Foundation Piles

Duraspun® Concrete Piles

Rocla Duraspun® foundation piles are manufactured from high-density concrete, either reinforced or pre-stressed. The centrifugal spinning process produces concrete of high strength and durability. The annular cross-section makes Duraspun® concrete piles lighter and more economical than cast concrete piles of equivalent bending strength.

Duraspun® piles are suitable for all ground conditions and are designed for driven and potted applications. A wide range of strength types and lengths is available.

Jointing

Rapid jointing of pile sections can be achieved using the New Millennium jointing system, which allows the connection of pile sections in minutes without the need for special tools or welding equipment.

Contact Rocla Concrete Poles for more information

Duraspun® Concrete Piles – Standard strengths

Pile Shear Strength & Stiffness								
Pile Type Diameter		Wall Thickness (mm)	Outside Diameter (mm)	Internal Diameter (mm)*	Shear Strength**			Stiffness (EI) ($N.mm^2 \times 10^{12}$)
					ULDS (kN)	LLDS (kN)	LMS (m)	
400mm	1	70	400	260	130	185	1.5	45
	2	70	400	260	130	185	1.5	45
	3	90	400	220	150	200	1.5	50
	4	75	400	250	135	190	2.0	50
	5	90	400	220	150	200	2.0	50
	6	100	400	200	160	210	2.5	55
450mm	1	70	450	310	155	210	1.5	70
	2	70	450	310	155	210	1.5	70
	3	90	450	270	180	240	1.5	75
	4	70	450	310	155	210	2.0	80
	5	75	450	300	160	220	2.5	75
	6	90	450	270	180	240	3.0	85
	7	100	450	250	190	250	3.5	95
585mm	1	70	585	445	220	300	1.5	170
	2	70	585	445	220	300	2.0	175
	3	70	585	445	220	300	3.0	180
	4	80	585	425	240	320	3.5	200
	5	80	585	425	240	320	4.0	205
	6	90	585	405	250	340	4.0	225
	7	90	585	405	250	340	4.5	235
	8	95	585	395	260	350	5.0	250

*Notes: *Maximum internal diameter. Wall thickness may be greater than quoted.*
***Design shear strength = phi x Vu.*
Vu = Shear strength of pile based on Rocla in-house design.The shear strength values LLDS and LMS apply only to potted piles. For driven piles,the ULDS value applies over the entire length of the pile.
***LMS** = Length of maximum shear*
***ULDS** = Upper level design shear strength.Applies over the upper portion of the pile,or L – LMS (where L = length of pile).*
***LLDS** = Lower level design shear strength.Applies over the bottom length of maximum shear (LMS) of a pile. If the pile length is less than LMS +3m,the LLDS value will be valid for the full length of the pile.*
The shear reinforcement extends 1.0m beyond the length LMS to ensure that the shear load acts within the strengthened area (allows for a pile diameter beyond the support point).

Marine Piles

Duraspun® Marine Piles

Rocla Duraspun® marine piles are suitable for use in floating marinas and are designed primarily as cantilever elements with bending strengths typically increasing from the head of the pile to the toe. They are also suitable for jetties and structural applications.

The centrifugally spun manufacturing process produces a hollow, circular section of high density reinforced or pre-stressed concrete, resulting in a pile that is lighter and more economical for a given length and purpose than solid cast concrete piles of the same length and strength.

A large range of bending strengths is available, from 125 kNm up to 1200 kNm, as well as a range of fittings that allows the piles to be easily incorporated into fixed structural walkways, ramps and jetties.

Installation options

Duraspun® marine piles can be installed by driving, potting or jetting.

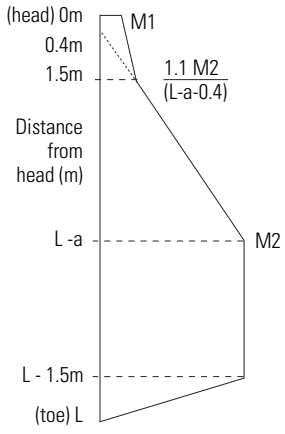
Contact Rocla Concrete Poles for more information

Duraspun® Marine Piles – Product range

Marine Piles – Bending Moment and Shear Force

Pile Type Dia/Strength (mm/kNm)	Pile Length (m)	Dimensions (m) L = Pile length		Bending Moment Strength (kNm)		Shear Strength (kNm)	
		a	b	M1	M2	S1	S2
285/100	6.0-12.0	L/2	2.0	40	100	80	120
350/10	6.0-12.0	L/2	2.5	40	150	100	150
400/175	8.0-12.5	L/2	n/a	50	175	140	140
	13.0-18.0	6.0	n/a	50	175	140	140
400/275	8.0-13.5	L/2	2.5	50	275	140	190
	14.0-24.0	7.0	2.5	50	275	140	190
400/375	8.0-13.5	L/2	3.0	50	375	160	220
	14.0-24.0	7.0	3.0	50	375	160	220
450/275	8.0-13.5	L/2	n/a	50	275	170	170
	14.0-24.0	7.0	n/a	50	275	170	170
450/425	8.0-13.5	L/2	3.5	50	425	170	220
	14.0-24.0	7.0	3.5	50	425	170	220
450/525	8.0-13.5	L/2	3.5	50	525	200	260
	14.0-24.0	7.0	3.5	50	525	200	260
585/750	8.0-15.5	L/2	4.0	150	750	250	380
	16.0-24.0	8.0	4.0	150	750	250	380
585/950	8.0-15.5	L/2	5.0	150	950	250	380
	16.0-24.0	8.0	5.0	150	950	250	380
585/1200	8.0-15.5	L/2	5.5	150	1200	270	400
	16.0-24.0	8.0	5.5	150	1200	270	400

Bending Moment Strength Mu



Shear Strength Vu