

Betoconcept

earth retaining solutions

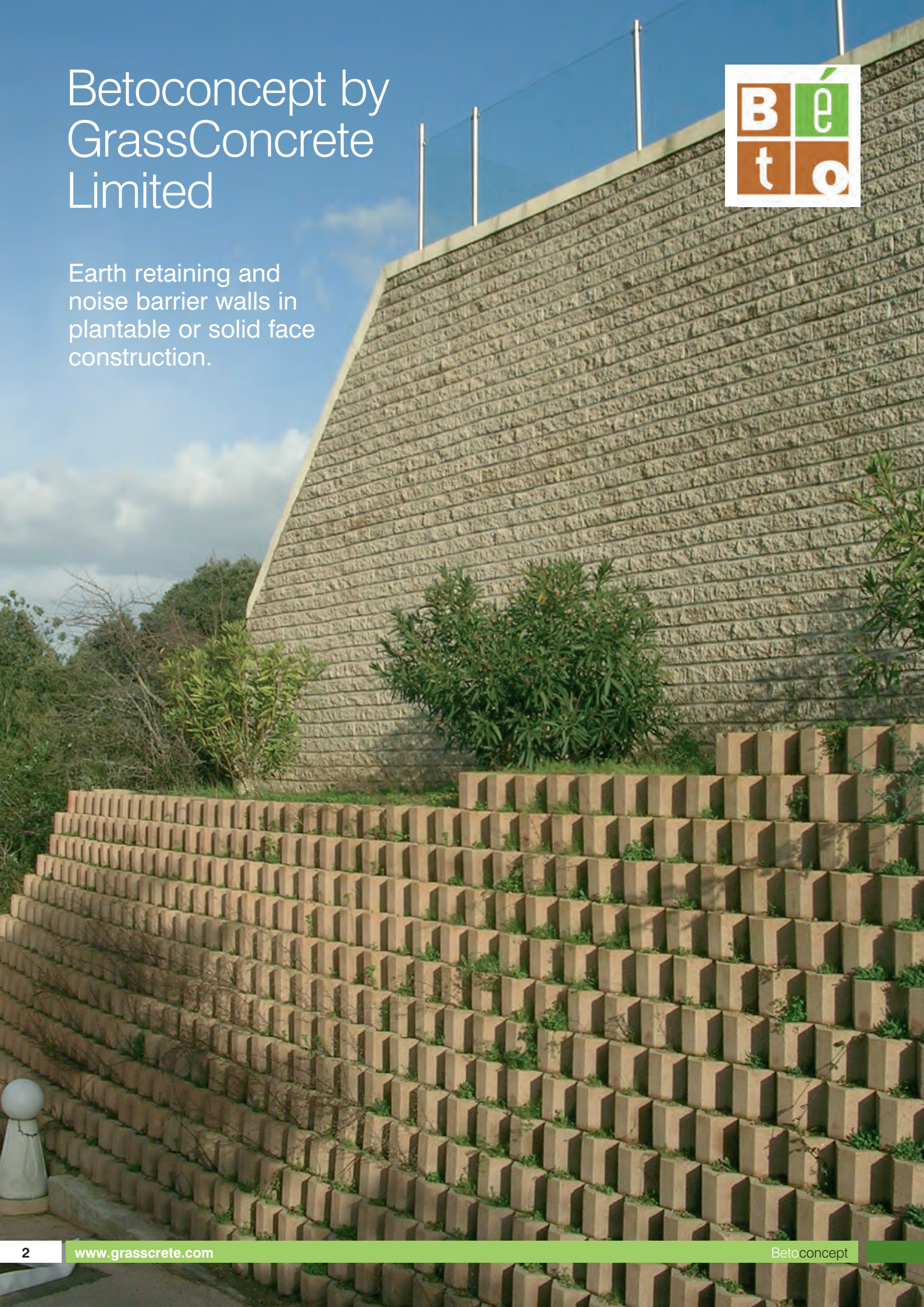


GrassConcrete

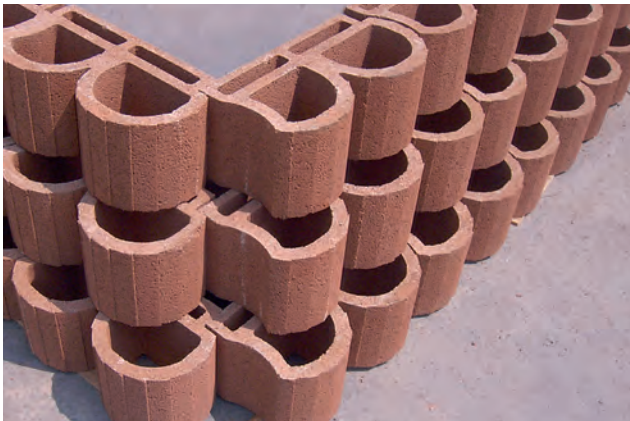
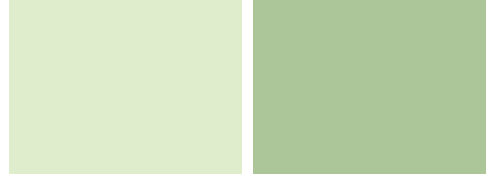
Betoconcept by GrassConcrete Limited



Earth retaining and
noise barrier walls in
plantable or solid face
construction.



Betoconcept range



Betoplus

Plantable walls generally up to 2.4m high



Betoatlas

Plantable walls generally up to 10.6m high



Betotitan

Plantable walls generally up to 22m high



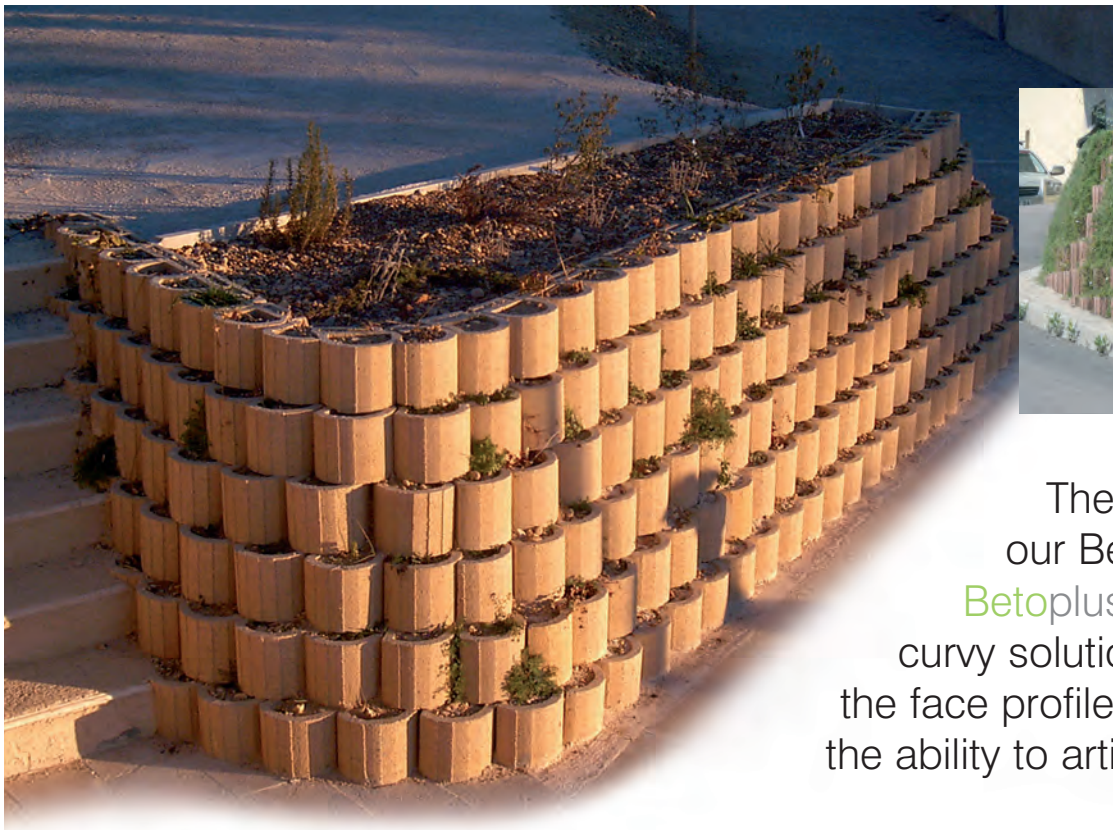
Leromur

Split faced unplanted walls generally up to 10m high

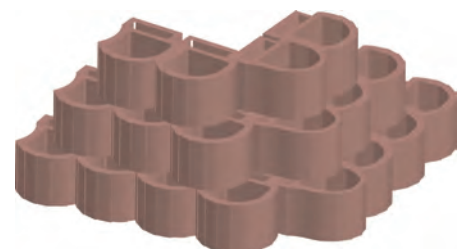
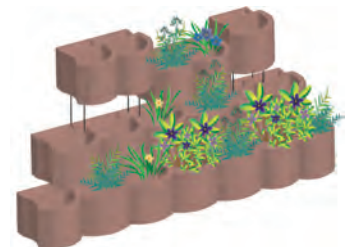
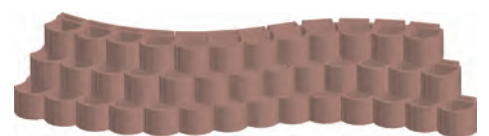


Betonap

Woven mesh geo-grid earth reinforcement



The successor to our Betoflor system **Betoplus** offers a new curvy solution, not only is the face profile curved it has the ability to articulate in plan configuration.



Supply data

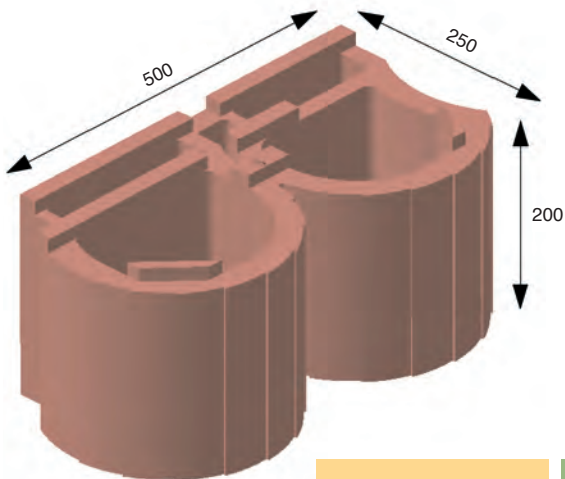
| | |
|-------------------------------|---|
| Weight of empty block: | 23kg approx |
| Weight of earth filled block: | 50kg approx |
| Blocks per m ² : | 10 |
| Construction: | 35mN/m ² @ 28 days pressed concrete |
| Colours: | Natural, Buff, Red |
| Pack size: | 32 blocks |

Design criteria - sample data*

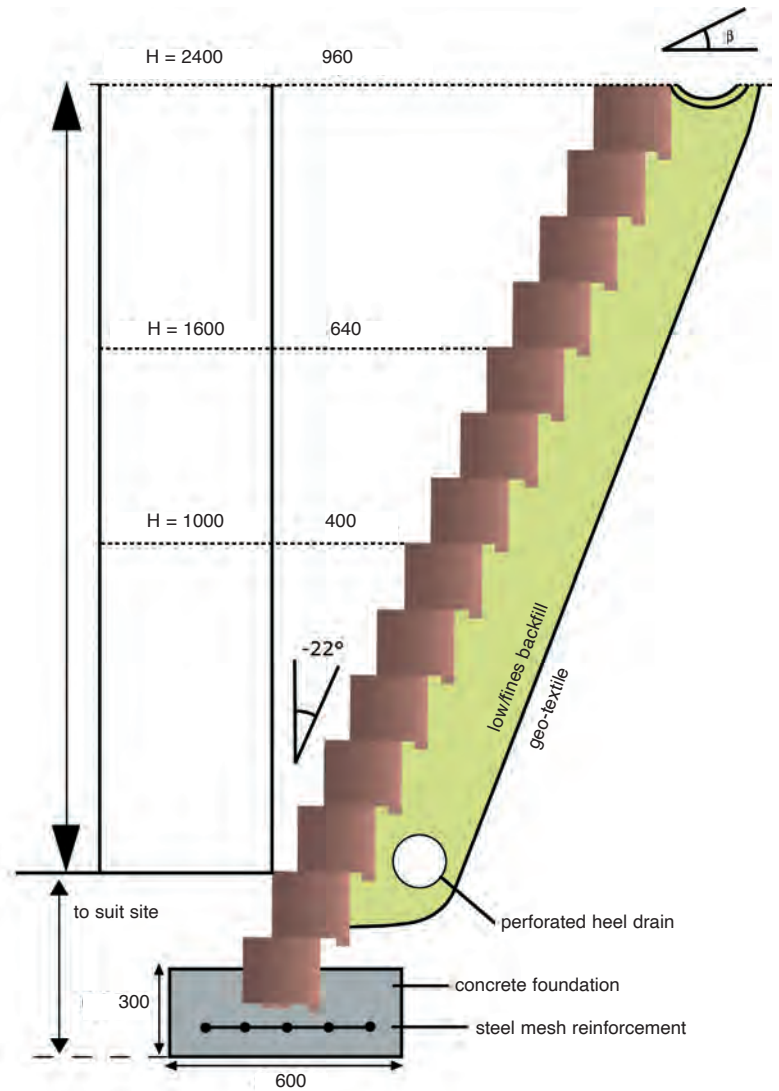
| Internal angle of friction for earth ϕ° | Up slope angle β° | Maximum unit height above ground H |
|--|-----------------------------------|---------------------------------------|
| 35 ⁰ | 0** | 2.40m |
| 35 ⁰ | 20 | 2.00m |
| 30 ⁰ | 0** | 1.80m |
| 30 ⁰ | 20 | 1.20m |

* Subject to confirmation by individual study

** Assumes 2.5kn/m² surcharge



Underside view

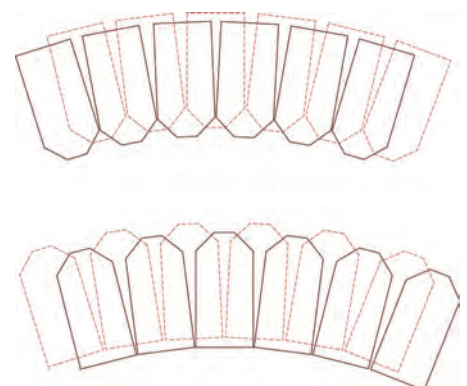
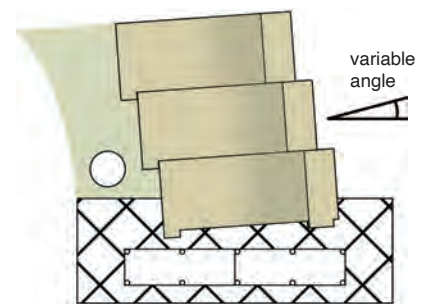
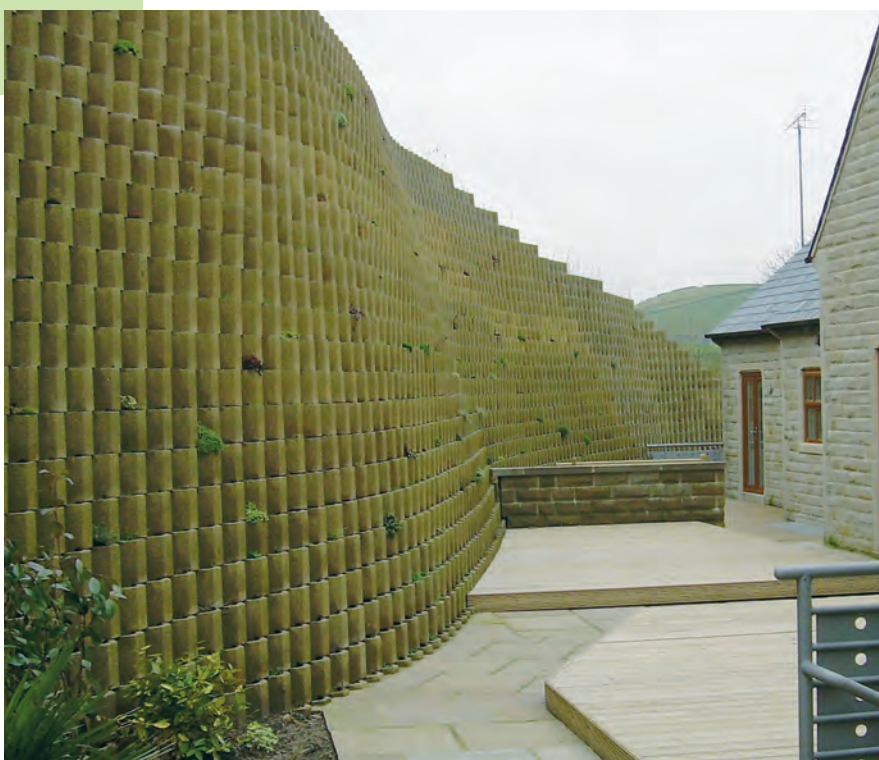


normal applications

- Low height earth retaining walls
- Landscape re-modelling
- Canalisation
- Planters and rockeries
- Traffic calming
- Noise barriers

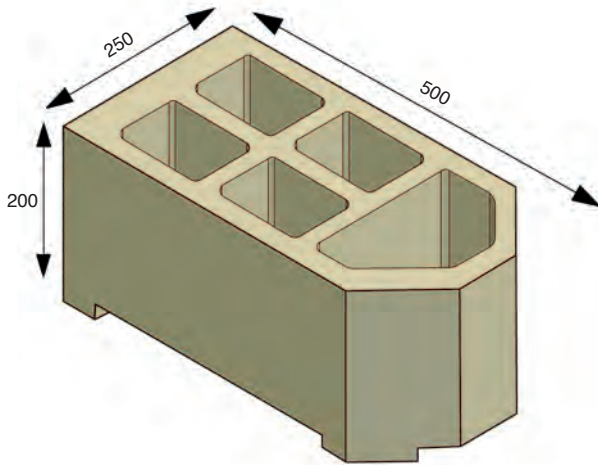
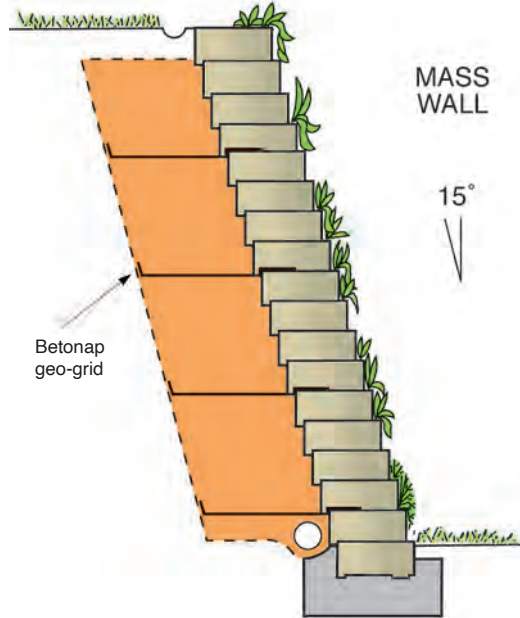
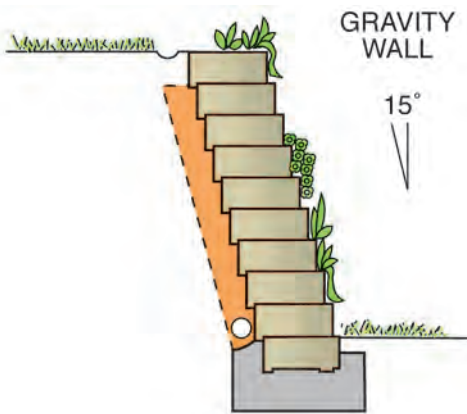
Betoatlas

Whether it is a higher wall or the ability to accept heavy surcharge load **Betoatlas** provides for that need. Constructed either as a simple stem gravity wall or as a component of a **Betonap** geo-grid reinforced mass structure this 500mm wide wall suits the need.



Supply data

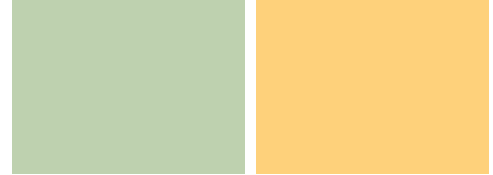
| | |
|-------------------------------|---|
| Weight of empty block: | 25kg approx |
| Weight of earth filled block: | 50kg approx |
| Blocks per m ² : | 20 |
| Construction: | 35mN/m ² @ 28 days pressed concrete |
| Colours: | Natural, Buff, Red |
| Pack size: | 32 blocks |



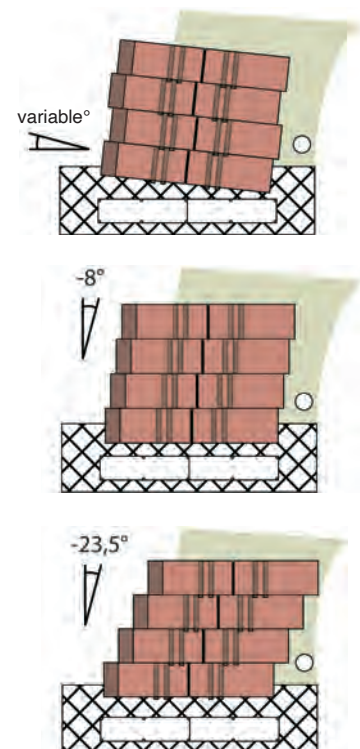
normal applications

- Earth retaining walls up to 10.6m high
- Canalisation
- Noise barriers

Betotitan

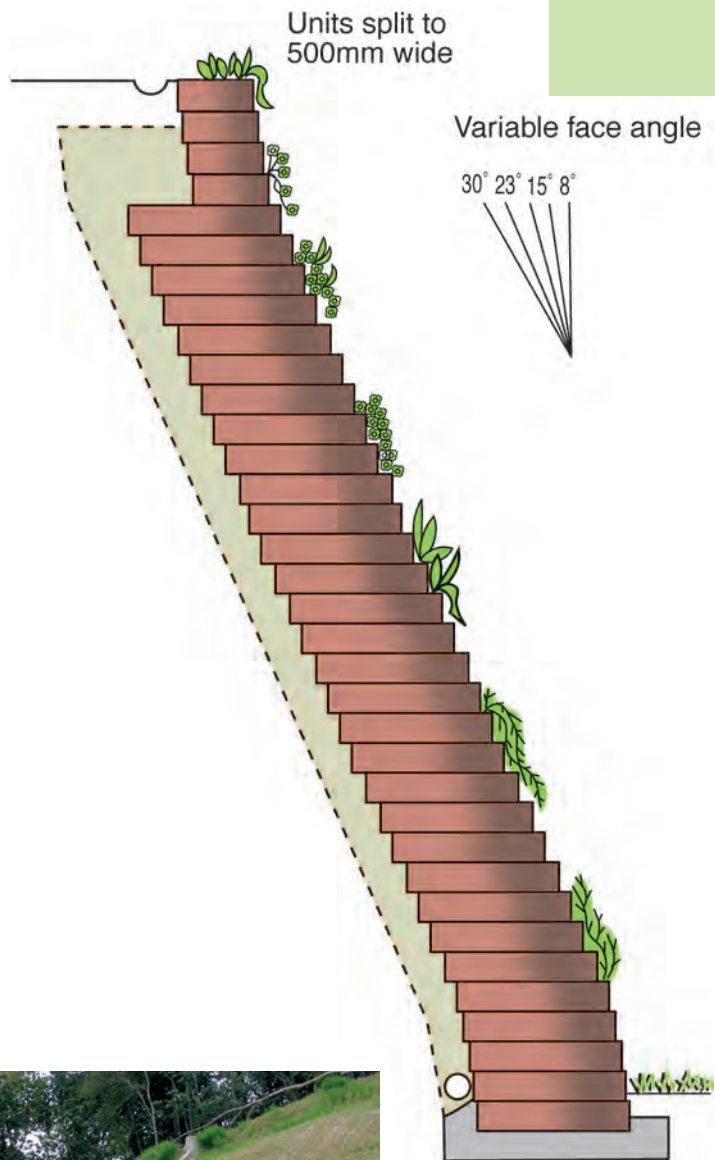
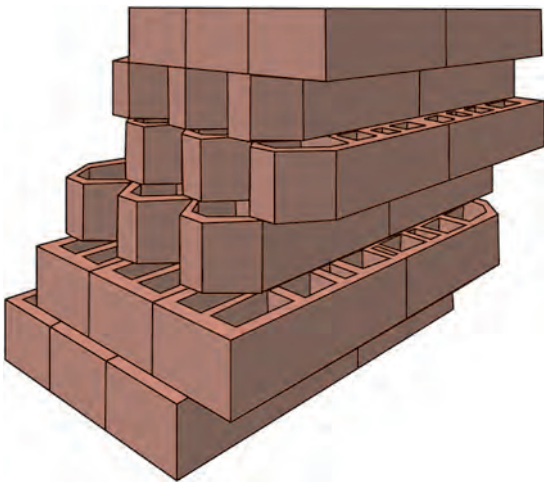
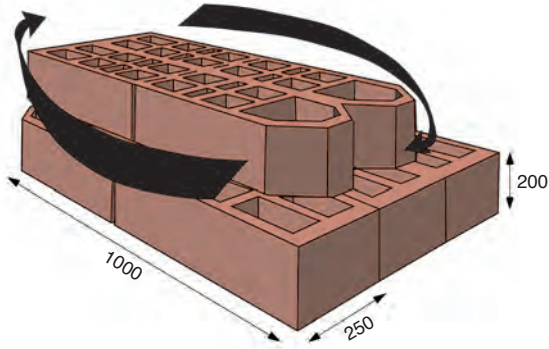


Betotitan offers an impressive solution for extreme needs, with the ability to reach 22m high and offer varying face profiles for feature details.



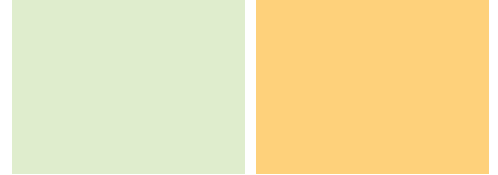
Supply data

| | |
|-------------------------------|---|
| Weight of empty block: | 55kg approx |
| Weight of earth filled block: | 90kg approx |
| Blocks per m ² : | 20 |
| Construction: | 35mN/m ² @ 28 days pressed concrete |
| Colours: | Natural, Buff, Red |
| Pack size: | 24 blocks |

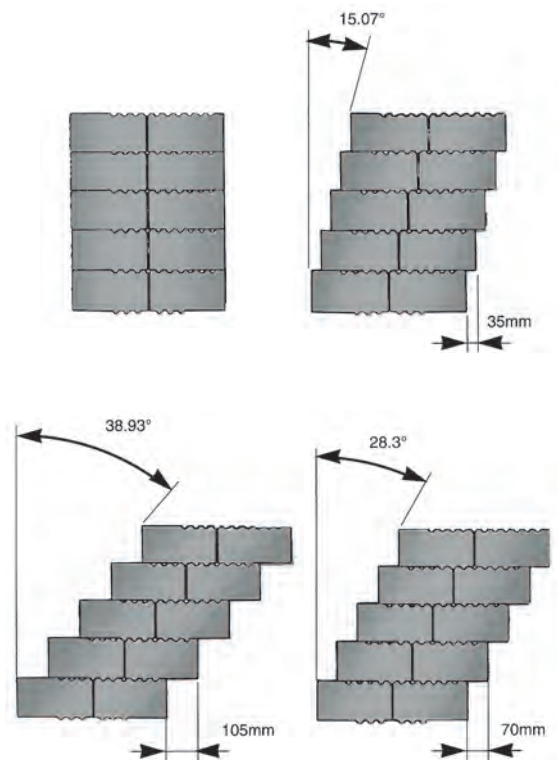
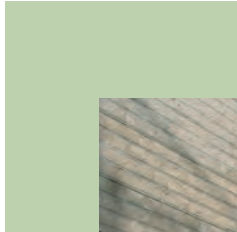
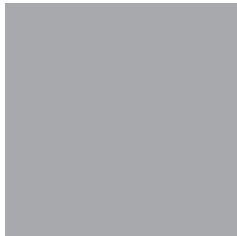


normal applications

- Earth retaining walls up to 20m high
- Variable face geometry

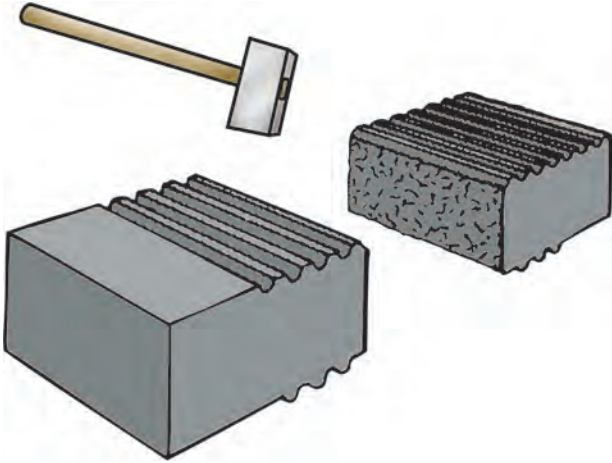


We realise that there will be times when a plantable option is not going to be the preferred choice as a wall finish. For those occasions we are able to continue the theme of a dry-build range with the solid concrete Leromur system; with its split stone riven face it creates a natural aggregate finish.



Supply data

| | |
|--|---|
| Weight of full block, 200 x 1000 x 130.5mm: | 54kg approx |
| Weight of split block, 200 x 500 x 130.5mm: | 27kg approx |
| 200 x 250 x 130.5mm: | 13kg approx |
| Blocks per m ² : | 38.3 |
| Construction: | 35mN/m ² @ 28 days pressed concrete |
| Colours: | Natural, Buff, Red |
| Pack size: | 18 blocks |

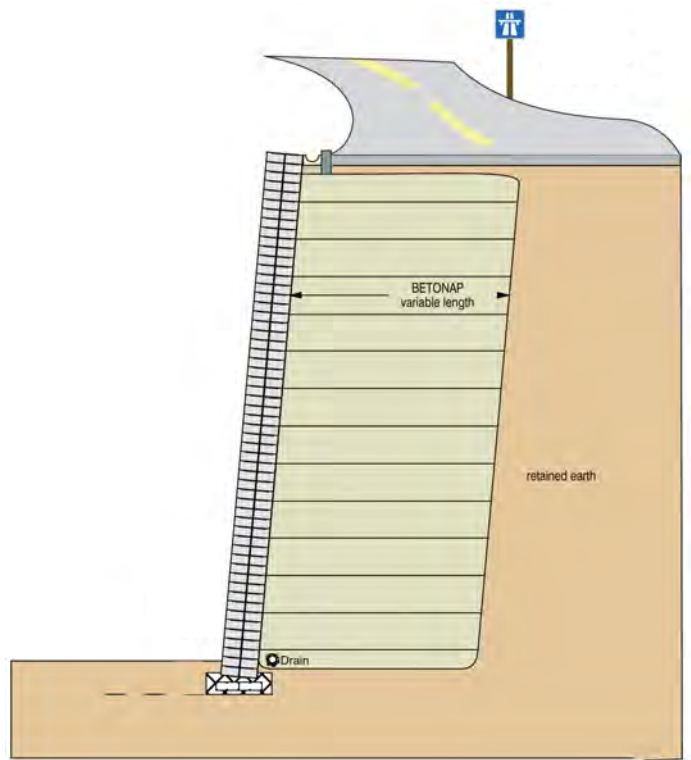


normal applications

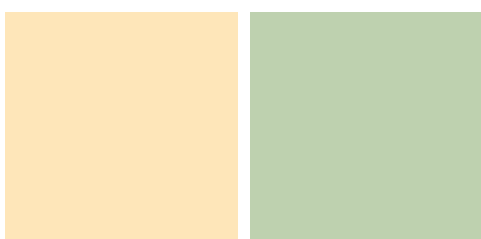
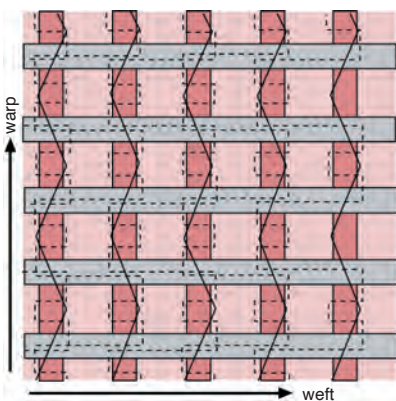
- Earth retaining walls up to 25m high
- Bridge abutments
- Marine walls



Betonap



| Type | Standard | Warp strength | Weft strength | Roll size |
|----------|----------------|---------------|---------------|-------------|
| 100 / 50 | NF EN ISO10319 | 100kN/ml | 50kN/ml | 5.30 x 100m |
| 150 / 50 | NF EN ISO10319 | 150kN/ml | 50kN/ml | 5.30 x 100m |
| 200 / 50 | NF EN ISO10319 | 200kN/ml | 50kN/ml | 5.30 x 100m |



Betoconcept by design

Meeting the varying demands of earth retaining wall design we are able to provide a bespoke cross-sectional design service using the **Betocalcul** software system. This system undertakes a structural wedge analysis, compliant to Eurocode 7, that is adapted to consider the properties of flexible stem walls.

The dry-build **Betoconcept** components each offer flexibility that significantly extends the limit state design enabling structures to maintain integrity in areas prone to settlement.

The **Betocalcul** design service is provided with an insured 10 year warranty.

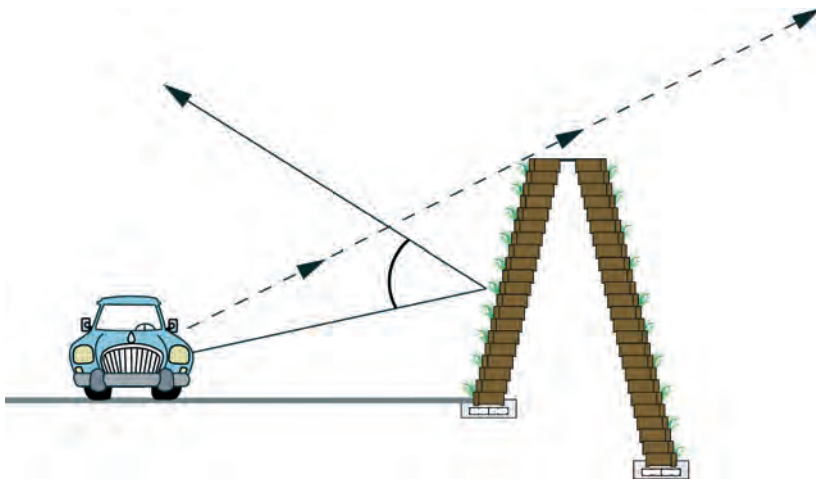
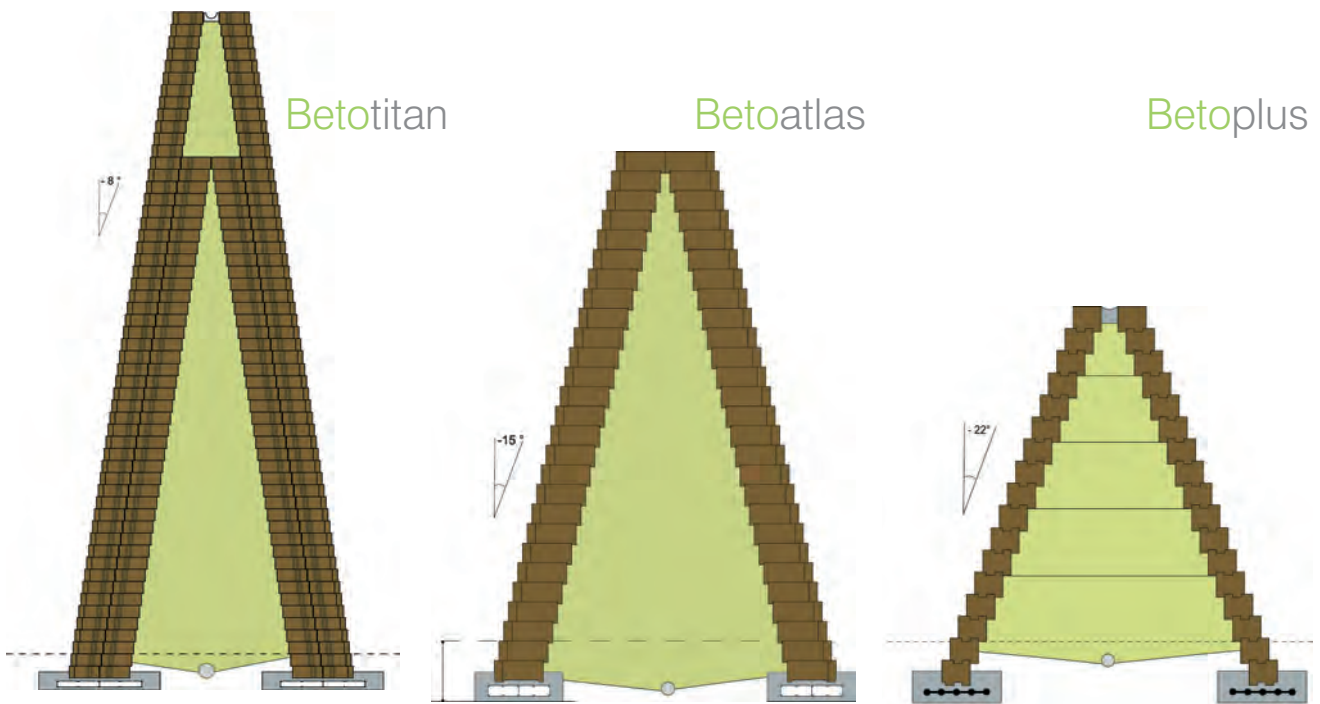
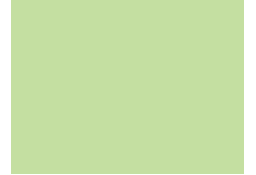
Betoconcept by supply ...or install

The choice is yours; **Betoconcept** units are provided in full pack quantities delivered direct to site, or alternatively our own contracts division can provide a supply and lay service.

Betoconcept is supplied in Great Britain by Grass Concrete Limited under exclusive manufacturing licence.



Betoconcept noise barriers



The plantable systems **Betoplus**, **Betoatlas** and **Betotitan** can each be utilised to construct noise barriers. In addition to high noise absorption values the profiled face of each unit diffuses the deflected sound.

For further information on individual studies please contact us.

Betoconcept flora

suggested perennials

| COMMON NAME | LATIN NAME | FLOWERING | ASPECT |
|---------------------|------------------------------------|------------|--------|
| ALYSSUM | Alyssum Montanum | March-May | ○ |
| WINDFLOWER | Anemone baldenis | May | ○ |
| COLUMBINE | Aquilegia vulgaris | May-June | ○ ● |
| ARABIS | Arabis rosea grandiflora | May-July | ○ ● |
| ASTILBE | Astilbe x arendsii | June-Aug | ○ ● |
| AUBRETIA | Aubretia deltoidea | March-June | ○ |
| BELLFLOWER | Campanula corpatica/cochlearifolia | June-Aug | ○ |
| SNOW IN SUMMER | Cerastrum Tomentosum | June-Aug | ○ |
| CYCLAMEN | Cyclamen neopolitanum | Sept-Oct | ○ |
| DIANTHUS | Dianthus Allwoodii/Alpimus | June-Sept | ○ |
| CRANESBILL | Geranium dalmaticum/sanquineum | June-Sept | ○ ● |
| BABY'S BREATH | Gypsophila repens | July-Aug | ○ |
| ROCK ROSE | Helianthemem Alpestre | July-Sept | ○ |
| PERENNIAL CANDYTUFT | Iberis sempervilens | May-July | ○ |
| LITHOSPERMUM | Lithospermum diffusum | June-Sept | ○ |
| PENSTEMON ALPINE | Penstemon scouleri | June-July | ○ ● |
| PHLOX ALPINE | Phlox adsurgens/subulata | April-June | ○ |
| ROCK CINQUEFOIL | Potentilla nitida | July-Aug | ○ |
| PASQUE FLOWER | Pulsatilla sulpherea/vulgaris | April-May | ○ |
| RAMONDA | Ramonda myconi/pyrenaica | May-June | ● ● |
| SOAPWORTS | Sapornaria ocyroides | July-Sept | ○ |
| SAXIFRAGE | Saxifrage hypnoides/longifolia | June | ○ ● |
| SEDUM | Sedum acre/cauticolom | June-Sept | ○ |
| HOUSELEEK | Sempervivum tectorum | June-July | ○ |
| MOSS CAMPION | Silene nana compacta/shafta | May-June | ○ ● |
| THYME | Thymus serpyllum/vulgaris | June-Aug | ○ |
| SPEEDWELL | Veronia prostrata | May-July | ○ |

shrubs and climbers

| | | |
|-------------|---|--|
| BERBERIS |) | |
| BRUNNERA |) | |
| CAMELLIA |) | |
| CLEMATIS |) | Various species; select those specifically suited to rock/walls in desired aspect. |
| CONVOLVULUS |) | |
| COTONEASTER |) | |
| IVY |) | |
| ROSE |) | |
| WISTERIA |) | |

wild flora

A guide to suitable wild flora seed mixes is available on request.
Please note that the correct bedding medium will vary throughout the range of plants.
The type of compost etc. should therefore be individually selected.



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Please note that information is given in good faith, without warranty and subject to alteration without prior notice.

A full range of brochures and technical guides is available upon request

