

Guidelines for the installation of Tobermore Manhattan

Manhattan should be installed in accordance to BS 7533-3:2005+A1:2009

'Pavements constructed with clay, natural stone or concrete pavers. Code of practice for laying precast concrete paving blocks and clay pavers for flexible pavements.'

Specific Manhattan installation points in association with BS7533-3:2005

1. If installing over an impermeable roadbase

Please refer to Appendix A

2. When installing the Manhattan Blocks

- Linear/plank format paving relies on strong, definite geometric layouts to achieve maximum impact, so make regular use of taut string lines or laser sights to ensure courses are arrow straight at all times.
- Further, because linear/plank format paving requires long, regular lines, it's essential that some jointing material is placed into the joints immediately following compliance checks and before any surface compaction takes place. This will prevent joints from opening or closing more than is desirable.
- For cutting-in, choose units that are closest to the required size and remove as little as possible from the block. Never use pieces less than 125mm in length (half of smallest unit); instead look to use smaller whole units prior to cut piece, thereby allowing a bigger cut piece to be fitted. (see fig.1)
 - For example: A piece of 95mm is required to close a course of paving.
 - The preceding block is a 400x122mm unit.
 - Replace the 400mm unit with a 300mm unit, and then cut another
 - 250mm unit to be 195mm and fit to close the course.

3. Pre-fill joints before compacting the surface

Fill the joints between the Manhattan blocks with jointing sand as specified in BS7533-3:2005.

4. Compact the surface

- Compact the Manhattan block surface to refusal using a minimum 200kg vibrating plate as BS 7533-3 Annex F for Site Categories I and II. Do not use the lighter 120kg option. Make no fewer than 2 passes. Breakages and spalling can be minimised by ensuring a neoprene sole is fitted to the plate compactor and that compaction passes are made in at least two directions that are at 90° to each other (so up-down and right-left).

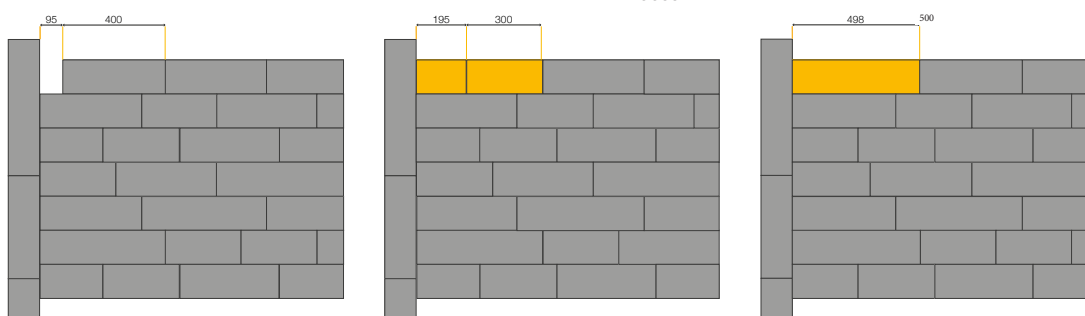


fig.1 Manhattan mixed length pattern pack

Note - Given the thickness of these units, in-situ cracking or breakages are unlikely but, as with all block paving, there will inevitably be some, but I would anticipate it to be less than 2%.

5. Top up the joints

- Apply more jointing sand as specified in BS7533-3:2005.
- Complete 2 further passes of the surface with the same neoprene covered vibrating plate.
- Check the joints between the Manhattan blocks to confirm they remain full to the top. Repeat this step if they are not.

6. Removal procedures

Please refer to BS 7533-11:2003. Code of practice for the opening, maintenance and reinstatement of pavements of concrete, clay and natural stone.

APPENDIX A

If installing over an impermeable roadbase then please consider one of the two options listed below to ensure that surface water does not work its way into the pavement via joints between the surface blocks and liquefy the laying course, causing it to pump out.

Option 1

Resiblock is a sealing product which can be used once the paving is completed. Please contact Resiblock for specific product recommendations.

Option 2

Perforate the roadbase

- If the base course is bituminous then it is important that it is made permeable before installing the laying course.
- To do this, perforate the installed bituminous base course by coring through to the interface with the sub-base using a 75mm diameter rotary core on a 750mm orthogonal grid (just as is required for a DBM base forming part of a pervious block pavement as BS 7533-13).
- Ensure each core goes all the way through the base course to expose the top of the subbase - but does not go more than 4mm further.
- Remove and dispose of the cores and any loose bituminous debris from the hole.
- Fill each hole to the top with L-SS1 sand. Compact this material down using one or more passes with a vibrating plate.
- After compacting, check that each hole remains full to the top with the material. If not, top-up and repeat.
- Ensure the surface of the prepared base course continues to meet BS 7533-3 Annex B levels requirements (see Step 1) and is cleaned of loose

Instructions & Warnings

As referred to in Tobermore's Conditions of Sale

CORE TERMS (PAVING & WALLING)

Product

All products should be carefully inspected for defects or damage upon delivery and prior to being laid or fitted.

Product Information

Within Tobermore, design and development of products is a continuing process, and product information is subject to change without notice. Accordingly, please check with Tobermore to ensure that the product information you have represents the most up-to-date product information.

Installation

All products should be installed in accordance with the latest British Standard.

Colour

Tobermore produces paving and walling products with excellent density and durability, however, as with all concrete products, slight colour variations are inevitable. Although every effort is made to ensure consistency of product colour, variations can occur. In particular, single colours such as Golden, Buff, Natural, Charcoal and Red will have variations. Tobermore therefore recommends that products are thoroughly mixed on site by drawing from a minimum of four pallets.

We would always recommend that when purchasing products, especially in larger quantities, that they are all ordered and manufactured in one batch to reduce the chances of getting colour variation.

Please note that the colour of new products will inevitably vary compared to those which have been installed for a period of time as weathering does take place.

All colour illustrations in Tobermore's brochures are as accurate as the printing process will allow. For a more accurate colour match please refer to actual product samples, which can be provided.

Efflorescence

Efflorescence is a white crystalline deposit that occurs naturally on the surface of concrete materials. Tobermore use market leading technology to significantly suppress the occurrence of efflorescence, however, if it occurs, it may mask the colour of the product for a period of time, but tends to be washed away gradually by rain. Tobermore do not replace products with efflorescence. Packs of products which have had packaging removed should always be re-covered with appropriate packaging to prevent the occurrence of secondary efflorescence.

Surface Scratches

Minor scuffs or bruises may occur during delivery, movement on-site, and installation (for example, during any plate vibrating process). In Tobermore's experience, these marks usually weather off through time. (EasyClean products are protected with a glue dot)

Ordering

To avoid waste, please ensure that your contractor accurately measures the area on site before ordering products. In Tobermore's experience, dimensions taken from a project plan can vary significantly from the final layout.

Manufacturing & Quality Systems

Tobermore is a BS EN ISO 9001, BS EN ISO 14001 and BES 6001 registered company. Tobermore uses an integrated management system to manage all health & safety and environmental issues.

Product Maintenance

Routine cleaning and maintenance is required to keep the overall appearance of products in pristine condition.

Laying multi-blend coloured paving blocks, flags and walling products

To achieve an even blend of colour when laying multi-blend paving blocks, flags and walling products, it is desirable to mix from three or four different pallets.

Queries & Complaints

Please contact one of Tobermore's Paving & Walling Centres or offices (contact details at www.tobermore.co.uk) with any queries or complaints. Any complaints must be notified to Tobermore without delay.

CORE TERMS (PAVING ONLY)

Product Maintenance

Light coloured paving blocks and flags emphasise tyre marks and oil spills on the driveway. Please note that these products will need more maintenance if overall appearance is to be maintained.

Initial Cleaning

When an area has just been paved, allow it to settle for a few days. After this, you may wish to lightly hose down the paving to remove any excess sand or dirt. The area should then be treated with a weed killer suppressant two – three times per year as required.

General Cleaning

Paving requires regular maintenance, including regular sweeping to prevent the build up of detritus. Tobermore recommends that paving is cleaned two – three times per year.

For general cleaning of dirt and algae, vigorous brushing with a stiff yard brush with plenty of hot detergent solution (washing up liquid or non-bio washing powder), thoroughly rinsed with clean water, should suffice. Repeated treatment may be required for paved areas sited beneath trees or in permanent/near permanent shade.

A light power hose at medium pressure is generally all that is required to clean general dirt and grime. Any jointing material which is removed must be replaced. Do not use high pressure powerwashers as aggressive power-washing can damage the product surface. A trial area should be tested before large scale powerwashing takes place. (Important: EasyClean products should not be pressure washed. Please refer to specific EasyClean information)

Moss, Lichen and Algae

Thick growths of moss or lichen must be removed first by scraping out the joints and then treating the area with a moss killer such as anti-moss paving cleaner. Anti-moss is designed to remove moss, lichens and algae. It is best applied in dry weather. After being applied it will take a few days to be fully effective. Once the moss and lichens have been killed, they can easily be brushed off. Anti-moss also leaves a residue in the sand joint which will help reduce the likelihood of re-growth. The manufacturer's instructions should always be followed when using any cleaning agent.

Weeds

Large weeds should be removed by hand and then the area treated with a weed killer (available from any good garden centre). Smaller weeds can then be treated directly with weed killer and these weeds should start to die within days. The manufacturer's instructions should always be followed when using any weed killing agent.

Block Paving Sealer

It is possible to seal block paving with a resin material which combats staining and weed growth and which also enhances colour and appearance. The acrylic sealer is sprayed onto the block paving and forms a 'skin' on top of the paving and the jointing material giving an easily maintained finish. The manufacturer's instructions should always be followed when using any sealing agent. (Important: Do not use sealers on EasyClean products)