

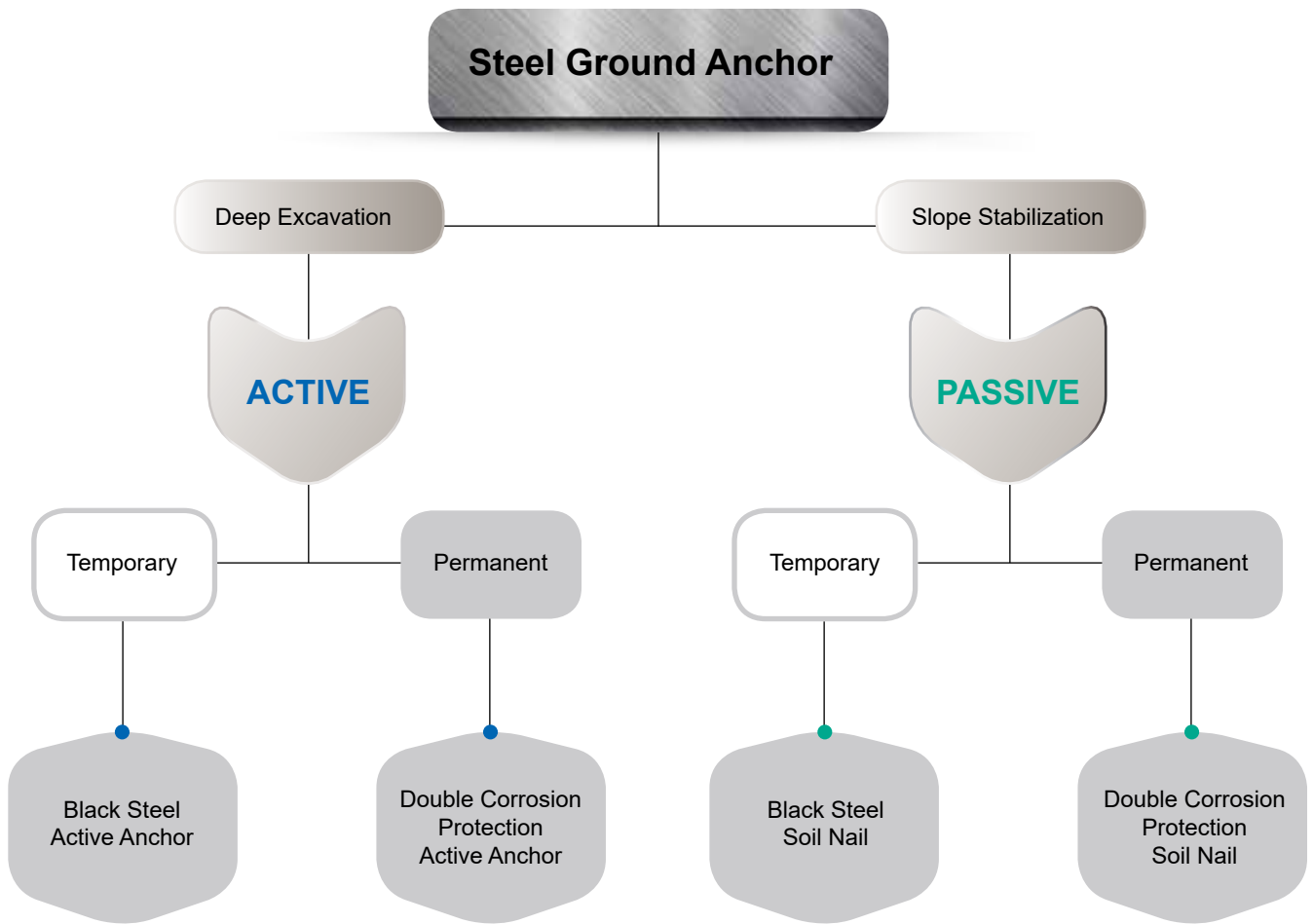
GEOTEC

Steel Ground Anchor

Active/Passive ground anchor system
based on fully threaded bars



Dextra

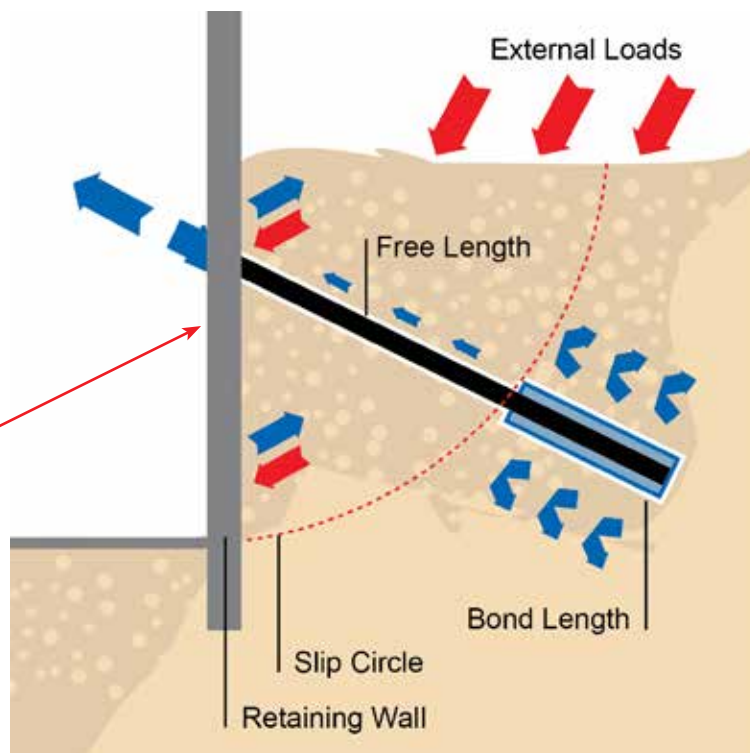
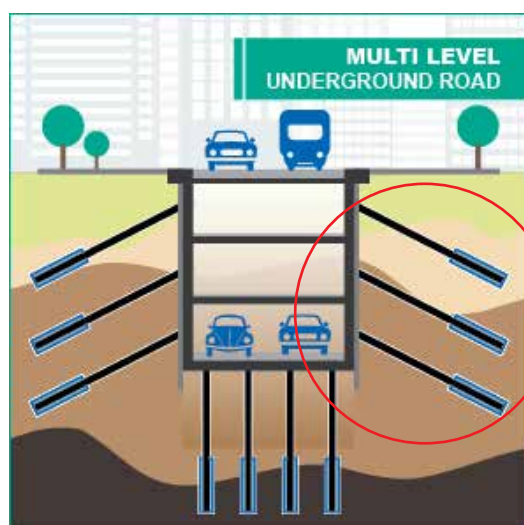


Glossary				
Type	Application	Anchorage	Corrosion protection	Load
Active Anchor	Deep Excavation Stabilization of Structure	Partially Grouted (bond length only)	DCP	Post/pre-tensioned before it takes up the load, which prevents distortion of the structure
Passive Anchor	Slope Protection Stabilisation of landslides	Fully Grouted/bounded (no free length)	DCP	Tension-free at the time of installation is activated when the ground alongside the anchor is deformed
Temporary Application	Anchorage with a design life of less than 2 years (EN1537). No corrosion protection.			
Permanent Application	Anchorage with a design life of more than 2 years (EN1537). DCP required.			
Bonded length	Length of anchor that is bounded to surrounding ground by mean of grout.			
Free length	Length of anchor that is not bounded and therefore free to extend under applied load. If the free length is grouted, a bond-breaker is required.			

Technical Information

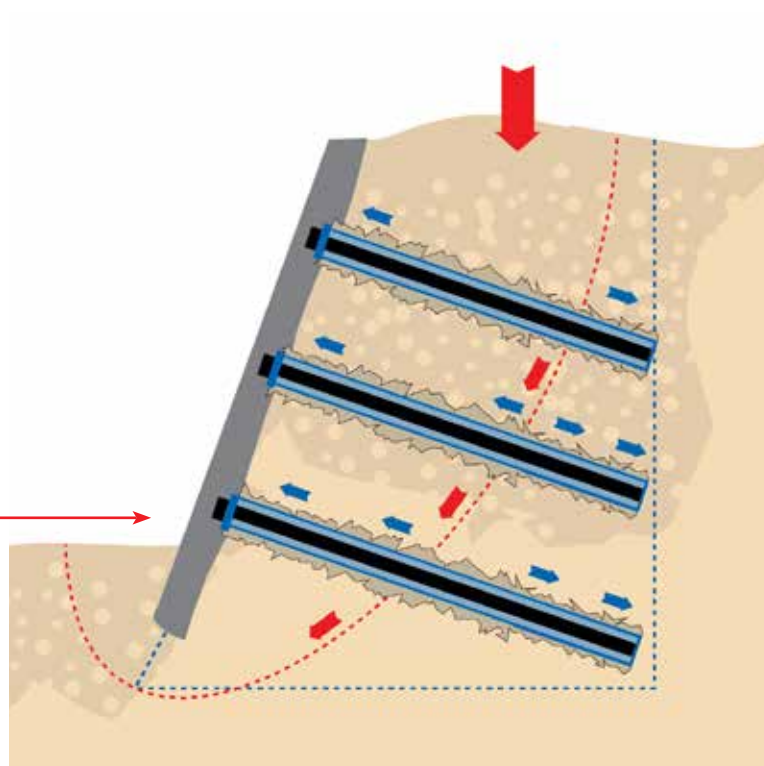
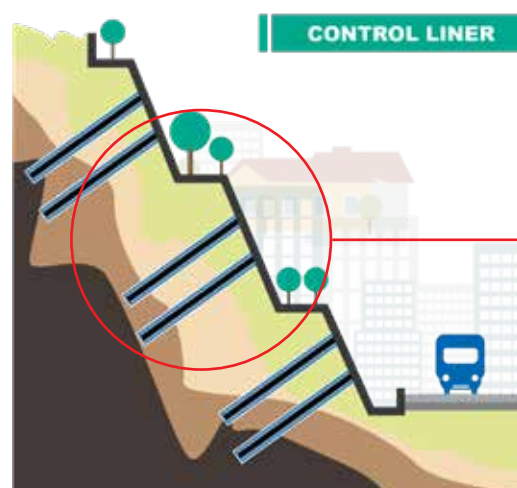
Active Anchor

- Post-tensioning is required to control the movement of the wall during the various construction phases.
- Forces are transmitted to the ground via the bond length.



Passive Anchor

- Should ground displacement happens, the load is transferred to the anchor.
- Post-tensioning is not applied.



Active

About Active Steel Anchor

An Active Anchor is post-tensioned from the external face of the ground immediately after installation and is usually designed to help prevent deformation of the ground or retained structure. It has a free length and a bonded length.

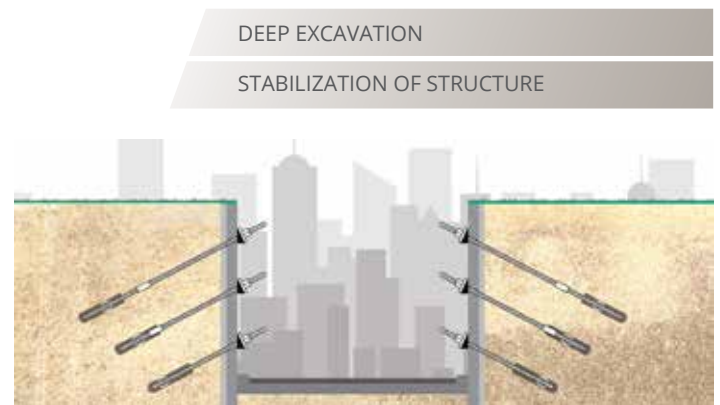
Product features

- **Steel Active Anchors** are the preferred solution for excavation works where post-tensioning is required.
- **Suitable** for any temporary or permanent work as long as tendons do not encroach onto neighboring plots and do not need to be cut or extracted at a later stage.
- **Wide range** based on high-tensile fully threaded bars available in 7 diameters grades and 6 diameters up to 50mm. High steel grades may be preferred to ease handling and reduce the bored hole diameter.
- **Corrosion protection** accessories (DCP) are part of the system and can be supplied by Dextra.

Standards

- BS EN 1997 (Eurocode 7)
- BS EN 1537
- BS 8081

Steel Active Anchor Application



System Diagram

Black Steel (No Protection)

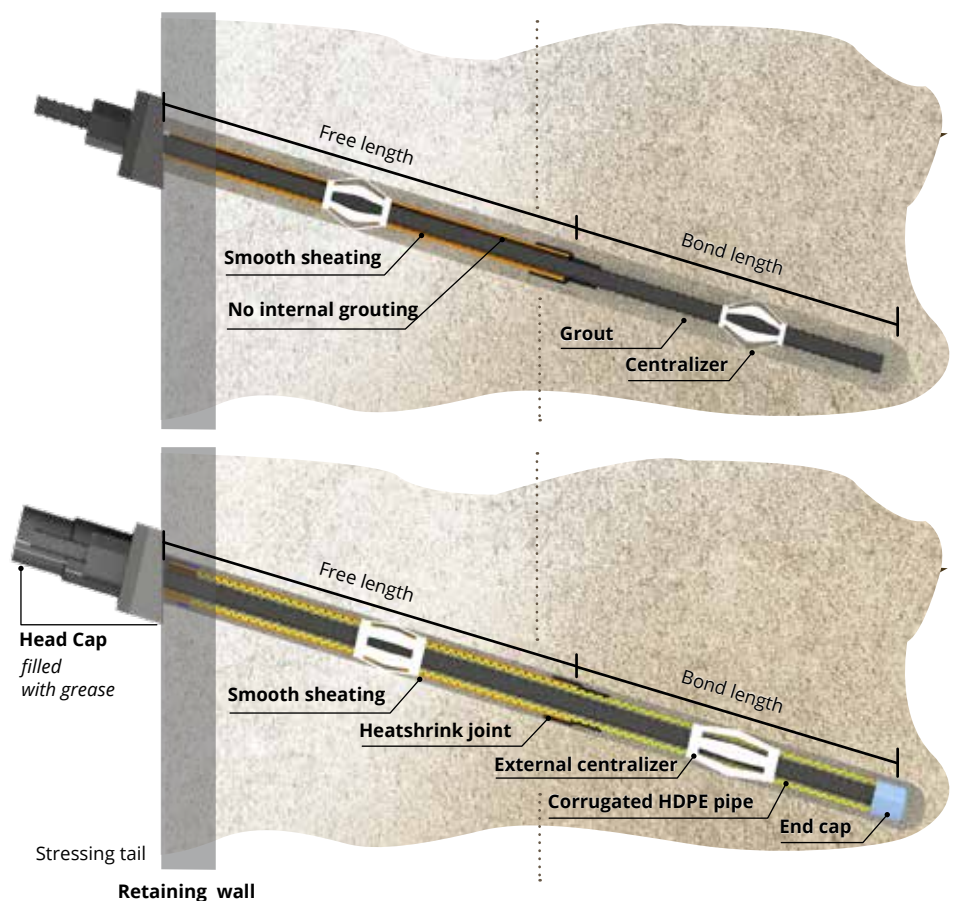
is achieved by 1 layer of grout all along the whole length of the system

- **Bonded length** protection is achieved thanks to the fully threaded bar ribs together with a single layer of grout between the bar and the bored hole.
- **Unbonded length** protection is achieved by covering the fully threaded bar with a smooth HDPE sheathing.

Double Corrosion Protection (DCP)

DCP is achieved by 2 layers of grout all along the whole length of the system.

- **Bonded length** protection is achieved thanks to the dual grout layers separated by a corrugated HDPE sheathing.
- **Unbonded length** protection is guaranteed by the use of smooth HDPE pipe above the corrugated HDPE sheathing.
- **Protective head cap** and **end cap** complement the corrosion protection system.



Passive

About Passive Steel Anchor

A Passive Anchor is not pre-tensioned. Applied loads are transmitted from the ground or ground structure directly. A passive anchor does not usually have a free (unbonded) length of tendon.

Product features

- **Steel Soil-Nails**, also called Passive Anchors, are the preferred solution for slope stabilization. The system is bonded all along the whole tendon length. The head of the system will usually be covered by a wire mesh and shotcrete layer after installation.
- **Suitable** for any temporary or permanent work as long as tendons do not encroach onto neighboring plots and do not need to be cut or extracted at a later stage.
- **Wide range** based on high-tensile fully threaded bars available in 7 diameters grades and 6 diameters up to 50mm. High steel grades may be preferred to ease handling and reduce the bored hole diameter.
- **Corrosion protection** accessories (DCP) are part of the system and can be supplied by Dextra.

Standards

- FHWA-IF-03-017
- FHWA-SA-96-069
- HK GEOGUIDE 7

Steel Passive Anchor Application

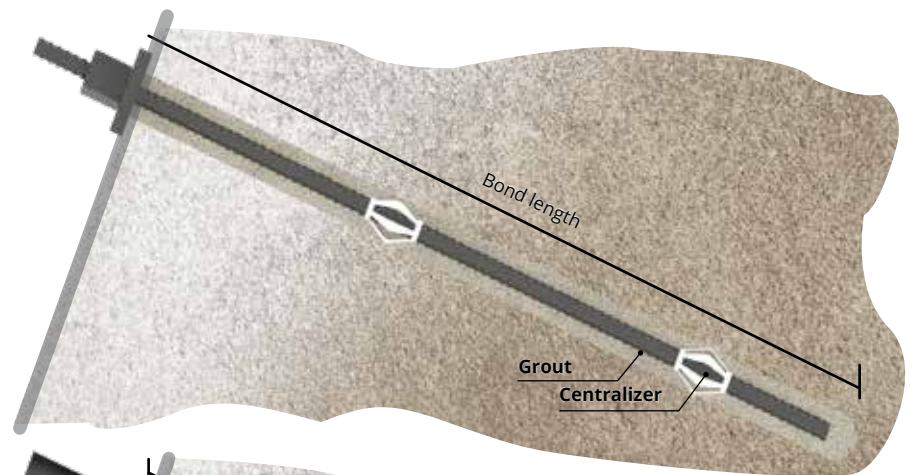


System Diagram

Black Steel (No Protection)

is achieved by 1 layer of grout all along the whole length of the system

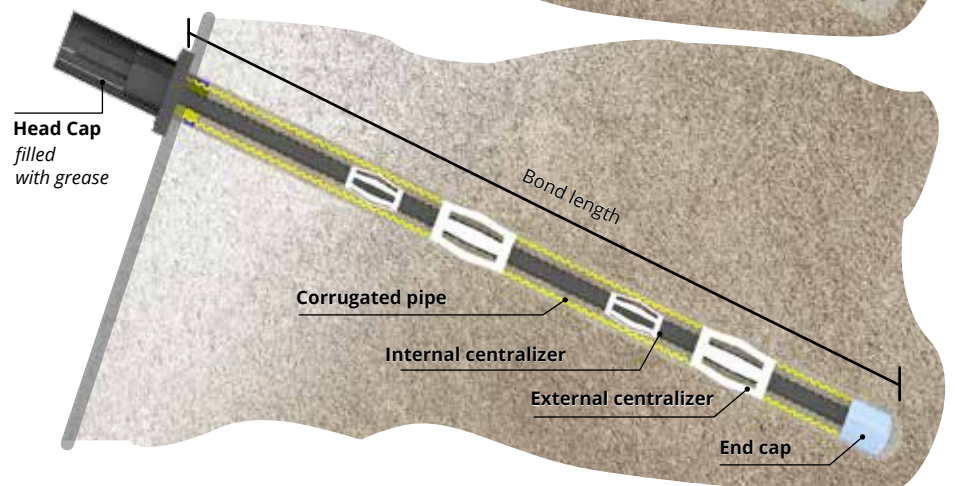
- **Bonded length** achieved with a single layer of grout between the bar and the bored hole



Double Corrosion Protection (DCP)

DCP is achieved by 2 layers of grout all along the whole length of the system.

- **Bonded length** protection is achieved with dual grout layers separated by a corrugated HDPE pipe
- **Protective head cap** and **end cap** complement the corrosion protection system.



Material Specifications

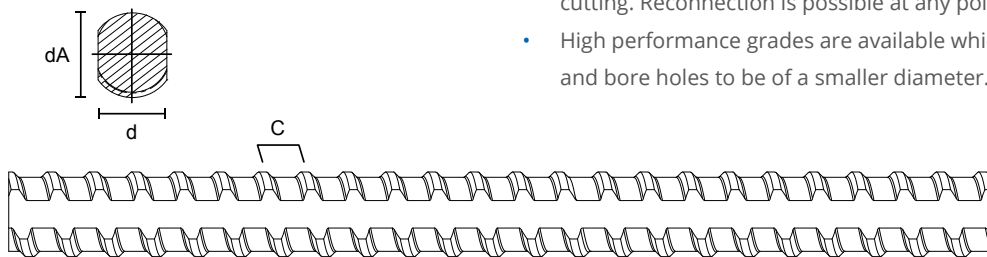


Material

- Continuous high-tensile hot-rolled threaded bars.
- Modulus of Elasticity: 205 GPa (205 kN/mm²).
- Available with either left-hand or right-hand threads.

Benefits of fully threaded bars

- Continuous thread increases the bonding with surrounding environment.
- Coarse thread and hard bar surface making it robust and less susceptible to damages.
- Length adjustment of fully threaded steel anchors is possible by cutting. Reconnection is possible at any point with couplers.
- High performance grades are available which allow the tendons and bore holes to be of a smaller diameter.



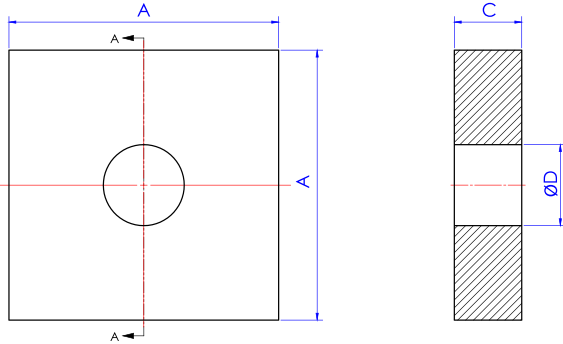
GEOTEC Steel Specifications

Steel Specifications												
Nominal diameter d	Max diameter dA	Pitch C	Cross-section area	Linear Weight	Grade 500/630		Grade 830/1030		Grade 930/1080		Grade 1080/1230	
					Yield load	Ultimate load	Yield load	Ultimate load	Yield load	Ultimate load	Yield load	Ultimate load
(mm)	(mm)	(mm)	(mm ²)	(kg/m)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)	(kN)
20	23	10	314	2.47	157	198	261*	323*	292*	339*	339*	386*
25	28	12	491	4.1	246	309	408	506	457	530	530	604
32	36	16	804	6.65	402*	507*	667	828	748	868	868	989
36	51	18	1018	8.41	509*	641*	845	1,049	947	1,099	1,099	1,252
40	45	20	1257	10.34	629*	792*	1,043	1,295	1,169	1,358	1,358	1,546
50	56	24	1963	16.28	982*	1237*	1,629	2,022	1,826	2,120		

* MOQ is required

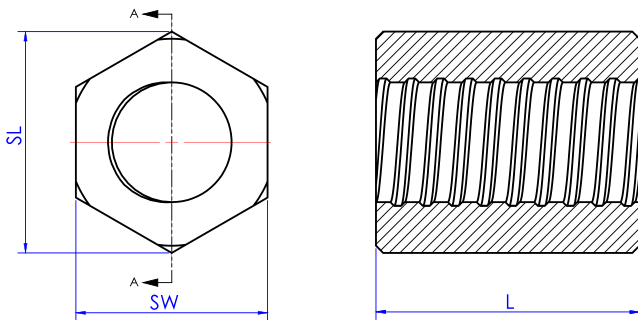
Ground Anchor Components Dimensions

Flat Plate



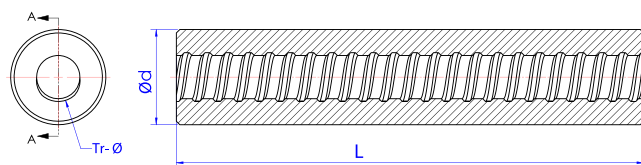
Steel FT Bar OD (mm)	Dimension			Unit Weight (kg/pcs)	Material
	A (mm)	C (mm)	D (mm)		
36	150	60	50	4.80	Q235B
40	160	60	55	5.50	Q235B
50	200	60	60	14.6	Q235B

Flat Nut



Steel FT Bar OD (mm)	Dimension			Unit Weight (kg/pcs)	Material
	L (mm)	SW (mm)	SL (mm)		
36	72	65	75	1.45	40Cr
40	100	70	81	2.17	40Cr
50	110	80	92	2.92	40Cr

Coupler



Steel FT Bar OD (mm)	Dimension		Unit Weight (kg/pcs)	Material
	Ød (mm)	L (mm)		
36	65	200	3.60	40Cr
40	75	220	5.20	40Cr
50	88	270	9.00	40Cr

Corrugate Pipe



Steel FT Bar OD (mm)	Dimension		Material
	ID (mm)	OD (mm)	
36	55	68	HDPE
40	60	73	HDPE
50	80	90	HDPE



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Anderson Road - Hong Kong



Al Salam Street - UAE



Green Duba - KSA



Green Duba - KSA



Pune Metro - India



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