

Guidelines

# Interbloc™ Unreinforced Tie Back Wall

The inherent flexibility of the Interbloc™ system mean there are many ways to engineer a wall depending on the unique requirements of a given project. The following info sheet provides information and design guides for an Interbloc™ Unreinforced Tie Back Wall. The information contained in this sheet is designed first and foremost to be demonstrative of the capabilities of Interbloc™ walls. Each project will require specific design work by a suitably qualified professional.

## Interbloc™ Unreinforced Tie Back Wall

Interbloc™ Unreinforced Tie Back Walls extend the benefits of Gravity only walls by further increasing the resistance of gravity walls to overturning. It achieves this without using a vertical reinforcing element. Interbloc™ Unreinforced Tie Back Walls make use synthetic matting cast into the blocks which, at the time of installation, is connected to corresponding matting extending back into the wall backfill. It makes use of a structural anchorage of the upper level of the wall back into the backfill material in retaining wall applications. These tie back elements reduce the tendency for wall over turning and help reduce the demand on the foundation element.

These walls are usually only used in non-critical applications where some wall movement can be allowed, such as low level landscaping walls, slope rehabilitation, edges to rural access routes etc. It is most common for such walls to be constructed with an angled face where the walls are “leant” back into the retained material.

*“Modular construction systems provide efficiencies in construction that cannot be achieved in traditional site based build processes. The modular Interbloc™ unit provides the flexibility of bricks and the speed of precast construction – a formidable combination in its area of use..”*

**Blueprint Consulting Engineers 2012**

The following table provides a guide on the footing requirements and corresponding load capacities of an Interbloc™ Unreinforced Tie Back Wall.

Earth Pressures                      Ka  
 No Seismic Loads  
 Good Ground                          Conditions  
 Backfill Density                      18kN/m<sup>3</sup>  
 Backfill Friction Angle              30 degrees  
 Backfill Slope                        0 degrees  
 Friction Angle                         30 degrees  
 Wall Friction Included                20 degrees

Surcharge	Wall Angle (Slope into Retaining)	Level Backfill							
		Block Inclined Height							Ka
		1200	1800	2400	3000	3600	4200		
0 kPa	0 deg	Footing W	700	700	700	750	900	1100	0.3
		D	150	200	250	250	250	250	
		L	50	50	50	75	150	250	
		Tie Back	3.6	6.5	10	14.5	20	26	
	5 deg	Footing W	700	700	700	750	750	750	0.26
		D	150	200	250	250	250	250	
		L	50	50	50	75	75	75	
		Tie Back	3	5.5	8.5	12.5	17.5	23	
5 kPa	0 deg	Footing W	700	700	700	750	900	1200	0.3
		D	150	200	250	250	250	250	
		L	50	50	50	75	150	300	
		Tie Back	6.3	9	13	18	24	31	
	5deg	Footing W	700	700	700	750	750	800	0.26
		D	150	200	200	250	250	250	
		L	50	50	50	75	75	100	
		Tie Back	5.2	8	11.5	16	21.5	27	
10kPa	0 deg	Footing W	700	700	700	800	900	1100	0.3
		D	150	200	200	250	250	250	
		L	50	50	50	200	150	300	
		Tie Back (kN)	9	12	16.5	22	29	36	
	5 deg	Footing W	700	700	700	750	750	800	0.26
		D	150	200	200	250	250	250	
		L	50	50	50	75	75	100	
		Tie Back	7.5	10.5	14.5	19.5	25.5	32	

