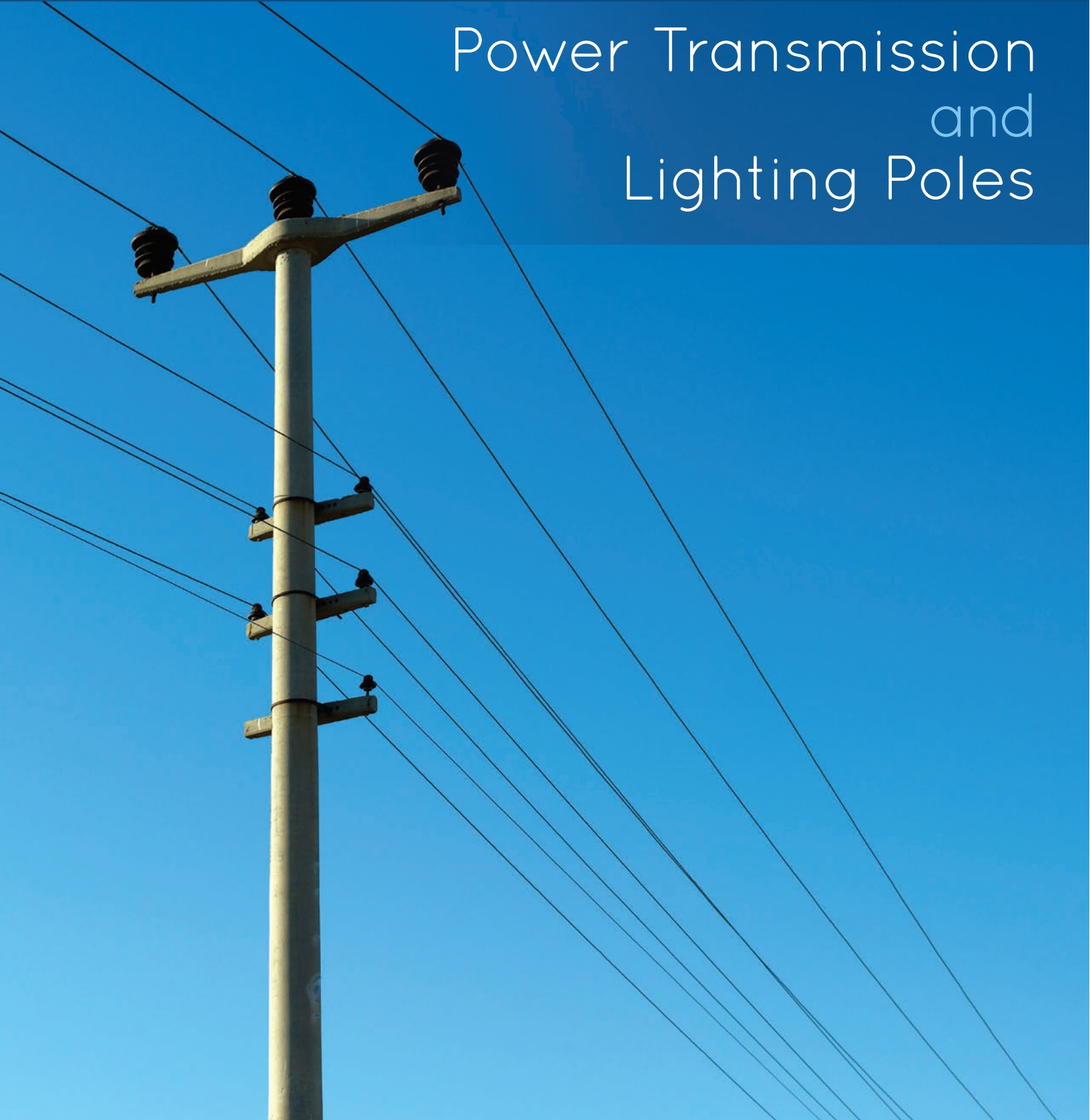


Power Transmission and Lighting Poles



INDEX

A decorative graphic consisting of several parallel diagonal lines in a light gray color, extending from the top right towards the bottom left, creating a sense of movement and depth.

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AFGEL

Company Profile

“Power Distribution Construction Company”

The Afgel Company is engaged in the production of poles for high and low voltage energy transmission lines and lighting in its facilities located at Kabul, Afghanistan, using the Centrifugal Reinforced Concrete Technology.

The poles that we produce are high-strength products and, in addition to the esthetical appearance and long service life, they are preferred by the companies as they require no maintenance and reduce the costs economically.

The Management and production personnel of the Afgel Company is comprised of expert individuals, who have worked in their fields for long years, and technical personnel that utilize their expertise for offering better services.

Our company has adopted quality, trust and punctual work completion as a way of life, and also adopted providing a better, more economical and faster services for our customers. Customer satisfaction is our number 1 priority in our quality policy.

With the above approach, we believe that we shall attain the reputation that we deserve in this sector with our mission of contemporary technology.

“ Our company has adopted quality, trust and punctual work completion as a way of life. ”



General Issues



The transformer poles are indicated by adding the letter **(T)** in front of the pole symbol..

Transformer pole selection: The selection is made according to the tables used for the selection of the Medium Voltage (MV) and Low Voltage (LV) poles as well as the principles for the selection of the power distribution poles.

The transformer platform is sized to carry all types of transformers, up to 250 and 400 kVa (included) and indicated with the symbol **(PLT-250 or 400)**.

Platform for the transformer poles: the platform is installed according to the transformer power, line voltage and sectional dimensions, but not less than 250 cm from the top .



Technical Data

POLE TYPES

The Afgel Company is engaged in the production of poles for high and low voltage energy transmission lines and lighting poles in its facilities located at Kabul, Afghanistan, using the Centrifugal Reinforced Concrete Technology.

<i>Example</i>	Pole top diameter	135 mm
	Pole length	9.30 m
	Pole bottom diameter	275 mm

WEIGHTS

Depend on the concrete product tolerances and used as the basis for pricing the transportation and installation charges.

GROUNDING NUTS

The m ½ grounding nut welded to the main equipment is located at the level of the traverses from the top and (~+0.20m) above the foundation at the bottom of the pole.

INSULATOR NUT

As the middle conductor has to be fixed on top of the pole in the medium voltage lines, a 1” insulator nut is welded on top of the pole to secure the insulator bar.

LADDER NUT

As an option the poles may be fitted with ladder nuts for installing portable rungs with 50 cm intervals. The supplemental charges for the foregoing is calculated according to the pole length and quoted.

LIGHTING CONSOLE INSTALLATION

When installation of lighting consoles on the concrete poles is desired, the height of the light, console type and the cable connection type (internal and external) has to be indicated. Separate lighting poles have to be manufactured for lighting purposes.

TYPE-TIP STRENGTH

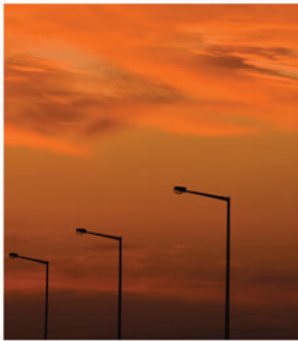
The poles are marked to show their Type and Length. The tip strength of the pole is calculated by multiplying the type mark by 100 kg. For example, a 2x12 pole means a tip strength of 2x100 = **200 kg** tip strength and 12 meters of length.

DUAL POLES

Dual poles are used when non-standard pole strength is required. The tip strength of a dual-pole is 4 to 7 times higher than a single pole used in one direction and two times higher in the other direction.

SPECIAL LENGTH POLES

The poles that are longer than the standard lengths given in the list are specially manufactured.



Production Plant is at
Bagram / Afghanistan

Standart Concrete Pole Top Diameters Table

Length Type	9.30	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
	1,5	135	135	135													
2	"	"	"	135													
2,5	"	"	"	"													
3	180	180	180	180	225	225	225										
3,5	"	"	"	"	"	"	"										
4	"	"	"	225	"	"	"	225	225	225							
5	"	"	"	"	"	"	"	"	"	"	225	225					
6	"	"	"	"	"	"	"	"	"	"	"	"	225	225			
7	225	225	225	"	"	"	"	"	"	"	"	"	"	"	225		
8	"	"	"	270	270	270	270	270	270	270	270	270	270	270	270	270	255
9	270	270	270	"	"	"	"	"	"	"	"	"	"	"	"	"	"
10	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
11	"	"	"	"	"	"	"	"	"	"	"	315	315	315	315	315	315
12	315	315	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
13	"	"	315	315	315	315	315	315	315	315	315	"	"	"	"	"	"
14	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
15	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
16	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
17	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
18	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
19	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
20	360	360	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
21	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
22	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
23	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
24	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
25	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
26	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
27	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
28	"	"	360	360	"	"	"	"	"	"	"	"	"	"	"	"	"
29	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
30	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	
31	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
32	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"		
33	"	"	"	"	"	"	"	"	"	"	"	"	"	"			
34	"	"	"	"	"	"	"	"	"	"	"	"	"				
35	"	"	"	"	"	"	"	"	"	"	"	"	"				
Pole top diameters are increasing 15 mm from the top to bottom. Maximum bottom diameter is 540 mm.																	

Standart Concrete Pole

Bottom Diameters Table

Length Type	9.30	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1,5	275	285	300														
2	“	“	“	315													
2,5	“	“	“	“													
3	320	330	345	360	420	435	450										
3,5	“	“	“	“	“	“	“										
4	“	“	“	405	“	“	“	465	480	495							
5	“	“	“	“	“	“	“	“	“	“	510	525					
6	“	“	“	“	“	“	“	“	“	“	“	“	540	540			
7	225	225	225	“	“	“	“	“	“	“	“	“	“	“	540		
8	“	“	“	450	465	480	495	510	525	540	540	540	“	“	“	540	540
9	410	420	435	“	“	“	“	“	“	“	“	“	“	“	“	“	“
10	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
11	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
12	455	465	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
13	“	“	480	495	510	525	540	540	540	“	“	“	“	“	“	“	“
14	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
15	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
16	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
17	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
18	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
19	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
20	500	510	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
21	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
22	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
23	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
24	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
25	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
26	“	“	525	540	540	540	“	“	“	“	“	“	“	“	“	“	“
27	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
28	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
29	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“
30	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“	
31	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“		
32	“	“	“	“	“	“	“	“	“	“	“	“	“	“	“		
33	“	“	“	“	“	“	“	“	“	“	“	“	“	“			
34	“	“	“	“	“	“	“	“	“	“	“	“	“				
35	“	“	“	“	“	“	“	“	“	“	“	“	“				

Standart Concrete Pole Characteristics

Weight Table

Length Type	9.30	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1,5	620	695	815														
2	625	700	825	955													
2,5	635	710	835	965													
3	865	965	1120	1285	1860	2090	2335										
3,5	870	970	1130	1295	1870	2100	2345										
4	875	975	1135	1655	1875	2105	2350	2610	2890	3180							
5	885	990	1150	1670	1890	2125	2375	2635	2910	3205	3515	3835					
6	900	1005	1165	1685	1910	2145	2395	2660	2935	3230	3545	3875	4220	4570			
7	1165	1290	1490	1700	1925	2165	2415	2680	2970	3265	3580	3905	4255	4610	4960		
8	1175	1305	1505	2110	2380	2650	2955	3270	3595	3945	4300	4655	5010	5370	5725	6065	6215
9	1475	1630	1870	2120	2395	2680	2975	3290	3625	3970	4330	4685	5055	5415	5775	6135	6270
10	1485	1645	1885	2140	2410	2690	2990	3320	3645	4000	4360	4715	5080	5445	5820	6185	6325
11	1495	1655	1900	2150	2425	2710	3020	3335	3675	4025	4385	5395	5760	6140	6510	6880	7805
12	1825	2015	1910	2170	2440	2730	3035	3360	3695	4060	4430	5435	5800	6170	6555	6910	7840
13	1835	2020	2310	2615	2940	3275	3625	3985	4355	4720	5090	5460	5830	6200	6595	6970	7880
14	1640	2030	2320	2625	2950	3285	3640	4000	4375	4740	5115	5485	5860	6245	6620	7000	7935
15	1850	2035	2335	2635	2960	3300	3655	4030	4400	4770	5140	5530	5905	6285	6665	7045	7980
16	1860	2050	2345	2650	2975	3325	3685	4050	4420	4805	5180	5555	5935	6310	6720	7105	8050
17	1865	2060	2355	2660	2995	3340	3700	4065	4455	4830	5205	5585	5980	6365	6750	7140	8085
18	2975	2065	2360	2670	3010	3355	3755	4100	4475	4850	5230	5630	6015	6400	6790	7180	8130
19	1885	2075	2380	2690	3020	3365	3740	4115	4495	4885	5265	5650	6060	6455	6845	7240	8185
20	2245	2475	2390	2700	3045	3390	3755	4155	4515	4914	5300	5700	6095	6485	6880	7280	8240
21	2255	2480	2400	2720	3060	3405	3775	4170	4545	4949	5325	5735	6125	6520	6940	7355	8295
22	2260	2485	2410	2730	3070	3420	3790	4180	4565	4950	5365	5760	6155	6575	6990	7385	8345
23	2265	2490	2430	2745	3085	3440	3810	4205	4590	4980	5395	5795	6190	6615	7025	7430	8400
24	2275	2500	2435	2755	3100	3450	3840	4225	4610	5015	5445	5815	6245	6655	7060	7490	8445
25	2275	2510	2450	2780	3120	3480	3855	4265	4655	5050	5470	5875	6280	6690	7100	7530	8490
26	2285	2520	2880	3250	3640	4015	3875	4285	4680	5100	5500	5915	6320	8735	7160	7580	8530
27	2295	2335	2885	3260	3655	4035	3910	4305	4695	5125	5530	5945	6355	6770	7200	7620	8585
28	2300	2535	2895	3265	3655	4045	3940	4325	4745	5160	5565	6975	6400	6815	7245	7675	8625
29	2315	2550	2910	3280	3675	4055	3950	4350	4765	5170	5590	6000	6425	6850	7285	7710	8870
30	2320	2555	2910	3290	3885	4070	3965	4370	4805	5210	5630	6045	6475	6900	7335	7770	
31	2330	2570	2935	3295	3695	4085	3995	4420	4815	5230	5645	6080	6505	5935	7380		
32	2330	2570	2945	3315	3710	4115	4040	4440	4850	5270	5685	6120	6555	6985	7420		
33	2340	2580	2950	3325	3730	4130	4070	4465	4880	5290	5725	6160	6595	7030			
34	2350	2590	2960	3325	3745	4140	4075	4490	4905	5320	5755	6190	6620				
35	2350	2605	2970	3345	3765	4160	4110	4520	4930	5355	5795	6230	6665				

High Voltage Travers

Weights

Load Bearing						Stopping and End					
Max Moment	27000	50000	80000	125000	250000	70000	170000	320000	620000	750000	Max Moment
Length Type	T/27	T/50	T/80	T/125	T/250	N/70	N/170	N/320	N/620	N/750	Length Type
1.20	45					95					1.20
1.40	50					100					1.40
1.60	55					110					1.60
1.80	60	95				120					1.80
2.00	65	100	150	190	390	125	190	310			2.00
2.20	70	105	155	200	400	130	200	320			2.20
2.40	75	110	165	210	410	140	210	340			2.40
2.60	80	115	170	220	420	145	220	350			2.60
2.80	80	120	180	230	430	150	230	360			2.80
3.00	85	125	190	240	440	160	240	380	680	900	3.00
3.20	90	130	200	250	450	165	250	390	700	920	3.20
3.40	90	135	210	260	470	170	260	400	730	940	3.40
3.60		140	215	270	480	175	270	420	750	970	3.60
3.80		145	225	280	500	180	280	430	770	990	3.80
4.00		150	235	290	510	185	290	440	790	1010	4.00
4.20			240	300	530		295	460	820	1040	4.20
4.40			250	305	540		300	470	840	1060	4.40
4.60			255	310	560		305	480	860	1080	4.60
4.80			260	320	570		310	490	880	1110	4.80
5.00			270	330	590		315	500	910	1130	5.00
5.20			275	335	600			520	930	1150	5.20
5.40			285	340	620			530	950	1180	5.40
5.60				350	630			540	970	1200	5.60
5.80				360	640			550	1000	1220	5.80
6.00				365	650			560	1020	1240	6.00
6.20				375	660				1050	1240	6.20
6.40					670				1070	1260	6.40
6.60					680				1090	1280	6.60
6.80					690				1110	1300	6.80
7.00					695				1130	1320	7.00
7.20					705					1340	7.20
7.40					710					1360	7.40
7.60					715					1375	7.60
7.80					720					1390	7.80
8.00					725					1405	8.00

High Voltage Console

Weights

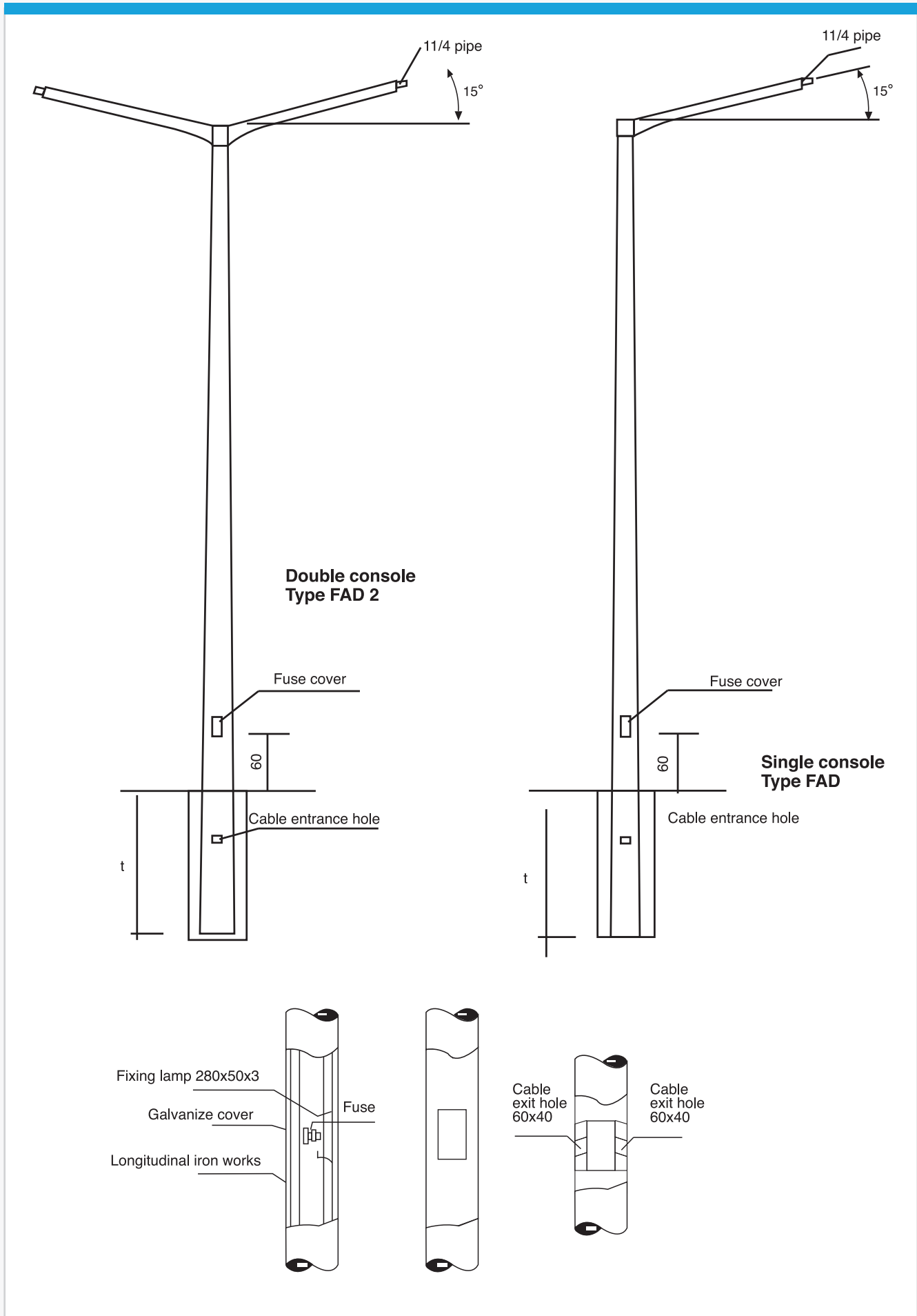
Load Bearing						Stopping and End					
Max Moment	27000	50000	80000	125000	250000	70000	170000	320000	620000	750000	Max Moment
Length Type	KT/27	KT/50	KT/80	KT/125	KT/250	KN/70	KN/170	KN/320	KN/620	KN/750	Length Type
1.00	40					75					1.00
1.20	40	60	90	125		80	125	210			1.20
1.40	45	65	100	135		90	135	220			1.40
1.60	50	70	110	145		95	145	230			1.60
1.80	50	75	120	155	275	100	155	240	430	550	1.80
2.00		80	130	160	290	105	165	260	450	550	2.00
2.20		90	140	170	300	110	170	270	470	600	2.20
2.40			150	180	320		175	280	490	620	2.40
2.60			160	190	330		180	290	510	650	2.60
2.80			170	200	340			300	530	670	2.80
3.00				210	360			310	550	690	3.00
3.20				220	370				570	710	3.20
3.40					380				580	740	3.40
3.60					390				600	760	3.60
3.80					395				610	780	3.80
4.00									620	800	4.00

While the weights of traverse / console are calculating, it is needed to add 250 kg to the amounts on list because of the weights of connecting.

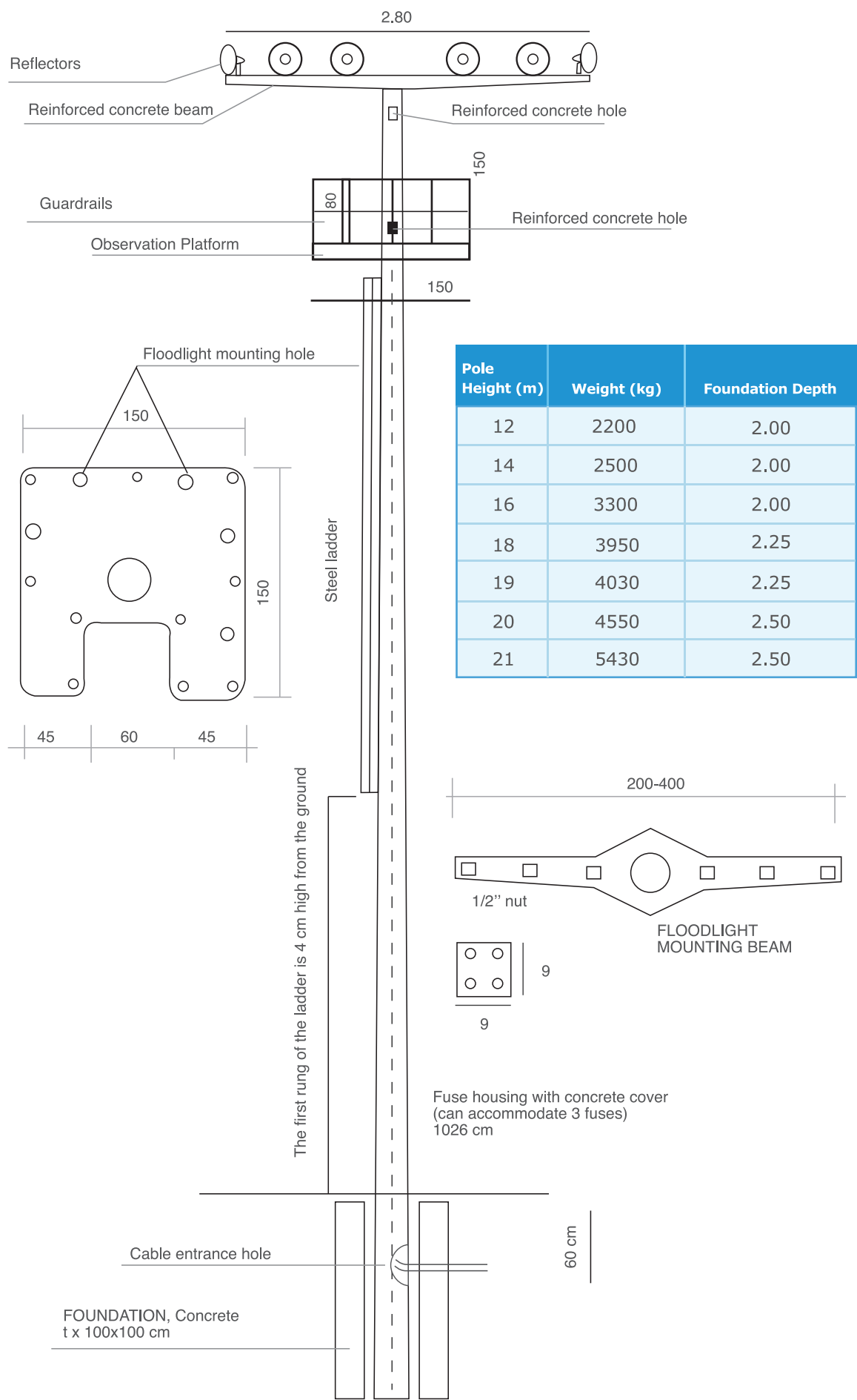
Low Voltage Traverse and Console Weights

Type	Weight	Type	Weight
t-60	6	Kt12-80	25
T-75	11	Kn2-100	50
n-60	11	ZKn2-110	55
N-75	13	14-140	40
N-90	16	14-160	45
2N-60	22	n4-170	70
2N-75	26	n4-200	75
2N-90	32	Zn4-220	80
PL-250	700	Kt4-160	65
PL-400	900	ZKn4-185	140
PRJ,PLATFORM	340	çn-8	45
PRJ,PLATFORM	370	çn-16	65
PRJ,PLATFORM	275		

Lighting Poles with Top-Mounted Console and Underground Power Feed, Type Fad



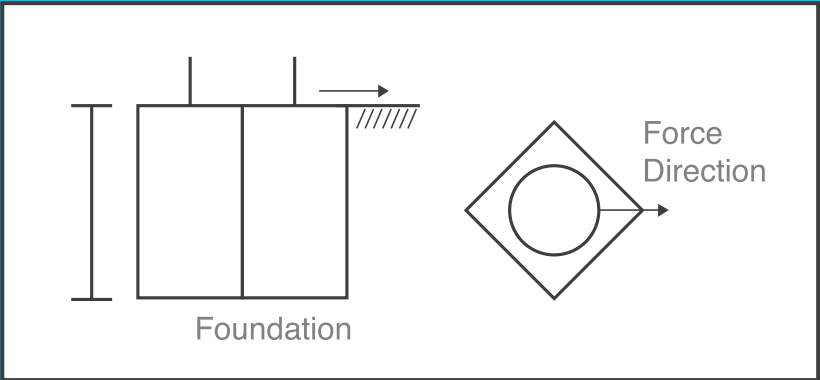
Floodlight Pole



Standart Concrete Pole

Basic Selection Table

Length Type	Length							
	9,30	10	11	12	14	16	18	20
1,50	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60
2	0,60	0,60	0,60	0,60	0,60	0,60	0,60	0,60
2,5	0,70	0,60	0,60	0,60	0,60	0,60	0,60	0,60
3	0,80	0,60	0,60	0,60	0,60	0,60	0,60	0,60
3,5	0,90	0,60	0,60	0,60	0,60	0,60	0,60	0,60
4	1,00	0,60	0,70	0,60	0,60	0,60	0,60	0,60
5	1,10	0,70	0,80	0,60	0,60	0,60	0,60	0,60
6	1,20	0,80	0,90	0,60	0,60	0,60	0,60	0,60
8	1,40	1,00	1,10	0,60	0,60	0,70	0,60	0,60
10	1,50	1,20	1,20	0,60	0,70	0,90	0,60	0,70
12	1,70	1,30	1,40	0,70	0,90	0,90	0,70	0,80
16	1,90	1,50	1,60	0,90	1,00	1,20	0,90	1,00
20	2,20	1,70	1,80	1,10	1,20	1,30	1,10	1,20
25	2,40	1,90	2,00	1,30	1,40	1,60	1,30	1,40
30	2,60	2,20	2,20	1,40	1,60	1,80	1,50	1,60
FOUNDED	1,2		1,5		2,0			2,25





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