

Square Non-Tapered // Wood Grained

Spun Concrete Pole



Striking a perfect balance between form and function, the Square Non-Tapered Wood Grained pole provides the look and feel of a wood pole with all of the durability and strength of pre-stressed spun concrete. StressCrete painstakingly replicated the wood grain line details to ensure that every wood grained pole has a realistic look and feel. Combined with the selection of wood-like color options, the wood grained poles will stand beautifully in any surrounding. Also available as a bollard.

Specifications:

CERTIFICATION, DESIGN, AND MANUFACTURING

All spun concrete pole designs and wind loading calculations shall be prepared by an experienced licensed engineer. The manufacturer shall have a minimum of 60 years' experience in the design and production of spun concrete poles. The manufacturing company shall be certified by Canadian Standards Association (CSA) to CSA-A14 (latest revision). Poles shall be designed to AASHTO-LTS (latest revision) to withstand a 3 second gust wind speed that is determined by geographical area utilizing the AASHTO wind map. Poles shall be designed/manufactured in accordance to:

- » CSA-A14: Concrete Poles (latest revision);
- » ANSI-C136.36B: Roadway and Area Lighting Equipment - Concrete Lighting Poles (latest revision);
- » ASTM-C1089: Standard Specification for Spun Cast Prestressed Concrete Poles (latest revision);
- » The Guide Specification for Prestressed Concrete Poles, issue of the Journal of the Prestressed Concrete Institute.

RAW MATERIALS Coarse Aggregate

Shall be clean washed limestone or granite with a maximum size of 1/2", graded as to achieve optimum quality in the finished product and shall conform to ASTM-C33.

Fine Aggregate

Shall be clean washed concrete grade sand, free of clay and other deleterious matter and shall conform to ASTM-C33.

Cement

Shall be equal to ASTM C595, Type II or CSA Type 10 or Type 30.

Admixtures

Water reducers, retarders or accelerating admixtures shall conform to ASTM-C494. Air entrainment and efflorescence control shall also be used.

Water

Shall be free of acids, alkalis and organic materials.

Color Pigments

Where used shall be non-fade iron or chromium oxides.

Steel

Prestressing steel reinforcement shall be uncoated 7-wire strand and shall conform to ASTM A416 and CSA G279. Deformed reinforcing bars shall

conform to ASTM A615, and CSA G30.12. Helical reinforcing wire shall conform to ASTM A82 and when applicable have a hot dipped galvanized coating as per ASTM A641, Class 3.

MANUFACTURING

Internal Steel Reinforcement

Skeleton: Rings increasing in diameter are welded to a continuous longitudinal steel bar. A bare copper wire is bonded to the continuous longitudinal steel bar and exiting the hand hole box. The taper of the skeleton is equal to the taper of the pole to ensure proper concrete coverage. The required stress wires and/or rebar are tied to the skeleton. Size and quantity will vary based upon pole length and class. Plastic spacers are used to ensure a minimum concrete cover of 3/4" on all longitudinal reinforcing steel. The skeleton and longitudinal reinforcing steel cage shall be wrapped in both directions with galvanized steel helical reinforcement. The pitch varies from 3" to 7" or as required. Diameter of helical reinforcement is determined by pole class. Ornamental poles shall have additional reinforcing rings at large bell locations for added durability.

Mold Set Up

The mold is set up to include all through holes, hand hole boxes, apertures, etc. per customer specifications. The steel cage is placed into the mold and centered with precision drilled end plates and spools. To further center the cage within the mold, the bottom cables are pre-stressed to remove any slack in the cable.

Concrete Batching

A fully automated batching system is to be used for all concrete batches. These batches are to be recorded and kept for a minimum of 7 years. A concrete cylinder test shall be performed for each 52 cubic yards (40 cubic meters) of concrete poured. Air entrainment and slump tests are performed at the same time. The concrete used shall achieve a minimum 28-day compressive strength of 8,000 psi (55 Mpa). Air entrainment admixture shall be used to produce 5-8% air content in the static cast cylinder.

Stressing

Prestressing steel reinforcement shall be stressed up to a maximum of 70% of their ultimate capacity. Elongation is to be measured on all strands.

Spinning

Molds are to be spun at 300 - 350 rpm for a duration of 6-15 minutes.

Curing

Steam is not to be introduced for a minimum of 45 minutes after the spinning process is complete. Concrete temperature not to exceed 140 degrees Fahrenheit (60 degrees Celsius).

Demolding

Prestressing strand shall not be released until a minimum concrete compressive strength of 3,500 psi (25 Mpa) is achieved.

Finishing

Per customer specification, poles are to be finished in Lightly Etched finish. Coating options included silane, acrylic or anti-graffiti.

QUALITY CONTROL

A production drawing shall be provided for each type of pole manufactured. A quality control technician shall approve each stage of manufacturing before proceeding to the next. All quality control procedures shall be mandated in a written manual and be available for review.

STANDARD ACCESSORIES

All lighting poles shall be provided with a fish wire to facilitate cable installation. A #6 copper ground wire shall be supplied inside the hand hole, bonded to the pole's internal steel cage. Hand holes shall be box type, rugged high density cast zinc, and shall be supplied with a close fitting inset cover of the same material. Cover plate shall be mounted to the hand hole box with stainless steel screws. Metallic hand hole boxes shall be electrically grounded. Wiring apertures, giving access to the raceway of the pole, shall be free from any sharp edges or debris. Standard through hole sizes include 1/2", 3/4", and 1" diameter. Standard threaded inserts shall be diecast zinc or hot dipped galvanized in sizes ranging from 1/4" - UNC to 3/4" - UNC.

WARRANTY

Manufacturer shall provide a limited lifetime warranty for its spun concrete pole products to be free from defects in materials and workmanship for the intended lifetime of the product.



Pole Details:

FINISH:
Lightly Etched

COLOR:
Desert Sand (Standard)

MOUNTING OPTIONS:
Direct Embedment
Base Plate

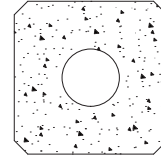
CLASS:
A & B

HEIGHT:
15-30' (in 2.5' increments)

DECORATIVE OPTION:
45° Chamfered top

Square Non-Tapered Wood Grained Pole

CROSS SECTION:

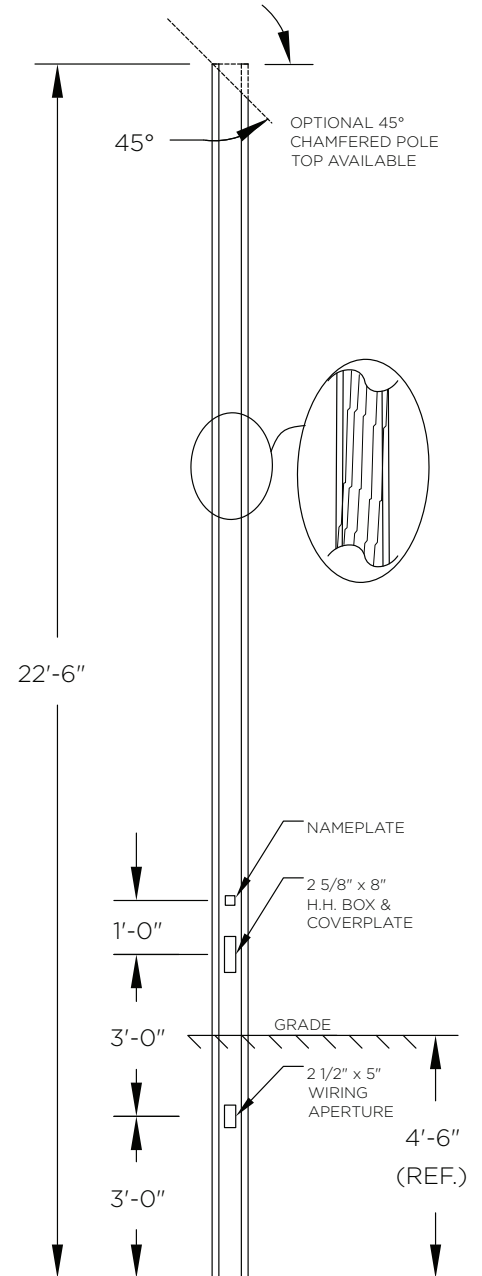


8" Square Non-Tapered
with 1" chamfered corners

Baseplate Details:

Pole		Baseplate		Anchor Bolts	
Overall Length (ft)	Class	Square (in)	Thickness (in)	Bolt Dia (in)	Bolt Circle (in)
10 - 20	A	14	0.75	0.75	14
22.5 - 30	A	14	1	0.75	14
10 - 12.5	B	14	0.75	0.75	14
15 - 20	B	14	1	0.75	14
22.5 - 30	B	14	1.25	1	14

Sample Pole Drawing:

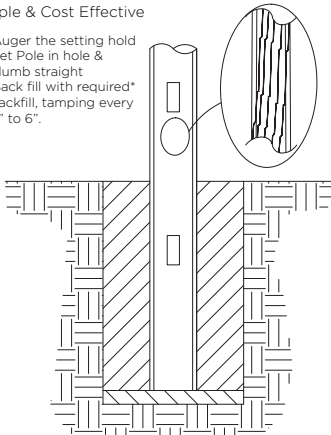


Foundation Details:

DIRECT EMBEDDED

Simple & Cost Effective

- 1) Auger the setting hold
- 2) Set Pole in hole & plumb straight
- 3) Back fill with required* backfill, tamping every 4" to 6".

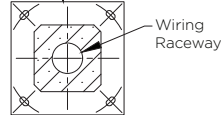


* The excavated materials can generally be used for backfill. In some situations better backfill may be required.

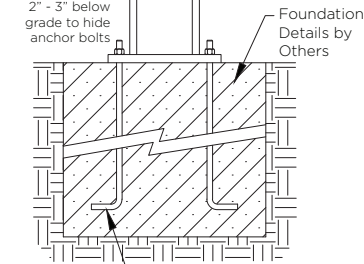
OPTIONAL BASE PLATE

Hot Dipped Galvanized Base Plate

14" x 14"
14" Dia. Bolt Circle

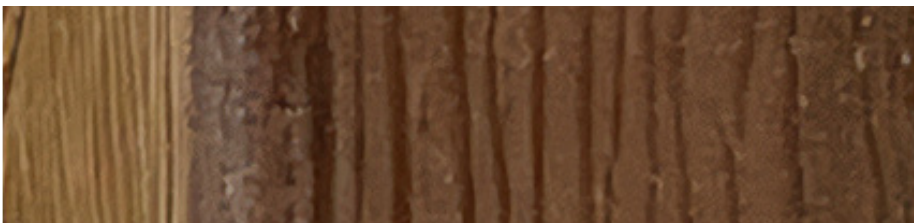


Pole may be set
2" - 3" below
grade to hide
anchor bolts



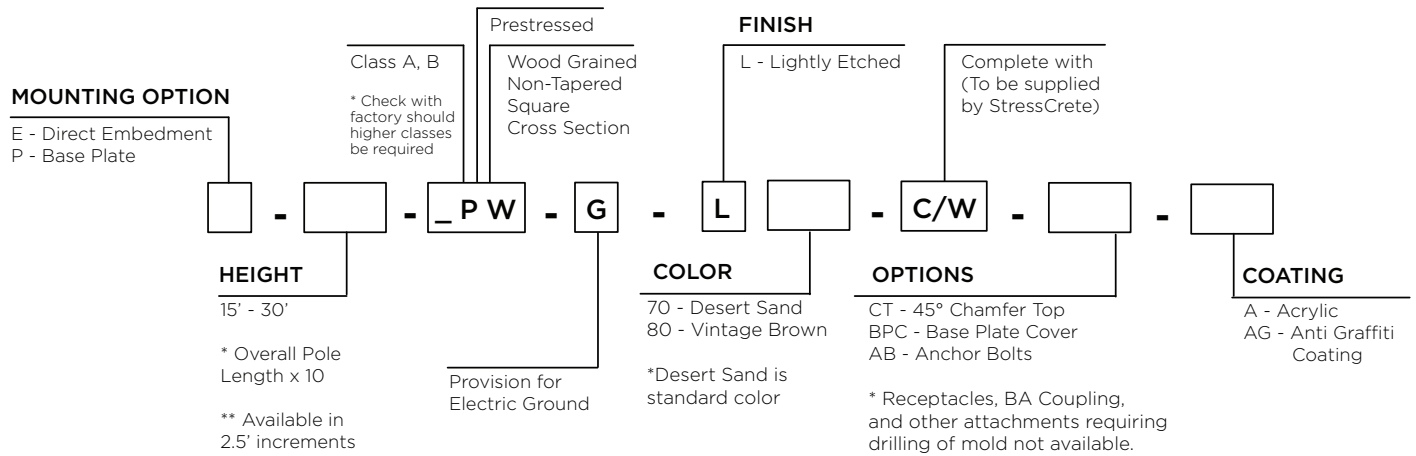
Anchor Bolts
3/4" x 27" or 1" x 36" (see chart)
55,000 psi minimum yield

Wood Grain Detail:



How to Order:

Square Non-Tapered Wood Grained Pole



Pole Measurements:

Direct Embedment // Pole Measurements

Above Grade Height (ft)	Catalogue Code	Assumed Embedment Depth* (ft)	Overall Pole Length (ft)	Pole Butt (in)	Pole Tip (in)	Ultimate Ground-Line Moment (ft. lbs.**)	Nominal Weight (lbs)
11.5	E-150-APW-G	3.5	15	8	8	5,700	1,155
	E-150-BPW-G					8,550	
13.75	E-175-APW-G	3.75	17.5	8	8	7,050	1,348
	E-175-BPW-G					10,575	
16	E-200-APW-G	4	20	8	8	8,400	1,540
	E-200-BPW-G					12,600	
18.25	E-225-APW-G	4.25	22.5	8	8	9,750	1,733
	E-225-BPW-G					14,625	
20.5	E-250-APW-G	4.5	25	8	8	11,100	1,925
	E-250-BPW-G					16,650	
22.75	E-275-APW-G	4.75	27.5	8	8	12,450	2,118
	E-275-BPW-G					18,675	
25	E-300-APW-G	5	30	8	8	13,800	2,310
	E-300-BPW-G					20,700	

Base Plate // Pole Measurements

Above Grade Height (ft)	Catalogue Code	Pole Butt (in)	Pole Tip (in)	Baseplate			Anchor Bolt Diameter (in)	Ultimate Ground-Line Moment (ft. lbs.**)	Nominal Weight (lbs)
				Dimensions (in)	Thickness (in)	Bolt Circle (in)			
15	P-150-APW-G	8	8	14 x 14	0.75	14	0.75	7,800	1,155
	P-150-BPW-G				1			11,700	
17.5	P-175-APW-G	8	8	14 x 14	0.75	14	0.75	9,300	1,348
	P-175-BPW-G				1			13,950	
20	P-200-APW-G	8	8	14 x 14	0.75	14	0.75	10,800	1,540
	P-200-BPW-G				1			16,200	
22.5	P-225-APW-G	8	8	14 x 14	1	14	0.75	12,300	1,733
	P-225-BPW-G				1.25			18,450	
25	P-250-APW-G	8	8	14 x 14	1	14	0.75	13,800	1,925
	P-250-BPW-G				1.25			20,700	
27.5	P-275-APW-G	8	8	14 x 14	1	14	0.75	15,300	2,118
	P-275-BPW-G				1.25			22,950	
30	P-300-APW-G	8	8	14 x 14	1	14	0.75	16,800	2,310
	P-300-BPW-G				1.25			25,200	

EPA // Balanced Loading

Above Grade Height (ft)	Class	Design Information // AASHTO LTS-6, Latest Revision																			
		90 mph				100 mph				110 mph				120 mph				150 mph			
		Post Top	Twin 4' Arms	Twin 6' Arms	Twin 8' Arms	Post Top	Twin 4' Arms	Twin 6' Arms	Twin 8' Arms	Post Top	Twin 4' Arms	Twin 6' Arms	Twin 8' Arms	Post Top	Twin 4' Arms	Twin 6' Arms	Twin 8' Arms	Post Top	Twin 4' Arms	Twin 6' Arms	Twin 8' Arms
15	A	10.8	4.5	3.9	3.4	7.5	2.8	2.3	1.8	5.0	1.6	1.1	0.6	3.1	0.6	-	-	-	-	-	-
	B	19.7	8.9	8.4	7.9	14.6	6.4	5.9	5.4	10.9	4.5	4.0	3.6	8.1	3.1	2.6	2.2	2.7	-	-	-
17.5	A	9.8	4.0	3.5	3.0	6.5	2.3	1.8	1.3	4.0	1.1	0.6	-	2.1	-	-	-	-	-	-	-
	B	18.7	8.4	7.9	7.4	13.7	5.9	5.4	4.9	9.9	4.0	3.6	3.1	7.1	2.6	2.2	1.7	1.7	-	-	-
20	A	8.6	3.4	2.9	2.4	5.3	1.7	1.3	0.8	2.9	-	-	-	1.0	-	-	-	-	-	-	-
	B	17.3	7.7	7.3	6.8	12.4	5.3	4.8	4.3	8.7	3.4	2.3	2.5	5.9	2.0	1.6	1.1	0.6	-	-	-
22.5	A	7.4	2.8	2.3	1.8	4.1	1.1	0.7	-	1.7	0.0	-	-	-	-	-	-	-	-	-	-
	B	16.0	7.0	6.6	6.1	11.1	4.6	4.1	3.7	7.5	2.8	c	1.9	4.7	1.4	1.0	0.5	-	-	-	-
25	A	6.1	2.1	1.6	1.2	2.9	-	-	-	0.5	0.0	-	-	-	-	-	-	-	-	-	-
	B	14.5	6.3	5.9	5.4	9.7	3.9	3.5	3.0	6.2	2.2	1.7	1.2	3.5	0.8	-	-	-	-	-	-
27.5	A	4.8	1.5	1.0	0.5	1.7	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-
	B	13.1	5.6	5.1	4.7	8.4	3.2	2.8	2.3	4.9	1.5	1.0	0.6	2.2	-	-	-	-	-	-	-
30	A	3.5	0.8	-	-	0.4	-	-	-	-	0.0	-	-	-	-	-	-	-	-	-	-
	B	11.6	4.8	4.4	3.9	7.0	2.5	2.1	1.6	3.6	0.8	-	-	1.0	-	-	-	-	-	-	-

EPA // Imbalanced Loading

Above Grade Height (ft)	Class	Design Information // AASHTO LTS-6, Latest Revision														
		90 mph			100 mph			110 mph			120 mph			150 mph		
		4' Arm	6' Arm	8' Arm	4' Arm	6' Arm	8' Arm	4' Arm	6' Arm	8' Arm	4' Arm	6' Arm	8' Arm	4' Arm	6' Arm	8' Arm
15	A	9.9	9.4	8.9	6.6	6.1	5.6	4.1	3.6	3.1	2.2	1.7	1.2	-	1.3	-
	B	18.8	18.3	17.8	13.7	13.3	12.8	10.0	9.5	9.1	7.2	6.7	6.2	1.8	-	0.9
17.5	A	8.9	8.4	8.0	5.6	5.1	4.6	3.1	2.6	2.1	1.2	0.7	-	-	-	-
	B	17.8	17.3	16.8	12.7	12.3	11.8	9.0	8.5	8.1	6.2	5.7	5.3	0.8	-	-
20	A	7.7	7.2	6.8	4.4	3.9	3.5	2.0	1.5	1.0	-	-	-	-	-	-
	B	16.4	16.0	15.5	11.5	11.0	10.5	7.8	7.3	6.9	5.0	4.5	4.1	-	-	-
22.5	A	6.5	6.0	5.5	3.2	2.7	2.3	0.8	-	-	-	-	-	-	-	-
	B	15.0	14.6	14.1	10.2	9.7	9.2	6.5	6.1	5.6	3.8	3.3	2.9	-	-	-
25	A	5.2	4.7	4.3	2.0	1.5	1.1	-	-	-	-	-	-	-	-	-
	B	13.6	13.1	12.7	8.8	8.4	7.9	5.3	4.8	4.3	2.6	2.1	1.7	-	-	-
27.5	A	3.9	3.4	3.0	0.7	-	-	-	-	-	-	-	-	-	-	-
	B	12.2	11.7	11.2	7.4	7.0	6.5	4.0	3.5	3.0	1.3	0.9	-	-	-	-
30	A	2.6	2.1	1.6	-	-	-	-	-	-	-	-	-	-	-	-
	B	10.7	10.2	9.8	6.1	5.6	5.1	2.6	2.2	1.7	-	-	-	-	-	-