/cement mix or dry install the 2cm thick paving on to pedestals (the 2cm product can also be installed using adhesive or mortar/cement). For commercial installations you should consider using a central support/pedestal.

- We recommend allowing 10% waste – why?
    - Almost all projects will require some tiles/paving slabs to be cut. You may wish to add a few additional tiles/paving slabs to allow for any breakages.
    - It is advisable to have a few tiles/paving slabs surplus to cover any future repairs.

Joints-Grouts

PrimaPorcelain porcelain has a very close dimensional tolerance and very clean cut edges. This allows you to achieve a very high quality "architectural" finish. Therefore, only a minimal 2mm grout line/gap is required. However, we strongly advise against jointless (no gap) installations as even the slightest change in product tolerance or installation tolerance will affect the overall aesthetic.

Planning

Before laying the floor, a plan should be drawn by yourself or a builder/installer. For careful planning, some basic and important requirements must be taken into account to achieve a good quality installation.

You should consider:

Once the space to be paved has been evaluated, the installer must then:
Decide what tools you require (check our installation page with details on cutting equipment and recommended blades)
Check and prepare the surfaces to be tiled/paved
Check your measurements, that the area is square (if not, how will you finish the edges – Cut angled tiles/paving slabs or possibly leave a gap on the edge/s and finish with decorative aggregate) and if the floor is not level – our fixed support discs and pedestals allow you to level the surface of the finished porcelain surface
If installing porcelain on to a cement/mortar or adhesive base you must allow enough time for it to cure/harden before walking on the finished porcelain surface. Finally, grout the joints.
Where the tiles run up to a building/edge of balcony or roof terrace rather than cutting the tiles to fit the space you may want to infill with gravel/decorative aggregate

Cutting

Porcelain is a very dense, hard material. It is therefore advisable to use the correct equipment and blades to cut the material to achieve the cleanest cut and avoid breakages. Refer to Section 01 – cutting porcelain for details of the appropriate tools for cutting porcelain.

11 – Aftercare

Paving Care & Maintenance

For normal everyday dirt and grime warm soapy water is sufficient. For more aggressive stains see details below:

Stain Resistance

Because Primaporcelain 1cm tiles and 2cm paving are non-porous all spillages remain on the surface and do not soak into the tile. All spillages can simply be mopped up leaving no visible staining.

Dirt Types:	Detergents:
Oils - vegetable and animal fats, beer, wine, coffee and food waste. Nicotine, tea, shoe polish etc.	Alkaline-based exterior floor detergents, caustic soda, potash
Inks, rust stains, felt pen	Acid-based exterior floor detergents, muriatic acid, oxalic acid
Oils and mineral (mechanical) fats, tyre/tyre rubber, resins or paints, candle wax, synthetic shoe polish	Solvents: trichloroethylene, turpentine, acetone
General greyness, colour loss due to dirt accumulation	Acid or solvent based detergents
Daily cleaning	Common detergents free from waxes or perfumed oils

12 – Warranty

Our Porcelain tiles and paving slabs are manufactured to the highest standard. We trust you will be more than happy with the product. Our warranty guarantees against faulty materials for 10 years. The warranty excludes normal wear and tear and damage/breakages caused during transit, installation or objects dropped on to the tile or paving.