

# TERRAFORCE®

VERSATILE LANDSCAPE RETAINING WALL SYSTEM



## L13 THE LIVING WALL



View more benefits, features and case studies on: [www.terraforce.com](http://www.terraforce.com)



LIGHT GRAVITY RETAINING WITH STEPS, ROUND FACE FINISH



STABILISING OF BEACHFRONT - COMPLETE PLANT COVER



HEAVY GRAVITY WALL RETAINING, PLANT SUPPORTIVE



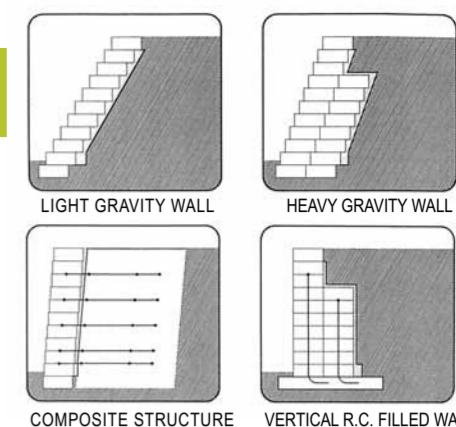
COMPOSITE WALLS IN ROUND FACE FINISH



9M HIGH COMPOSITE WALL AT COMMERCIAL SITE



WALL AND STEPS, SMOOTH FACE FINISH



### PLANNING ALTERNATIVES

Terraforce offers unequalled design options to cope with most site conditions.



### WHY TERRAFORCE?

**A LIVING WALL:** The unique design allows you to make plants part of your wall.  
**DURABILITY:** Concrete will not rot and weaken over time, and no chemical preservatives are required.  
**MORTARLESS INTERLOCKING SYSTEM:** The units are simply stacked up without mortar to provide a cost effective, do-it-yourself system.  
**LAYOUT FLEXIBILITY:** The half moon interlock gently handles convex and concave curves, and the wall angle can vary from vertical to shallow slopes. Create steps by reversing the block.  
**COLOURS & TEXTURES:** Round or flat face for wall front. Consult your Local Supplier about available colours.

### BRIEF INSTALLATION GUIDELINES

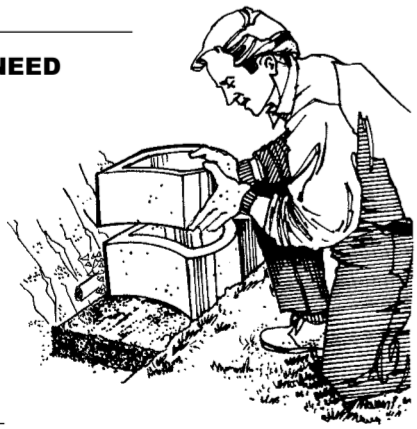
Develop a precise plan for your Terraforce wall by analyzing your site, noting slopes, drainage and shape of wall. Measure the length and vertical height to obtain the surface area and thus the number of units required. **Remember that retaining walls require professional design / supervision input and must comply with local building regulations. Refer to Terraforce design and installation manuals.**

1. Prepare a level foundation, gravel or concrete as directed by site conditions. Compacted gravel foundations are usually sufficient for structures not higher than (1) one meter. On sloping sites the foundation may be stepped by block height at intervals to suit the slope.
2. Place first row of blocks to required alignment and ensure that the units are level in all directions. A small amount of mortar will assist with accurate levelling on a concrete foundation. **Note:** Stretcher bond is preferred but not always possible. Stack bond is allowed.
3. Install drainage pipe with outlet and free draining backfill as specified behind first row of blocks. A length of flexible pipe will assist in setting out smooth curves.

### TOOLS YOU MAY NEED

- Pick
- Shovel or spade
- Line and level
- Trowel
- and occasionally a disc cutter.

Your supplier will recommend a qualified installer for that professional finish.



4. Fill blocks with good quality soil or soil compost mix and tamp lightly. In this instance the round face elevation was chosen.
5. Continue construction, row by row while backfilling and compacting free draining material as each row is completed with topsoil infill. In situ or precast interlocking keys to be installed when directed by the engineer.
6. When specified, install geogrid-geofabric on compacted backfill and wedged between blocks (or cut and folded into blocks) as indicated by the engineer.
7. Terraced walls must also be well founded.
8. The completed installation can now be turned into a growing investment by your imaginative choice of plants.

### MAXIMUM WALL HEIGHTS (IN BLOCK HEIGHT, METRES) AND SETBACK CHART FOR THE TERRAFORCE L13 BLOCK RETAINING WALL SYSTEM

RETAINED SOIL	BACKSLOPE ABOVE CREST OF RETAINING WALL	WALL INCLINATION FROM HORIZONTAL								inclination in degrees mm setback inches setback
		60°	65°	70°	75°	80°	85°	90°		
FIRM CLAY & COMPACT SILT 30° INT. FRICTION ANGLE	0°	130	105	82	60	40	20	0.0	0.0	L13 blocks metres feet
	10°	5.1	4.1	3.2	2.4	1.6	0.8	0.0	0.0	L13 blocks metres feet
	22°	12.2	8.9	6.1	4.4	3.4	2.6	1.9	1.39	L13 blocks metres feet
SILTY SAND & SAND 36° INT. FRICTION ANGLE	0°	28.3	21.2	16.0	12.1	9.2	7.3	5.6	4.17	L13 blocks metres feet
	10°	25.2	18.5	13.5	9.9	7.8	6.0	4.5	3.33	L13 blocks metres feet
	22°	21.4	14.4	10.4	7.7	5.8	4.3	3.4	2.50	L13 blocks metres feet

1. Wall height measured from top of foundation / leveling pad.
2. Top of foundation / leveling pad a minimum of 150mm / 0.5 ft below ground level.
3. No allowance made for surcharge above wall.
4. Factors of safety for shear and overturning = 1.5

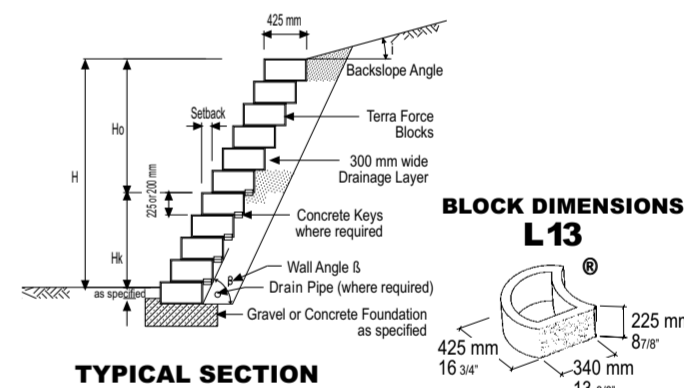
1. These Terraforce Design Charts give an indication of internal gravity retaining wall stability only and are intended for conceptual design and estimation purposes alone. They do not take into account external and overall slope stability or boundary conditions such as the presence of groundwater.

2. Users of Terraforce walls should seek the advice of a professional geotechnical and/or civil engineer for the assessment of appropriate site and soil parameters. Terraforce cannot accept responsibility for the actual design or construction of a wall unless otherwise agreed.

3. Copies of design manuals / software, case studies and test results are available on request. Contact your local nursery for advice on suitable plants.

Please consult our website at [www.terraforce.com](http://www.terraforce.com)  
Copyright Terraforce 2006

**Note:** The above tables indicate the total allowable height when walls are to be constructed without vertical interlocking keys.

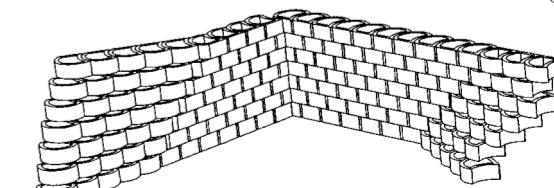
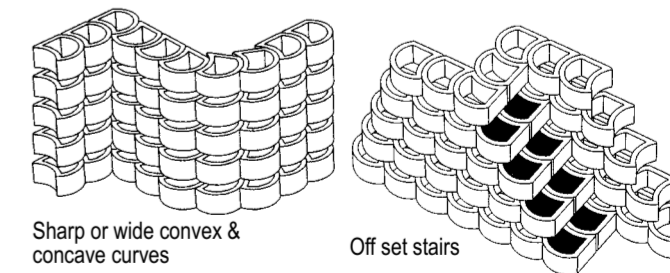


### TYPICAL SECTION

	UNITS PER m <sup>2</sup> /(ft <sup>2</sup> )*	BLOCK MASS kg/(lb)	BLOCK INFILL VOLUME m <sup>3</sup> /(ft <sup>3</sup> )*	MASS OF WALL INCL. SOIL kg/m <sup>2</sup> (lb/ft <sup>2</sup> )
METRIC	13/(14.5)*	32/(27)*	0.0018/(0.016)*	750
IMPERIAL	1.2/(1.3)*	70(60)*	0.46(0.56)*	152

Wall Angle β	50°	55°	60°	65°	70°	75°	80°	85°
Setback mm	189	158	130	105	82	60	40	20
	*168	140	115	93	73	54	35	17

**Wall Details and Setback Chart** • allow for small variations  
\*Block height is 200 mm in some areas



Merge seamlessly from vertical to inclined wall

**Some construction details.**  
More details in the comprehensive Terraforce Construction Manual.