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Soil Anchors

The keystone to the system is the Ground Anchor. These anchors take advantage of some basic principles of soil mechanics and do not require any concreting. They are simply hammered into the ground and are then "locked" into position by putting them under tension. The 2 most important factors to determine the best anchor for use are "the safe working load required to be held" and "soil conditions". Anchors range in size from 500kgs upwards - for example our standard "tie down kit" using a K20 Cast Iron Anchor achieves 2 tonne per anchor point. They are available in aluminium (softer soils); Anodised Aluminium or Cast Iron.

Hundreds of thousands of anchoring systems have been installed worldwide in an increasing range of applications. Some of these applications include:-

- Soil Nailing**
- Retaining Wall Support**
- Gabion Support**
- Sheet Pile Retention**
- Pipeline Buoyancy**
- Rock Stabilisation**
- Bridge Repair**

- Guyed Structure Tie Down**
- Tree Support (Root Ball Kits & Guy systems)
- Temporary Shelter Tie Down**
- Caravan, Portable Building & Scaffolding
- Security/Tie Down**
- Park benches, rubbish bins, light aeroplanes, boats & equipment

The anchoring system is well proven in the field of Civil Engineering, Utility Services, Tree Anchoring and tie-downs as a lightweight, cost effective alternative to traditional techniques.



Tree Anchoring



Electrical Utility



Slope Stabilization



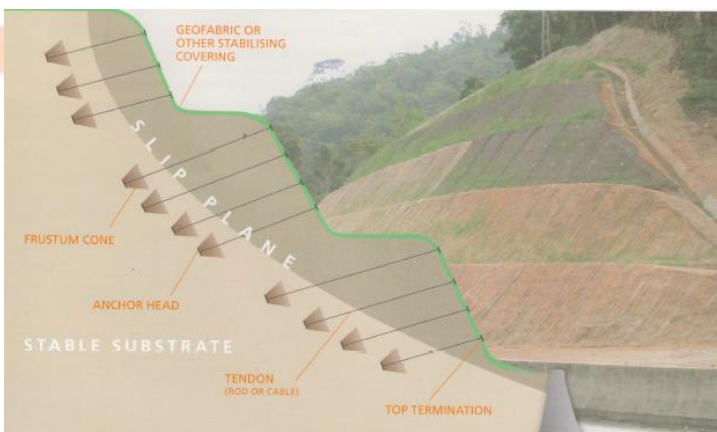
ANCHOR LOAD CAPACITY

Anchors are available in a multitude of dimensions suited to take loads from 10kN up to 300kN. The exact capabilities of the anchor will depend at all times on the particular soil characteristics and the anchor placement depth. The quality and consistency of the soil can affect the typical load range of an anchor considerably, e.g.:

- In a cohesive soil (poor soil for the anchors) the full driven depth shown in the table above might be required to achieve the lowest typical load shown in the table.
- In a non-cohesive soil (good for the anchors) the shortest driven depth might achieve the highest typical load.

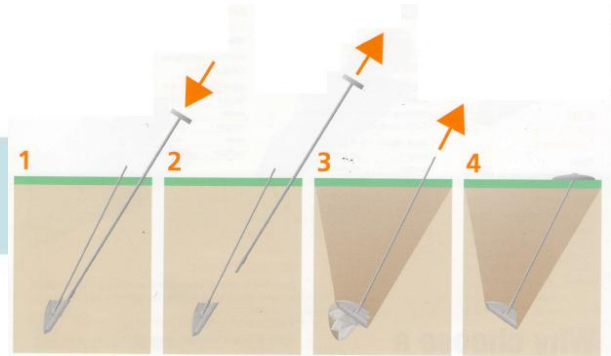
The holding capacity of an anchor system ultimately depends on a number of factors, including the anchor type, the depth of installation and the characteristics of the soil into which it is installed. In brief, significant project cost savings (in terms of time and money) can be expected as a result of a number of factors including:

- Anchoring systems can be designed and tailor-made to meet your unique applications and projects
- Speed of installation for time-critical projects results in significant cost savings in terms of materials and labour in comparison to conventional systems
- Significantly less intrusion onto adjoining sites and no environmental damage due to no drilling or coring of soil prior to installation meaning minimal set-up time is required before work commences
- A simple installation process that does not require high cost specialist staff or equipment
- Anchors are environmentally friendly – no soil is removed, and there is no need for the use of water or grout.



portable tools facilitates travel within and between sites – a relatively large number of anchors can be installed by a small crew over a comparatively short period of time

- Facility to proof test each anchor during installation, providing certainty for project managers as well as obviating the need to waste time/resources testing anchors to verify loads.



The following technical data will provide the information for you to determine the correct anchor for your application and soil type. Our experience has lead us to recommend a Hard Anodised or better, Cast Iron anchor over the standard Aluminium Alloy to ensure penetration in harsh environments (eg mining, heavily compacted soils – if the ground is very hard a pilot hole may be required). The SH20 and K20 are generally the size used which covers loads up to 2tn (depending on depths).

	SH10	SH20	K20
Finish	Aluminium, Anodised Aluminium	Aluminium, Anodised Aluminium	Ductile Iron Galvanised
Holding Capacity	10kN/up to 1000kg Cable Tendons	20kN/Up to 2000kg Cable Tendons	20kN/Up to 2000kg Cable and Rigid Rod, Clevis Tendons
Drive Depth	1-4m	1.5-8m	1.5-8m
Height	33mm	60mm	69mm
Width	38mm	50mm	50mm
Length	110mm	155mm	155mm
Core	40mm	60mm	60mm
Surface	4180 mm ²	7750m ²	7750m ²

*More sizes available upon request – please contact us for more information

Our standard Anchor Kits consist of 1 x anchor head with a 2.5m tendon wire rope x 3 Wire Rope Grips. These kits can be altered to best suit your application.





EESA also stock suitable installation equipment designed for easy installation of your anchors. Drive Steel Rods (as seen to the right) are available for purchase at lengths of 1.5m to be used in softer ground, where penetration required is minimal. Drive Steel Kits are available for weekly hire, and are best suited for light to medium installations, suited for jack hammers, as seen below.

For the best advice on anchor installation, or to have your anchors installed professionally, please contact EESA.

DRIVE ROD SYSTEM

Power Drive Road x 1

Rod sections x 3

Reducing coupler x 1

Shank x 1- threaded end connect to reducing coupler

Couplers x 3 to join rod sections

NOTE: Threads are left hand - couplers must be wound up tight until can be wound no further - this ensures the rod ends are touching - the coupler is simply there to brace the rods together - the rods should be touching inside the coupler