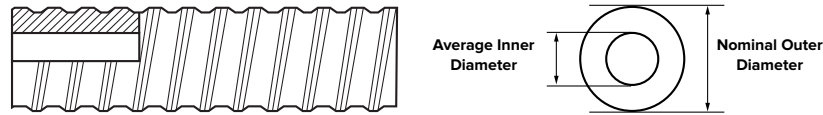


Hollow Bar and Accessories

Commercial Grade Hollow Bar & Accessories



"T" Threaded Hollow Bar Systems							
Bar Designation	Nominal Outer Diameter in mm	Average Inner Diameter in mm	Cross Sectional Area in ² mm ²	Ultimate Load kips kN	Yield Load kips kN	Approx. Major Thread Diameter in mm	Nominal Weight lbs/ft kg/m
T30/11	1.18 30	0.43 11	0.64 413	72.0 320	58.5 260	1.30 33	2.2 3.3
T40/20	1.57 40	0.79 20	1.13 726	121.4 540	95.6 425	1.70 43.2	3.8 5.6
T40/16	1.57 40	0.63 16	1.40 903	148.4 660	118.1 525	1.70 43.2	4.8 7.2
T52/26	2.05 52	1.03 26	1.94 1251	208.0 925	170.0 756	2.20 55.9	6.7 9.9
T76N	3.00 76	2.00 51	3.35 2161	319.0 1418	252.0 1120	3.20 81.3	10.2 15.2
T76S	3.00 76	1.77 45	4.03 2600	418.0 1859	330.0 1467	3.20 81.3	13.2 19.7
T103/78	4.06 103	3.00 78	4.87 3142	510.5 2270	404.8 1800	4.20 106.7	17.0 25.3
T103/51	4.06 103	2.00 51	8.80 5677	823.0 3660	600.4 2670	4.20 106.7	30.0 44.6



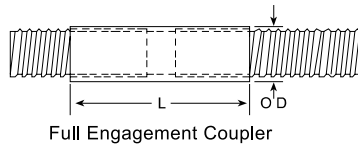
"R" Threaded Hollow Bar								
Bar Designation	Nominal Outer Diameter in mm	Average Inner Diameter in mm	Effective Outer Diameter in mm	Cross Sectional Area in ² mm ²	Ultimate Load kips kN	Yield Load kips kN	Approx. Major Thread Diameter in mm	Nominal Weight lbs/ft kg/m
R32S	1.26 32	0.63 16	1.15 29.1	0.76 488	81 360	62 275	1.38 35	2.700 4.00
R38Nx19mm ID	1.50 38	0.75 19	1.41 35.7	1.11 717	112 498	86 382	1.62 41	3.415 5.08
R51N	2.01 51	1.30 33	1.88 47.8	1.46 939	177 787	141 627	2.13 54	5.700 8.50

Please note: As we continuously improve the design of our products, product details are subject to change.

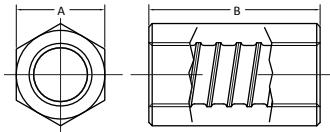
Hollow Bar and Accessories

Commercial Grade Hollow Bar & Accessories

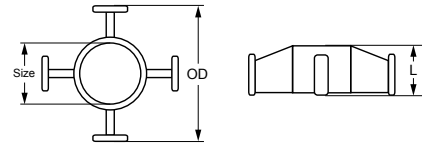
Couplers



Hex Nuts



Centralizers



"T" Threaded Hollow Bar Couplers			
Bar Designation	OD in mm	L in mm	Weight lbs kg
T30/11	1.5 38	4.2 105	1.0 0.45
T40/20	2.1 53	5.5 140	2.6 1.18
T40/16	2.1 53	5.5 140	2.6 1.18
T52/26	2.7 68.5	6.25 160	5.2 2.36
T76N	3.8 97	8.0 200	10.2 4.54
T76S	3.8 97	8.7 220	14.4 6.53
T103	5.2 132	11.5 292	30.5 13.8

"T" Threaded Hollow Bar Hex Nuts			
Bar Designation	A in mm	B in mm	Weight lbs kg
T30/11	1.8 46.0	1.4 36.0	1.0 0.45
T40/20	2.5 64.0	2.0 50.0	2.7 1.22
T40/16	2.5 64.0	2.0 50.0	2.6 1.18
T52/26	3.2 81	2.5 63.5	5.1 2.31
T76N	4.0 102.0	3.1 80.0	6.2 2.81
T76S	4.0 102.0	3.1 80.0	6.2 2.81
T103	5.25 133.0	5.125 130	13.0 5.90

Hollow Bar Centralizers			
Size	OD in mm	L in mm	Weight lbs kg
T30	2.75 70	1.40 35	0.5 0.21
	3.40 88	1.40 35	0.6 0.27
T40	3.40 88	1.50 40	0.8 0.37
T52	4.40 112	1.40 35	1.0 0.41
T76	5.00 130	1.75 45	2.0 0.89
T103	6.40 165	3.20 80	6.5 2.94

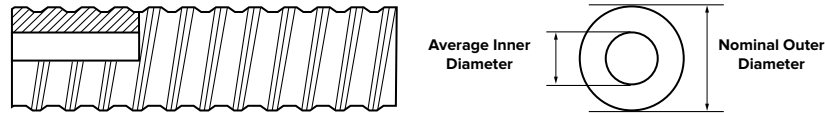
"R" Threaded Hollow Bar Couplers			
Bar Designation	OD in mm	L in mm	Weight lbs kg
R32S	1.7 43	7.5 190	2.0 0.91
R38Nx19mm	2.5 64	8.7 220	3.8 1.72
R51N	2.5 64	8.0 200	4.2 1.91

"R" Threaded Hollow Bar Hex Nuts			
Bar Designation	A in mm	B in mm	Weight lbs kg
R32S	1.8 46.0	3.0 65.0	2.0 0.91
R38Nx19mm	2.0 51.0	2.0 60.0	1.3 0.59
R51N	3.0 76.0	3.0 70.0	3.5 1.59

Please note: As we continuously improve the design of our products, product details are subject to change.

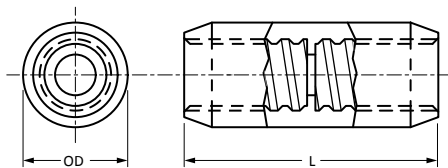
Hollow Bar and Accessories

Domestic Hollow Bar & Accessories



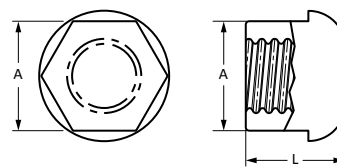
"T" Threaded Hollow Bar Systems*							
Bar Designation	Nominal Outer Diameter	Average Inner Diameter	Cross Sectional Area	Minimum Ultimate Load	Minimum Yield Load	Approx. Major Thread Diameter	Nominal Weight
	in mm	in mm	in ² (mm ²)	kips kN	kips kN	in mm	lbs/ft kg/m
T40/16	1.57 40	0.63 16	1.36 879	148 660	118 525	1.625 41.3	4.9 7.3
T40/20	1.57 40	0.79 20	1.13 726	127 565	95.6 425	1.70 43.2	4.4 6.5
T52/26	2.05 52	1.03 26	2.07 1337	227 1009	179 796	2.125 54.0	6.8 10.1
T76/51	3.00 76	2.01 51	3.20 2065	319 1418	252 1120	3.000 76.2	11.1 16.5
T76/45	3.00 76	1.77 45	3.90 2516	418 1859	330 1467	3.000 76.2	13.2 19.7

Couplers



"T" Threaded Hollow Bar Couplers*			
Bar Designation	OD	L	Weight
	in mm	in mm	lbs kg
HBC PL 40	2.500 63.5	5.50 139.7	5.10 2.31
HBC PL 52	3.125 79.375	6.00 152.4	11.39 5.17
HBC PL 760	3.75 95.25	7.875 200.03	34.81 15.79

Anchor Hex Nuts



"T" Threaded Hollow Bar Anchor Hex Nuts*			
Bar Designation	A	L	Weight
	in mm	in mm	lbs kg
HBHN 40	2.50 63.5	2.0 50.8	5.87 2.66
HBHN 52	3.35 85.09	3.0 76.2	10.04 4.55
HBHN 760	4.00 101.6	3.1 78.7	23.81 10.80

* Meets "Buy America" requirements.

Hollow Bar and Accessories

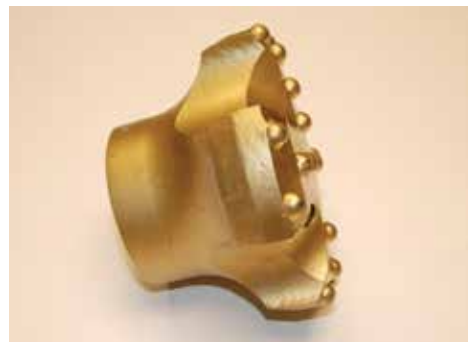
Hollow Bar Bits

Carbide Cross, Steel Cross Cut , and Button Bits		
Bar Sizes	Size in mm	Weight lbs/unit (kg/unit)
T30	2.0 50.8	1.0 0.45
	2.5 63.5	2.0 0.91
	3.0 76.2	2.9 1.32
T40	2.5 63.5	2.0 0.91
	3.0 76.2	2.9 1.32
	3.5 88.9	3.5 1.59
	4.0 101.6	5.5 2.49
	4.5 114.3	7.0 3.18
	5.0 127.0	10.5 4.76
T52	4.5 114.3	7.0 3.18
	5.0 127.0	10.5 4.76
	6.0 152.4	13.0 5.90
T76	5.0 127.0	10.5 4.76
	6.0 152.4	13.0 5.90
	7.0 177.8	14.5 6.58
	8.0 203.2	16.0 7.26
R32	2.0 50.8	1.0 0.45
	2.5 63.5	2.0 0.91
	3.0 76.2	2.9 1.32
R38	3.0 76.2	2.9 1.32
	3.5 88.9	3.5 1.59
R51	4.0 101.6	5.5 2.49
	4.5 114.3	7.0 3.18
	5.0 127.0	10.5 4.76
	6.0 152.4	13.0 5.90

All bits subject to availability. Call for stock quantities. Specialty bits available upon request.

Drill Bit Adaptors	
Adaptors	Weight lbs/unit (kg/unit)
R32 x R38	0.20 0.09
R38 x R51	0.30 0.13
T30 x T40	0.30 0.13

Call for job specific quotes. Price depends on quantities.



Product Detail: Hollow Bar Systems

Hollow Bars

Hollow bars are fully threaded, “disposable” drill rods capable of drilling holes utilizing sacrificial bits that will advance the drill string to the required depth and then allow them to be grouted in place. This process creates the steel reinforcing portion of an anchor or pile. Hollow bar products are a valuable and multi-functional addition to the geotechnical contractor’s toolbox. They can be used as tie back or tie down anchors, rock anchors, soil nails and micropiles in a large array of challenging applications.

There are three basic types of drill bits for use with hollow bars: versatile cross cut bits in carbide or hardened steel, button bits for intact rock in carbide or hardened steel and steel stepped clay bits for cohesive soils. The selection of the drill bit type and size is based on the material that is being drilled through and the desired borehole diameter. A larger borehole diameter provides greater load carrying capacity and greater grout cover. Grout cover protects the anchor rod from corroding. Depending on the actual soil type, a 2.5 inch diameter bit can produce a 6 to 8 inch diameter grout column.

Production rates are increased through the use of hollow bar systems, as compared to traditional solid bar anchors. This is especially true when drilling through difficult conditions. In sites with low headroom, large scale drilling rigs and hole casing systems can be avoided. With drill rigs where “through the head grouting” is not available, grout swivels can be used to retrofit standard rotary percussion drills.

Hollow Bar Corrosion Protection

The level of corrosion protection is dependent on the anticipated service life of the anchor, installation methods, and the corrosion potential (aggressiveness) of the environment. The FHWA has studied the effects of installation on both galvanized and epoxy coated bars as reported in FHWA CFL/TD10-002. This study revealed epoxy coatings were both partially and completely removed at the leading edge of the screw profile and around the couplings.

The installations were constructed using hollow bars as both the drill rod and reinforcement. The effects of the removal reduced the service life of the bar substantially by creating concentrated locations for potential corrosion. As such, the designer should evaluate all possibilities when determining the level of corrosion protection required.

Hot Dipped Galvanizing

Hot dipped galvanizing is a form of galvanization and is the process of coating a base metal such as steel with molten zinc. The zinc acts as a sacrificial material to the steel. The galvanized coating is manufactured in accordance with ASTM A 53 standards and is more resistant to handling than epoxy coatings.



Sacrificial Steel

Using sacrificial steel as a form of corrosion protection requires a geotechnical evaluation of the corrosivity of the soils. The estimated loss of steel thickness is calculated and then the hollow bar is designed with the additional increase in thickness.

