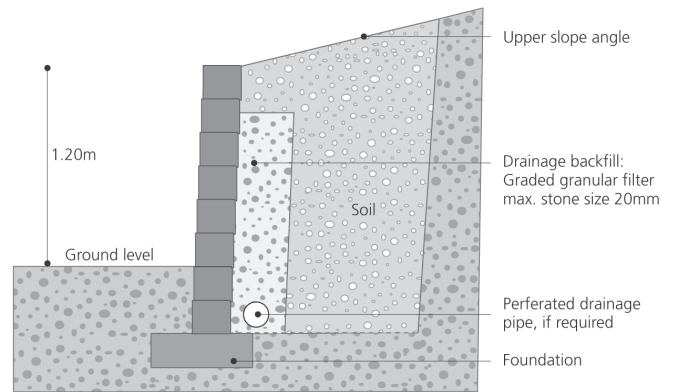


guidelines for constructing a gravity wall up to 1.2m

secura grand

Foundations and drainage pipe

- 1 Prepare the foundation, excavating any unsuitable material and replacing it with 100mm Type 1/CL804, clean compacted material. The depth and width of the trench depends on which Secura product you have chosen. *(Please refer to the table below for dimensions and recommended block courses below ground).*
- 2 Lay the drainage pipe if required at the back of the wall and cover with granular filter, maximum stone size 20mm.



product	max. gravity wall height	min. internal radius	max. external radius	trench width (mm)	trench depth (mm)	foundation material	foundation depth (mm)	block courses below ground
SECURA GRAND	1.2m	3m	3m	600	350	Type 1/CL804	100	2

Laying the blocks

- 1 Remove the nib from the base of the blocks to be used on the first course using a bolster and club hammer.
- 2 Using a spirit level, ensure your first row of blocks are level as this will dictate the general appearance of the finished wall.
- 3 Leave a gap of 2-3mm between the blocks to maintain perpendicular joint alignment and to allow for any movement of the ground.
- 4 Before laying subsequent layers, brush the top surface of the blocks to remove any debris which may affect the wall level.
- 5 To achieve a staggered bond, place a block approximately half a block width from its final position and slide sideways into place. Ensure the nib at the back of the block is placed against the block below.
- 6 Build the wall up at four courses at a time to the required height and backfill. Voids should be filled after each row is built. Use a spirit level to ensure the blocks are level as you build each row.
- 7 To install copings place two strips of adhesive cord 50mm from the front and rear faces of the blocks on the final two rows of walling. This cord should be dry or slightly damp (never wet). Alternatively copings can be glued on using an appropriate concrete adhesive.

It is good practice to use a spirit level and straight edge frequently during the construction of the wall. This will help to ensure the wall is built correctly.



Backfilling and drainage

- 1 Backfill the wall with graded granular filter, maximum stone size 20mm, to improve drainage. This should be 125mm wide and be finished 300mm below the top of the finished wall.
- 2 Please note the wall should be backfilled every four courses to avoid undue deformation of the wall.
- 3 Fill in remainder of area with clean soil.

Notes

- When the angle of the upper slope is greater than 30° the retaining wall height should be reduced or soil reinforcement introduced.
- A hammer and chisel or circular saw can be used to cut or split blocks. Eye protection should be worn at all times when using any of these tools.
- Always use a coping to cap the top of the wall.

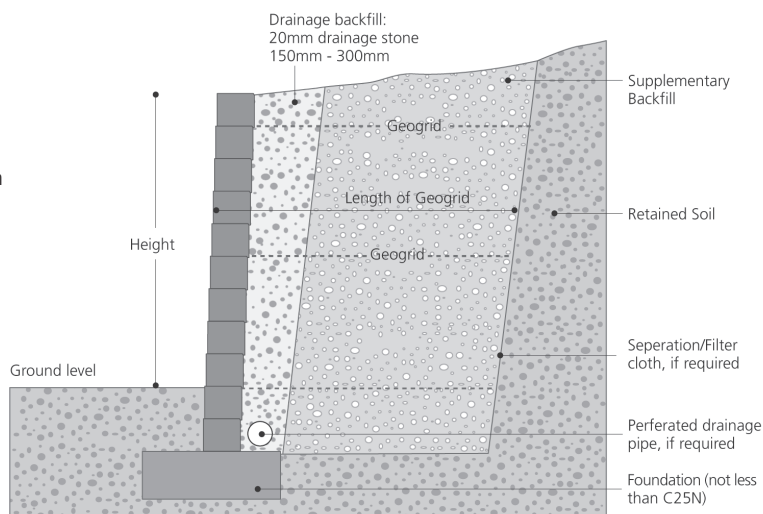


guidelines for constructing a reinforced wall above 1.2m

secura grand

Foundations and drainage pipe

- 1 Prepare the foundation, excavating any unsuitable material and replacing it with acceptable compacted material. The depth and width of the trench depends on which Secura product you have chosen. *(Please refer to the table below for dimensions and recommended block courses below ground)*
- 2 Cast a mass concrete footing using C25N plain concrete or a compacted DTP Type 1 (or Clause 804 unbound mixture) levelling pad as specified.
- 3 Lay the drainage pipe at the back of the wall and cover with granular filter, maximum stone size 20mm.

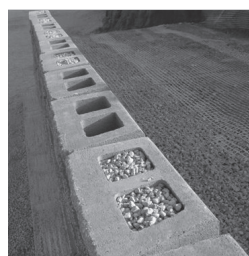


product	max. gravity wall height	min. internal radius	max. external radius	trench width (mm)	trench depth (mm)	foundation material	foundation depth (mm)	block courses below ground
SECURA GRAND	1.2m	3m	3m	600	350	Type 1/CL804	100	2

Laying the blocks

- 1 Remove the nib from the base of the blocks to be used on the first course using a bolster and club hammer.
- 2 Using a spirit level, ensure your first row of blocks are level as this will dictate the general appearance of the finished wall.
- 3 Leave a gap of 2-3mm between the blocks to maintain perpendicular joint alignment and to allow for any movement of the ground.
- 4 Before laying subsequent layers, brush the top surface of the blocks to remove any debris which may affect the wall level.
- 5 To achieve a staggered bond, place a block approximately half a block width from its final position and slide sideways into place. Ensure the nib at the back of the block is placed against the block below.
- 6 Build the wall up four courses at a time, placing Geogrid on top of each specified block layer and backfilling until you reach the required height. Voids should be filled after each row is built. Use a spirit level to ensure the blocks are level as you build each row. *(See guidelines on next page for using Geogrid, backfilling and drainage)*
- 7 Place two strips of adhesive cord 50mm from the front and rear faces of the blocks on the final two rows of walling. This cord should be dry or slightly damp (never wet). Alternatively copings can be glued on using an appropriate concrete adhesive.

It is good practice to use a spirit level and straight edge frequently during the construction of the wall. This will help to ensure the wall is built correctly.

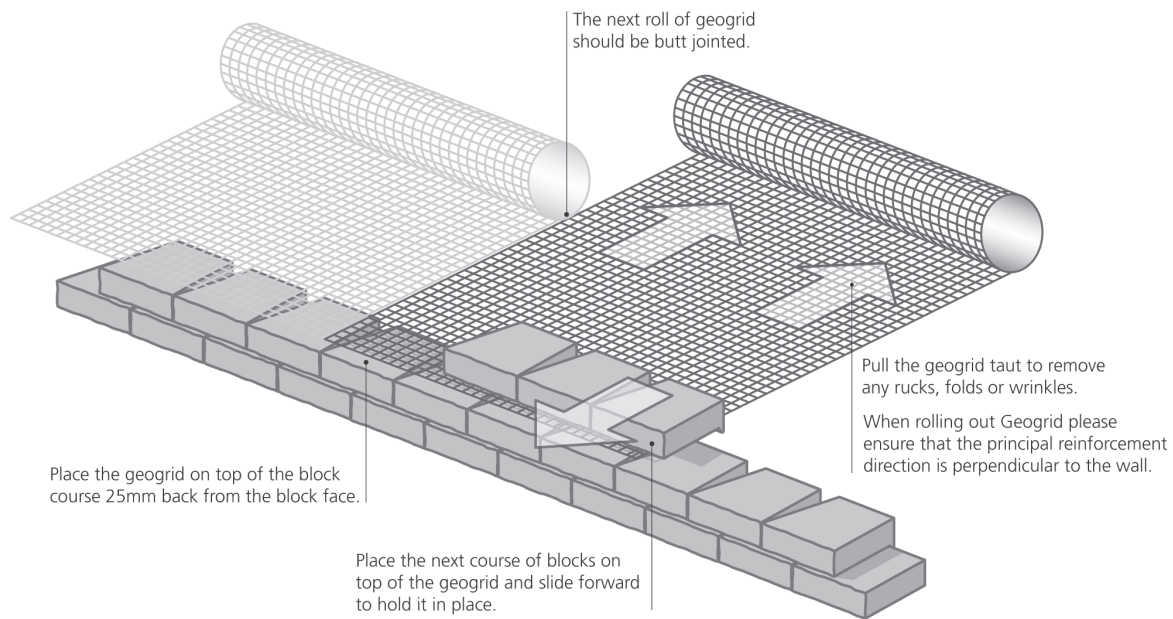


Notes

- Secura Grand has two voids in the block. We recommend filling these voids using graded granular filter, with a maximum stone size 20mm. These voids should be filled before building the next row. When using Secura Grand it is advisable to use a coping to finish off the wall due to the voids in the blocks.
- A hammer and chisel or circular saw can be used to cut or split blocks. Eye protection should be worn at all times when using any of these tools.



guidelines for drainage, geogrid & backfill



Drainage

- 1 Lay a drainage pipe at the back of the wall and cover with graded granular filter, maximum stone size 20mm.

Geogrid

- 1 Place the Geogrid on top of the block at the specified course ensuring that the edge is 25mm back from the front of the block.
- 2 Roll out Geogrid ensuring that the principal reinforcement direction is perpendicular to the wall. Also ensure that the Geogrid is butt jointed and never overlapping. Cut geogrid to required length.
- 3 Place the next course of blocks on top of the Geogrid and slide forward to hold in place.
- 4 Further courses of blocks may be placed in position up to the next specified Geogrid course.
- 5 Lay the Geogrid on top of the compacted backfill, ensuring that it is lying flat on the backfill. Pull the Geogrid taut to remove any rucks, folds or wrinkles.
- 6 Continue building the wall, placing the Geogrid and compacting the backfill as above to the required height.

Backfilling

- 1 Place the supplementary backfill on the Geogrid and spread it out away from the wall, leaving a gap of 150mm - 300mm between the wall and the supplementary backfill.
- 2 Fill the gap between the wall and the compacted layer with drainage backfill, maximum stone size 20mm.
- 3 Compact the supplementary backfill in 250mm layers, working from the wall towards the rear of the Geogrid.
- 4 Compaction by plate vibrator is recommended. Vibrating or static rollers should not be used within 1 metre from the back of the wall. Compacting specifications can be obtained from Tobermore.

Notes

- The above diagram illustrates the construction of straight walls using Geogrid. *(For the construction of curved walls please contact Tobermore)*
- Supplementary backfill material should be used in accordance with 6I & 6J.

disclaimer

Instructions and warnings

The following Warnings & Instructions relate to the Secura product ("Product") supplied by Tobermore Concrete Products Limited ("Tobermore"), and are set out here to inform prior to the placing of any Product Order. For the avoidance of doubt, these Warnings & Instructions do not vary or amend Tobermore's Terms & Conditions of Sale for the Product ("Terms & Conditions of Sale") to which any Product order shall be subject. In the event of conflict or ambiguity between any provision of these Warnings & Instructions and any provision of the Terms & Conditions of Sale, the provision of the Terms & Conditions of Sale shall prevail.

Installation

All product should be installed in accordance with British Standard BS8002. When constructing a retaining wall ensure you follow the design provided by the scheme engineer. Tobermore excludes all liability for any defects, damages, expenses or other issues arising in connection with the construction of the retaining wall.

Tobermore excludes liability for any loss or damage resulting from any inaccuracy or insufficiency in the information or specification(s) supplied to Tobermore to enable it to provide any technical information in relation to the Product.

Any technical information provided by Tobermore in relation to the Product (whether before or after Product order) is provided by way of GUIDANCE ONLY and, as permitted by law, without liability on the part of Tobermore for any loss or damage suffered as a result of relying upon it. Such technical information is not to be relied upon in substitution for obtaining independent expert advice, prior to using the Product, from both a suitably qualified engineer and building contractor, in particular, as to the suitability of the Product and its design for both the intended site and the project plan to develop that site.

TAS Approval

The Roads Service in Northern Ireland requires that all proposed retaining walls within 6m of a road boundary or which support a public road are subject to Technical Approval. Walls up to 1m high do not require approval.

Tobermore do not supply blocks to projects where TAS approval is required unless the walls are 1m or below. It is important that all developers and contractors make themselves aware of these requirements especially if they want the roads within their development to be adopted by Roads Service. It is the responsibility of the developer/contractor to check if TAS approval is required, as not doing so at an early stage before wall construction can lead to delays and other problems when finalising contractual agreements.

Product

All products should be carefully inspected for defects or damage before use. As permitted by law, Tobermore excludes liability for both the replacement costs and/or delay suffered as a result of having laid or fitted defective or damaged Product.

Laying multi-blend coloured bricks

To achieve an even blend or colour when laying multi-blend bricks, it is desirable to mix the bricks from three or four different pallets.

Colours

Tobermore produces paving products with excellent density and durability, However, as with all concrete products, slight colour variations and/or weathering may occur. Tobermore excludes liability for any such colour variations and/or weathering.

Although every effort is made to ensure consistency of product colour, variations between production batches can occur. We therefore recommend that, when purchasing materials, especially in larger quantities, that they all come from the same batch and that products are thoroughly mixed on site by drawing from a minimum of three packs. Tobermore cannot accept responsibility for failure to achieve consistency in product colour.

The colour of new paving bricks will inevitably vary compared to bricks, which have been laid for a period of time. Tobermore cannot accept responsibility for this.

Efflorescence

Efflorescence is a white crystalline deposit that occurs naturally on the surface of masonry materials. If it occurs, efflorescence may mask the colour of the Product for a period of time, but tends to be washed away gradually by rain. Tobermore excludes liability for the occurrence of efflorescence.

Surface Scratches

When products are laid they sometimes have minor scuffs or bruises, caused mainly by the installation. In our experience these marks usually weather off through time. Tobermore cannot accept responsibility for this.

Product Maintenance

Routine cleaning and maintenance is required to keep the overall appearance of the product in pristine condition. For further details please contact the sales office.

Ordering

To avoid waste, you should get your contractor to measure the area accurately on site, before ordering material as we often find that dimensions taken from a project plan can vary significantly from the final layout. (See also under Colours)

Returns

Please note that Tobermore do not accept returns on any materials.

Queries & Complaints

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

Manufacturing standards

All Tobermore products are manufactured to meet or exceed British and European Standards Tobermore use an Integrated Management & Safety and Environmental issues.

Quality systems

Tobermore are a BS EN ISO 9001:2000 and BS EN ISO 14001 registered company.

