

Anchor Size (In.)	Minimum Vertical Depth (ft.)	Soil Pullout Resistance (lbs.)					Soil Pullout Resistance reduction for ground water above anchors (lbs.)					Reduction for ground water above anchor (%)	Depth Increase (%)	
		Hardpan	Class 1	Class 2	Class 3	Class 4	Hardpan	Class 1	Class 2	Class 3	Class 4		Above Ground	Below Ground
2	2	600	300	170	100	50	600	240	140	80	40	20%	30	15
3	2 1/2	1300	700	450	240	120	1300	600	380	200	100	15%	25	15
4	2 1/2	2300	1200	750	400	200	2300	1020	640	340	170	15%	25	15
6	3 1/2	5000	3000	2000	1200	600	5000	2640	1760	1060	530	12%	20	0
8	4	9000	6500	3500	2200	1250	9000	5850	3150	1980	1130	10%	20	10
10	5	14000	11000	7000	4000	2400	14000	10120	6440	3680	2210	8%	15	8
12	6	20000	17000	11500	7000	4000	20000	15810	10700	6510	3720	7%	15	8
15	8	30000	25500	17250	10500	6000	30000	23715	16050	9765	5580	7%	15	8
17	9	40000	34000	23000	14000	8000	40000	31620	21400	13020	7440	7%	15	8

Notes:

1. In determining vertical depth to the Ground Anchor, the thickness of topsoil, peat, soft clay and similar soft soils should not be included.
2. The applicable class of soil that is present within a zone from the Ground Anchor to a point from one to three feet above the anchor, depending upon anchor size.
3. For Ground Anchors at a minimum depth in Soil Classes 1-4, reduce ultimate pullout resistance by percentage given for each foot ground water table is above the anchor. No reduction is required for hardpan.
4. For Ground Anchors driven to depths greater than the minimum Soil Classes 1-4, the ultimate pullout resistance may be increased by the percentage given for each additional foot below the specified minimum. The ultimate pullout resistance

Soil Classification

Hardpan: A very compact heterogeneous mixture of soil particles ranging from those of silt and clay size to sand, gravel and perhaps boulders and generally exhibiting very high dry strength.

Soil Classes 1-4: Cohesionless sands and gravels which are non-plastic in the wet state and which possess no strength or cohesion between individual mineral particles or rock fragments in the dry state.

Class 1: Dense Gravel: Dense well-graded sand and gravel with angular particles.

Class 2: Medium-dense sandy gravel and gravelly sand; Medium-dense to dense well graded sand.

Class 3: Loose to medium dense well-graded sand; Medium \dense to dense medium to fine sand.

Class 4: Loose fine sand and loose medium sand with well-rounded particles: Uncompact sand fill.