

**КАТАЛОШКИ ПОДАТОЦИ
ЗА ЧЕЛИЧНО-РЕШЕТКАСТИ СТОЛБОВИ
ПРОИЗВОД НА ЕМО - ОХРИД**



DALEKOVODNI STUBOVI

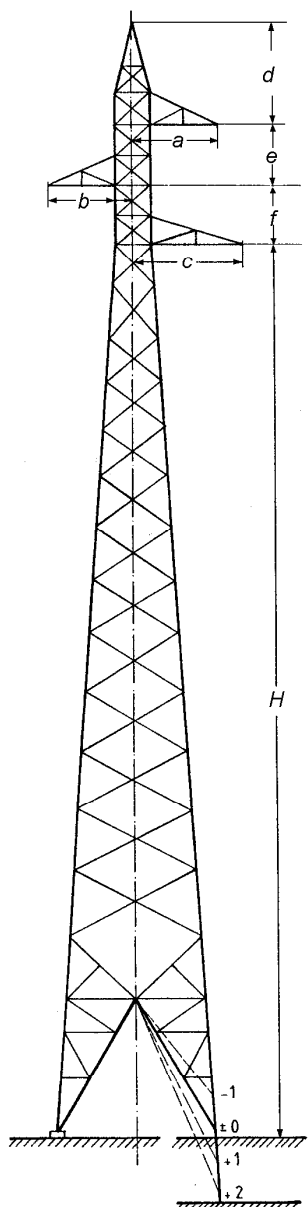
Napon Voltage 110 kV

TRANSMISSION LINE TOWERS

Stub tip Tower type S

OSNOVNI PODACI
BASIC DATA

oznaka stuba tower sign	S
nazivni napon rated voltage	110 kV
provodnici conductors	AL - Fe; 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9,0 \text{ daN/mm}^2$
zaštitno uže earth wire	Fell; 1 x 500 mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 26,0 \text{ daN/mm}^2$
srednji raspon average span	asr = 350 m
gravitacioni raspon gravitation span	agr = 750 m
pritisak vetra wind preasure	$p = 75 \text{ daN/m}^2$
dodatni teret additional load	$DT = 1,0 \times 0,18 \sqrt{d} \text{ daN/m}$
ugao skretanja turning angle	$\alpha = 0^\circ$



DIMENZIJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS

H (m)	12,90	14,80	16,80	17,80	18,80	19,80	20,80	
G (kp)	1488	1673	1892	2007	2163	2282	2397	
H (m)	21,80	22,80	23,80	24,80	25,80	26,80	27,80	28,80
G (kp)	2553	2598	2712	2868	2954	3069	3225	3383
dimenzije glave dimensions of head (mm)	a				2600			
	b				2600			
	c				3550			
	d				3000			
	e				1850			
	f				1850			

TABELA SILA
TABLE OF FORCES

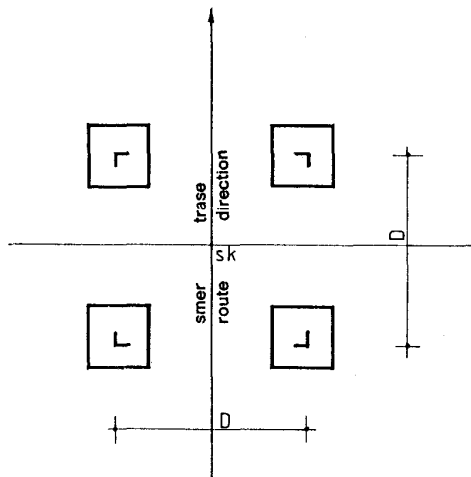
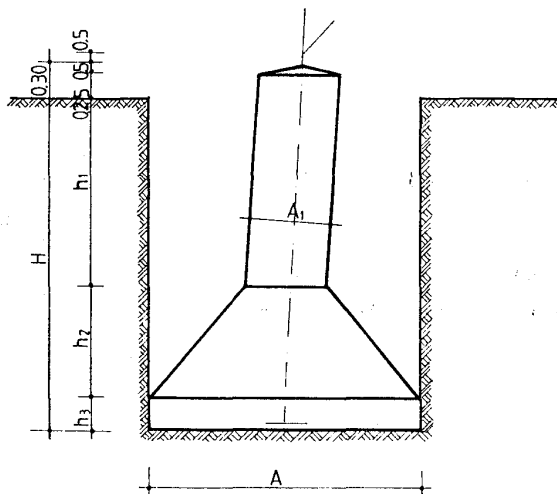
slučaj opterećenja loading case		V _x	V _y	V _z	Z _x	Z _y	Z _z	S _x	S _y
		daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²
normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	-	-	1542	-	-	704	-	-
	b	575	-	882	237	-	290	2,6 x 75	-
	c	-	144	882	-	60	290	-	2,6 x 75
vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	I	a	-	1272	1542	-	-	-	-
		b	-	-	1542	-	-	704	-
	II	c	-	-	-	-	644	704	-
		d	-	-	1542	-	-	-	-



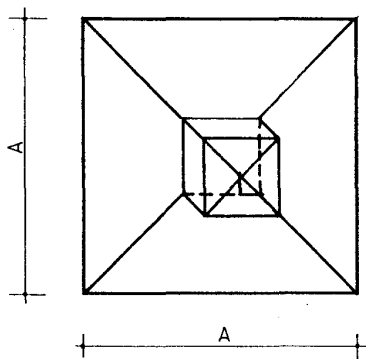
Podaci za temelje
Foundation data

Stub tip
Tower type S

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA

NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehantičke karakteristike tla

Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	12,90	14,80	16,80	17,80	18,80	19,80	20,80	21,80	22,80	23,80
osovinski raspon D (mm) - spacing D (mm)	2756	3020	3300	3440	3580	3720	3860	4000	4140	4280
								24,80	25,80	26,80
								4420	4560	4700
									27,80	28,80
									4840	4980

nosivost tla σ daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A ₁ (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforce- ment (kgr.)
(1,0 - 2,0) + P . V .	1,90	0,40	2,20	1,40	0,60	0,20	31,78	7,60	24,18	86,72
1,0	1,85	0,40	2,20	1,50	0,50	0,20	30,12	7,20	23,60	86,72
1,5	1,50	0,40	2,20	1,50	0,50	0,20	19,82	4,92	14,90	86,72
2,0	1,30	0,40	2,20	1,50	0,50	0,20	14,86	4,08	10,78	86,72
3,0 - 5,0	1,15	0,40	2,20	1,50	0,50	0,23	11,63	3,48	8,15	86,72



DALEKOVODNI STUBOVI

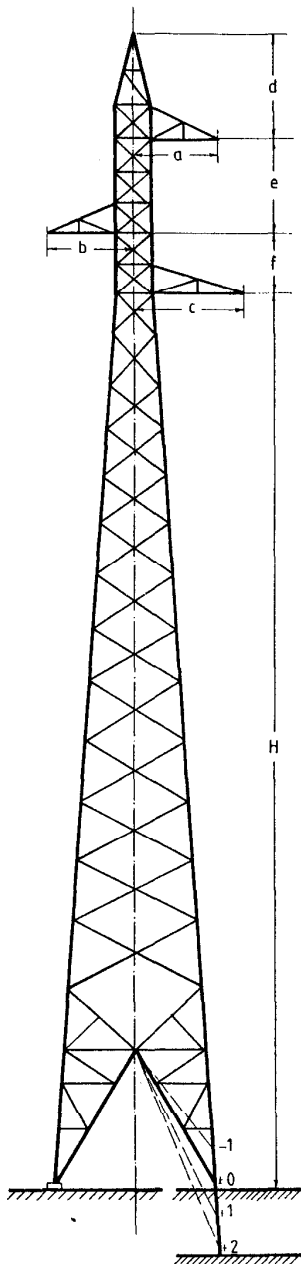
Napon
Voltage 110 kV

TRANSMISSION LINE TOWERS

Stub tip
Tower type SL

OSNOVNI PODACI
BASIC DATA

oznaka stuba tower sign	SL
nazivni napon rated voltage	110 kV
provodnici conductors	AL - Fe; 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9.0 \text{ daN/mm}^2$
zaštitno uže earth wire	Felll; 1 x 50 mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 26,0 \text{ daN/mm}^2$
srednji raspon average span	asr = 500 m
gravitacioni raspon gravitation span	agr = 750 m
pritisak vetra wind pressure	$p = 75 \text{ daN/m}^2$
dotatni teret additional load	$DT = 1,0 \times 0,18 \sqrt{d} \text{ daN/m}$
ugao skretanja turning angle	$\alpha = 0^\circ$



DIMENZIJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS

H (m)	12,90	14,80	16,80	17,80	18,80	19,80	20,80	
G (kp)	1712	1920	2172	2296	2462	2595	2722	
H (m)	21,80	22,80	23,80	24,80	25,80	26,80	27,80	28,80
G (kp)	2886	2935	3060	3226	3326	3452	3617	3770
dimenzije glave dimensions of head (mm)	a				2600			
	b				2600			
	c				3550			
	d				3000			
	e				2950			
	f				1850			

TABELA SILA
TABLE OF FORCES

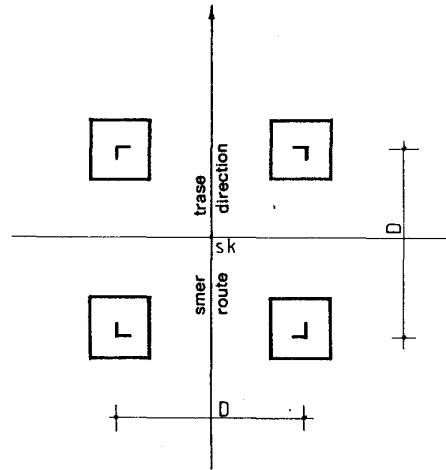
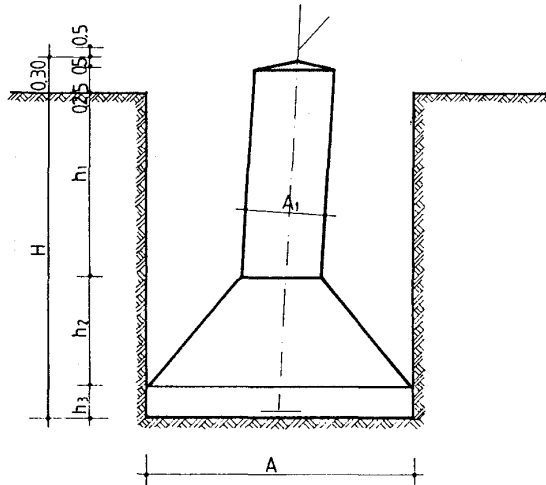
slučaj opterećenja loading case		V _x	V _y	V _z	Z _x	Z _y	Z _z	S _x	S _y
		daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²
normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	-	-	1542	-	-	704	-	-
	b	822	-	882	338	-	290	2,6 x 75	-
	c	-	206	882	-	85	290	-	2,6 x 75
vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	I	a	-	1272	1542	-	-	-	-
		b	-	-	1542	-	-	704	-
	II	c	-	-	-	-	644	704	-
		d	-	-	1542	-	-	-	-



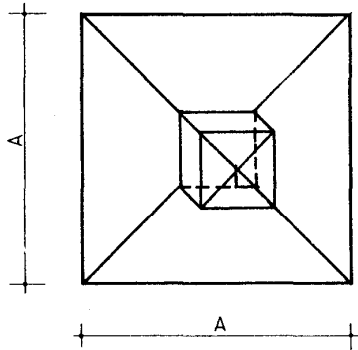
Podaci za temelje
Foundation data

Stub tip
Tower type SL

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA
NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehaničke karakteristike tla

Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	12,90	14,80	16,80	17,80	18,80	19,80	20,80	21,80	22,80	23,80
osovinski raspon D (mm) - spacing D (mm)	27 56	30 20	33 00	34 40	35 80	37 20	38 60	40 00	41 40	42 80

											24,80	25,80	26,80	27,80	28,80
											44 20	45 60	47 00	48 40	49 80

nosivost tla σ daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A ₁ (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforce- ment (kgr.)
(1,0 · 2,0) + P · V.	2.25	0,40	2.20	1,20	0,80	0,20	45,10	11,52	33,58	103,53
1,0	2.05	0,40	2.20	1,45	0,55	0,20	37,00	8,80	28,80	103,53
1,5	1.65	0,40	2.20	1,45	0,55	0,20	24,00	5,88	18,12	103,53
2,0	1.45	0,40	2.20	1,45	0,55	0,20	18,48	4,84	13,64	103,53
3,0 - 5,0	1.20	0,40	2.20	1,45	0,55	0,20	12,66	3,76	8,90	103,53



DALEKOVODNI STUBOVI

Napon
Voltage

110 kV

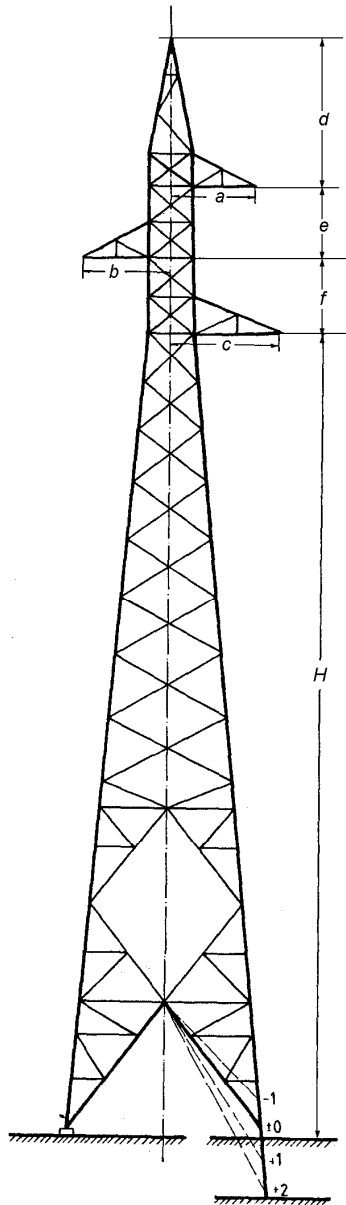
TRANSMISSION LINE TOWERS

Stub tip
Tower type

A 150

OSNOVNI PODACI
BASIC DATA

oznaka stuba tower sign	A 150
nazivni napon rated voltage	110 kV
provodnici conductors	AL - Fe; 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9,0 \text{ daN/mm}^2$
zaštitno uže earth wire	Fell; 1 x 50 mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 26,0 \text{ daN/mm}^2$
srednji raspon average span	asr = 350 m
gravitacioni raspon gravitation span	agr = 750 m
pritisak vetra wind pressure	p = 75 daN/m ²
dodatni teret additional load	DT = 1,0 x 0,18 \sqrt{d} daN/m
ugao skretanja turning angle	$\alpha = 150 - 180^\circ$



DIMENZIJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS

H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00
G (kp)	2565	2866	3008	3174	3422	3565	3731
H (m)	21,00	22,00	23,00	24,00	25,00	26,00	27,00
G (kp)	3949	4092	4258	4483	4626	4792	5042
dimenzije glave dimensions of head (mm)	a	2600					
	b	2700					
	c	3550					
	d	4550					
	e	2250					
	f	2250					

TABELA SILA
TABLE OF FORCES

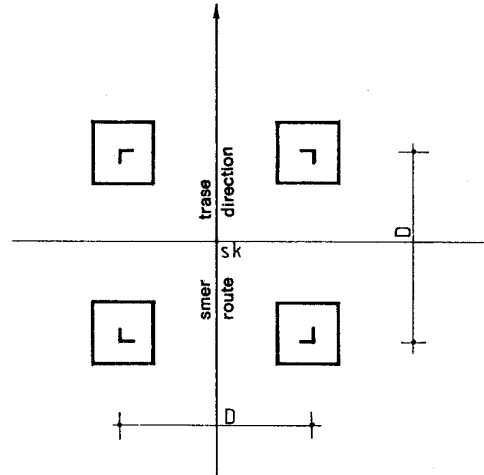
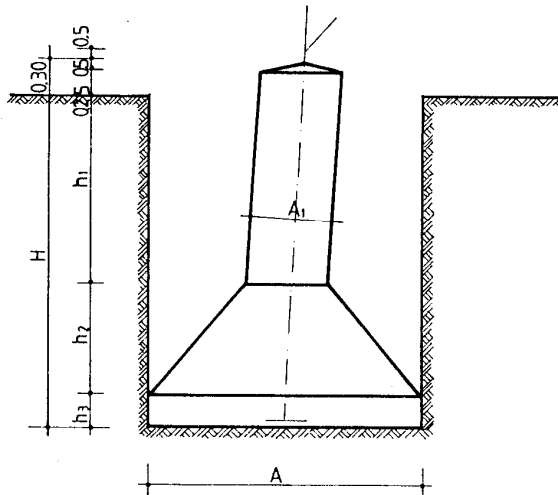
slučaj opterećenja loading case		Vx	Vy	Vz	Zx	Zy	Zz	Sx	Sy	
		daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²	
normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	150	1317	-	1710	667	-	704	-	
		180	-	-	1710	-	-	704	-	
	b	150	1453	-	1022	682	-	290	2,6 x 75	
		180	576	-	1022	237	-	290	2,6 x 75	
	c	150	878	144	1022	445	60	290	-	
		180	-	144	1022	-	60	290	-	
član 76 tačka 2 article 76 item 2		150	439	1638	1022	223	829	920	-	
		180	-	1695	1022	-	858	290	-	
vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	I	a	150	659	2456	1710	-	-	-	-
		180	-	2543	1710	-	-	-	-	
	b	150	1317	-	1710	667	-	704	-	
		180	-	-	1710	-	-	704	-	
	II	c	150	-	-	-	333	1243	704	-
		180	-	-	-	-	1287	704	-	
	d	150	1317	-	1710	-	-	-	-	
		180	-	-	1710	-	-	-	-	



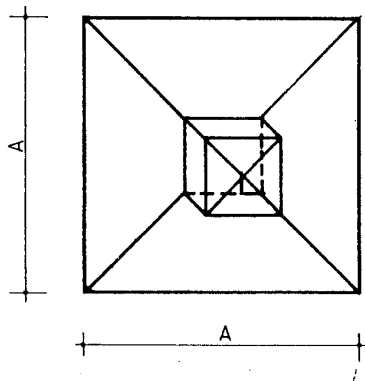
Podaci za temelje
Foundation data

Stub tip
Tower type A 150

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA
NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehaničke karakteristike tla

Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00	21,00	22,00	23,00
osovinski raspon D (mm) - spacing D (mm)	3612	3994	4184	4375	4566	4756	4947	5137	5328	5519

									24,00	25,00	26,00	27,00
									5709	5900	6091	6281

nosivost tla σ_z daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A ₁ (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforce- ment (kgr.)
(1,0 - 2,0) + P . V .	2,55	0,40	2,20	1,10	0,90	0,20	57,20	15,28	41,92	126,88
1,0	2,45	0,40	2,20	1,30	0,70	0,20	52,80	13,20	40,20	126,88
1,5	1,95	0,40	2,20	1,30	0,70	0,20	33,46	8,48	24,98	126,88
2,0	1,70	0,40	2,20	1,30	0,70	0,20	25,42	6,80	18,62	126,88
(3,0 - 5,0)	1,45	0,40	2,20	1,30	0,70	0,20	18,48	5,32	13,15	126,88



Elektroindustrija i inženjering

OHRID - JUGOSLAVIJA

DALEKOVODNI STUBOVI

Napon Voltage

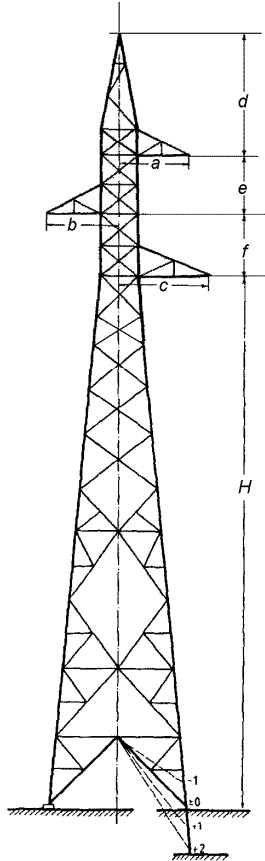
110 kV

TRANSMISSION LINE TOWERS

Stub tip Tower type

A - 120

**OSNOVNI PODACI
BASIC DATA**



oznaka stuba tower sign	A 120
nazivni napon rated voltage	110 kV
provodnici conductors	AL - Fe: 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9,0 \text{ daN/mm}^2$
zaštitno uže earth wire	Fell; 1 x 50/mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 26,0 \text{ daN/mm}$
srednji raspon average span	asr = 350 m
gravitacioni raspon gravitation span	agr = 750 m
pritisk vetra wind pressure	p = 75 daN/m ²
dotadni teret additional load	DT = 1,0 x 0,18 \sqrt{d} daN/m
ugao skretanja turning angle	$\alpha = 120^\circ - 150^\circ$

**DIMENZJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS**

H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00
G (kp)	3080	3455	3632	3848	4109	4287	4487
H (m)	21,00	22,00	23,00	24,00	25,00	26,00	27,00
G (kp)	4653	4836	5059	5454	5609	5857	6235
dimenzije glave dimensions of head (mm)	a	2700					
	b	2700					
	c	3650					
	d	4700					
	e	2250					
	f	2250					

**TABELA SILA
TABLE OF FORCES**

**TABELA DIFERENCIJALNIH SILA
TABLE OF DIFFERENTIAL FORCES**
 $\sigma_v 1/2 = 9/5 \text{ daN/mm}^2$ $\sigma_z 1/2 = 26/15 \text{ daN/mm}^2$

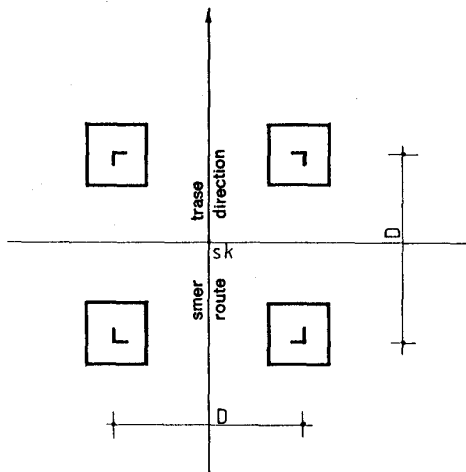
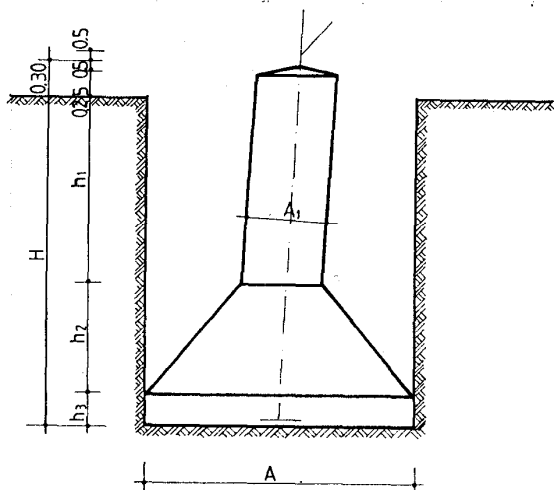
Vx	Vy	Vz	Zx	Zy	Zz	Sx	Sy	slučaj opterećenja loading case	Vx	Vy	Vz	Zx	Zy	Zz	Sx	Sy				
daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²		daN	daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²			
2543	-	1710	1287	-	704	-	-	120	normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	120	1978	980	1710	1015	472	704	-	-	
1317	-	1710	667	-	704	-	-	150		a	150	1024	1092	1710	526	526	704	-	-	
2271	-	1022	1095	-	290	2,6 x 75	-	120		b	120	1895	653	1022	914	315	290	2,6 x 75	-	
1453	-	1022	682	-	290	2,6 x 75	-	150		b	150	1258	728	1022	587	351	290	2,6 x 75	-	
1696	290	1022	858	120	290	-	2,6 x 75	120		c	120	1319	940	1022	677	433	290	-	2,6 x 75	
878	144	1022	445	60	290	-	2,6 x 75	150		c	150	683	872	1022	351	410	290	-	2,6 x 75	
848	1468	1022	429	743	290	-	-	120		član 76 tačka 2 article 76 item 2		120	848	1468	1022	429	743	290	-	-
439	1638	1022	223	829	290	-	-	150				150	439	1638	1022	222	829	290	-	-
1272	2202	1710	-	-	-	-	-	120		vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	a	120	1272	2202	1710	-	-	-	-	-
659	2456	1710	-	-	-	-	-	150			a	150	659	2457	1710	-	-	-	-	-
2543	-	1710	1287	-	704	-	-	120	b		120	1978	980	1710	1015	472	704	-	-	
1317	-	1710	667	-	704	-	-	150	b		150	1024	1092	1710	526	526	704	-	-	
-	-	-	664	1114	704	-	-	120	c		120	-	-	-	644	1115	704	-	-	
-	-	-	333	1243	704	-	-	150	c		150	-	-	-	333	1244	704	-	-	
2543	-	1710	-	-	-	-	-	120	II		d	120	1978	980	1710	-	-	-	-	-
1317	-	1710	-	-	-	-	-	150			d	150	1024	1092	1710	-	-	-	-	-



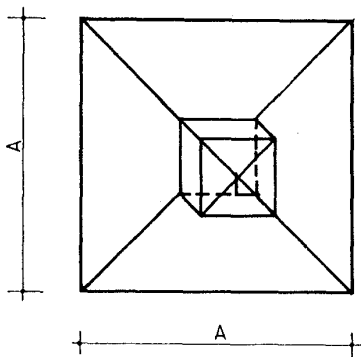
Podaci za temelje
Foundation data

Stub tip
Tower type A - 120

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA
NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehaničke karakteristike tla

Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00	21,00	22,00	23,00	
osovinski raspon D (mm) - spacing D (mm)	3967	4372	4575	4780	4981	5184	5386	5589	5792	5995	
								24,00	25,00	26,00	27,00
								6198	6400	6603	6806

nosivost tla daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforce- ment (kg)
(1,0 - 2,0) + P. V.	3,15	0,40	2,40	1,10	1,00	0,30	95,20	27,88	67,32	282,36
1,0	3,00	0,40	2,40	1,20	0,90	0,30	86,40	24,40	62,80	282,30
1,5	2,40	0,40	2,40	1,20	0,90	0,30	55,28	16,08	39,20	282,36
2,0	2,05	0,40	2,40	1,20	0,90	0,30	40,32	15,20	25,12	282,36
(3,0 - 5,0)	1,80	0,40	2,40	1,20	0,90	0,30	31,12	9,76	21,36	282,36



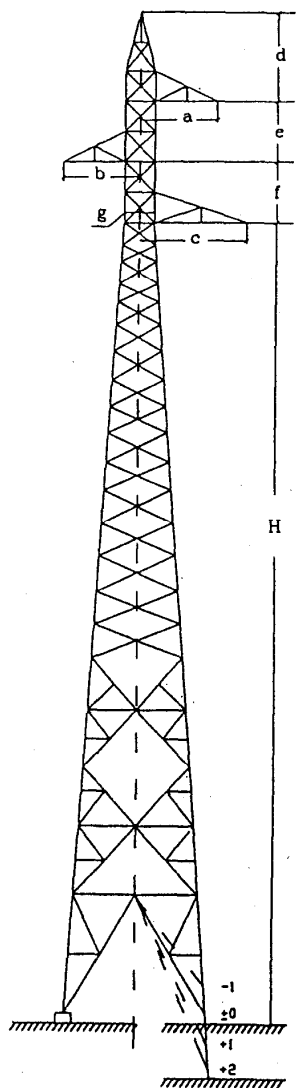
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СТОЛБ ЗА ВИСОКОНАПОНСКИ ВОДОВИ
HIGH VOLTAGE TRANSMISSION LINE TOWER

110 kV



ОЗНАКА НА СТОЛБОТ TOWER SIGN	S1
НОМИНАЛЕН НАПОН RATED VOLTAGE	110 kV
ФАЗНИ ПРОВОДНИЦИ CONDUCTORS	Al/Fe 240/40 mm ²
НАПРЕГАЊЕ НА ПРОВОДНИКОТ TENSION OF CONDUCTORS	$\sigma = 9,5 \text{ daN/mm}^2$
ЗАШТИТНО ЈАЖЕ EARTH WIRE	EA1Mg1/Fe 95/55 mm ²
НАПРЕГАЊЕ НА ЗАШТИТНОТО ЈАЖЕ TENSION OF EARTH WIRE	$\sigma = 15,0 \text{ daN/mm}^2$
СРЕДЕН РАСПОН WIND SPAN	$a_{sr} = 370 \text{ m}$
ГРАВИТАЦИОНЕН РАСПОН GRAVITATION SPAN	$a_{gr} = 550 \text{ m}$
ПРИТИСОК НА ВЕТЕП WIND PREASURE	$P_v = 60 \text{ daN/m}^2$
ДОДАТНО ОПТОВАРУВАЊЕ ADDITIONAL LOAD	$DT = 1,0 \times 0,18 \sqrt{v} \text{ daN/m}^2$
АГОЛ НА СВРТУВАЊЕ TURNING ANGLE	$\alpha = 0^\circ$

ДИМЕНЗИИ НА ГЛАВА
HEAD DIMENSIONS OF TOWER

a	2,600 (m)
b	2,800 (m)
c	3,550 (m)
d	3,000 (m)
e	3,000 (m)
f	1,500 (m)
g	1,064 (m)
D	4,800 (m)

ДОМЕН НА ПРИМЕНА НА СТОЛБОТ
DOMAIN USAGE OF TOWER

$P_v \text{ (daN/m}^2\text{)}$	-	60	75
FDT (daN/m ²)	-	1,0	1,0
a (m)	-	-	-
$a_{sr} \text{ (m)}$	-	370	260
FDT (daN/m ²)	-	1,0	1,6
$P_v \text{ (daN/m}^2\text{)}$	-	60	60
a (m)	-	-	-
$a_{gr} \text{ (m)}$	-	550	430

ТАБЕЛА НА СИЛИ
TABLE OF FORCES

Случаи на оптоварувања Loading cases		V_x (daN)	V_y (daN)	V_z (daN)	Z_x (daN)	Z_y (daN)	Z_z (daN)	S_x (daN/m ²)	S_y (daN/m ²)	
нормални оптоварувања член 68 т.1 normal cases article 68 it.1	a	-	-	1157	-	-	867	-	-	
	b	486	-	669	384	-	455	2,6 x 60	-	
	c	-	122	669	-	96	455	-	2,6 x 60	
вонредни оптоварувања член 69 т.2б special cases article 69 it.2b	I	a	-	1342	1157	-	-	-	-	
		b	-	-	1157	-	-	867	-	-
	II	c	-	-	-	-	1333	867	-	-
		d	-	-	1157	-	-	-	-	-

ВИСИНА И МАСА НА СТОЛБОТ
HEIGHT AND MASS OF THE TOWER

ВИСИНА H(m)	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0
МАСА m(kg)	1420	1490	1560	1630	1700	1770	1840	1910	2010	2130	2240
ВИСИНА H(m)	20,0	21,0	22,0	23,0	24,0	25,0	26,0	27,0	28,0	29,0	30,0
МАСА m(kg)	2395	2510	2630	2780	2900	3000	3100	3200	3300	3460	3620



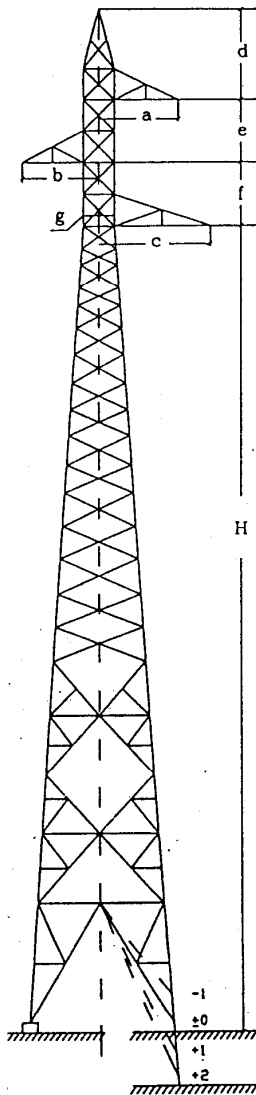
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СТОЛБ ЗА ВИСОКОНАПОНСКИ ВОДОВИ
HIGH VOLTAGE TRANSMISSION LINE TOWER

110 kV



ОЗНАКА НА СТОЛБОТ TOWER SIGN	S2
НОМИНАЛЕН НАПОН RATED VOLTAGE	110 kV
ФАЗНИ ПРОВОДНИЦИ CONDUCTORS	Al/Fe 240/40 mm ²
НАПРЕГАЊЕ НА ПРОВОДНИКОТ TENSION OF CONDUCTORS	$\sigma = 9,5$ daN/mm ²
ЗАШТИТНО ЈАЖЕ EARTH WIRE	EAlMg1/Fe 95/55 mm ²
НАПРЕГАЊЕ НА ЗАШТИТНОТО ЈАЖЕ TENSION OF EARTH WIRE	$\sigma = 15,0$ daN/mm ²
СРЕДЕН РАСПОН WIND SPAN	$a_{sr} = 330$ m
ГРАВИТАЦИОНЕН РАСПОН GRAVITATION SPAN	$a_{gr} = 500$ m
ПРИТИСОК НА ВЕТЕР WIND PREASSURE	$P_v = 75$ daN/m ²
ДОДАТНО ОПТОВАРУВАЊЕ ADDITIONAL LOAD	$DT = 1,6 \times 0,18 \sqrt{v}$ daN/m ²
АГОЛ НА СВРТУВАЊЕ TURNING ANGLE	$\alpha = 0^\circ$

ДИМЕНЗИИ НА ГЛАВА
HEAD DIMENSIONS OF TOWER

a	2,700 (m)
b	2,700 (m)
c	3,650 (m)
d	3,200 (m)
e	3,200 (m)
f	1,600 (m)
g	1,064 (m)
D	4,890 (m)

ДОМЕН НА ПРИМЕНА НА СТОЛБОТ
DOMAIN USAGE OF TOWER

P_v (daN/m ²)	60	75	90
FDT (daN/m)	1,6	1,6	1,6
a (m)	-	-	-
a_{sr} (m)	450	330	240
FDT (daN/m)	1,0	1,6	2,5
P_v (daN/m ²)	75	75	75
a (m)	-	-	-
a_{gr} (m)	640	500	376

ТАБЕЛА НА СИЛИ
TABLE OF FORCES

Случаи на оптоварувања Loading cases	V_x (daN)	V_y (daN)	V_z (daN)	Z_x (daN)	Z_y (daN)	Z_z (daN)	S_x (daN/m ²)	S_y (daN/m ²)	
нормални оптоварувања член 68 т.1 normal cases article 68 it.1	a	-	-	1319	-	-	1013	-	
	b	542	-	620	428	-	414	2,6 x 75	
	c	-	136	620	-	107	414	-	
вонредни оптоварувања член 69 т.2б special cases article 69 it.2b	I	a	-	1342	1319	-	-	-	
		b	-	-	1319	-	-	1013	-
	II	c	-	-	-	-	1333	1013	-
		d	-	-	1319	-	-	-	-

ВИСИНА И МАСА НА СТОЛБОТ
HEIGHT AND MASS OF THE TOWER

ВИСИНА H(m)	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0
МАСА m(kg)	1590	1670	1750	1830	1910	1990	2070	2150	2275	2400	2525
ВИСИНА H(m)	20,0	21,0	22,0	23,0	24,0	25,0	26,0	27,0	28,0	29,0	30,0
МАСА m(kg)	2685	2825	2950	3150	3250	3350	3450	3550	3680	3745	3900



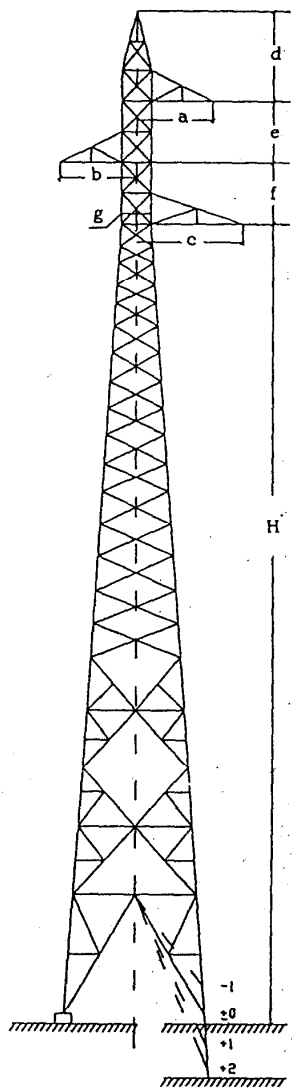
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СТОЛБ ЗА ВИСОКОНАПОНСКИ ВОДОВИ
HIGH VOLTAGE TRANSMISSION LINE TOWER

110 kV



ОЗНАКА НА СТОЛБОТ TOWER SIGN	S3
НОМИНАЛЕН НАПОН RATED VOLTAGE	110 kV
ФАЗНИ ПРОВОДНИЦИ CONDUCTORS	Al/Fe 240/40 mm ²
НАПРЕГАЊЕ НА ПРОВОДНИКОТ TENSION OF CONDUCTORS	$\sigma = 9,5$ daN/mm ²
ЗАШТИТНО ЈАЖЕ EARTH WIRE	EA1Mg1/Fe 95/55 mm ²
НАПРЕГАЊЕ НА ЗАШТИТНОТО ЈАЖЕ TENSION OF EARTH WIRE	$\sigma = 15,0$ daN/mm ²
СРЕДЕН РАСПОН WIND SPAN	$a_{sr} = 300$ m
ГРАВИТАЦИОНЕН РАСПОН GRAVITATION SPAN	$a_{gr} = 450$ m
ПРИТИСОК НА ВЕТЕП WIND PREASSURE	$P_v = 90$ daN/m ²
ДОДАТНО ОПТОВАРУВАЊЕ ADDITIONAL LOAD	$DT = 2,5 \times 0,18 \sqrt{V}$ daN/m'
АГОЛ НА СВРТУВАЊЕ TURNING ANGLE	$\alpha = 0^\circ$

ДИМЕНЗИИ НА ГЛАВА
HEAD DIMENSIONS OF TOWER

a	2,800 (m)
b	2,800 (m)
c	3,750 (m)
d	3,400 (m)
e	3,400 (m)
f	1,700 (m)
g	1,150 (m)
D	5,180 (m)

ДОМЕН НА ПРИМЕНА НА СТОЛБОТ
DOMAIN USAGE OF TOWER

P_v (daN/m ²)	75	90	110
FDT (daN/m)	2,5	2,5	2,5
a (m)	-	-	-
a_{sr} (m)	390	300	220
FDT (daN/m)	1,6	2,5	4,0
P_v (daN/m ²)	90	90	90
a (m)	-	-	-
a_{gr} (m)	600	450	320

ТАБЕЛА НА СИЛИ
TABLE OF FORCES

Случај на оптоварувања Loading cases	Vx (daN)	Vy (daN)	Vz (daN)	Zx (daN)	Zy (daN)	Zz (daN)	Sx (daN/m ²)	Sy (daN/m ²)	
нормални оптоварувања член 68 т.1 normal cases article 68 it.1	a	-	-	1543	-	-	1215	-	
	b	591	-	570	467	-	373	2,6 x 90	
	c	-	148	570	-	117	373	2,6 x 90	
вонредни оптоварувања член 69 т.2б special cases article 69 it.2b	I	a	-	1342	1543	-	-	-	
		b	-	-	1543	-	-	1215	-
	II	c	-	-	-	-	1333	1215	-
		d	-	-	1543	-	-	-	-

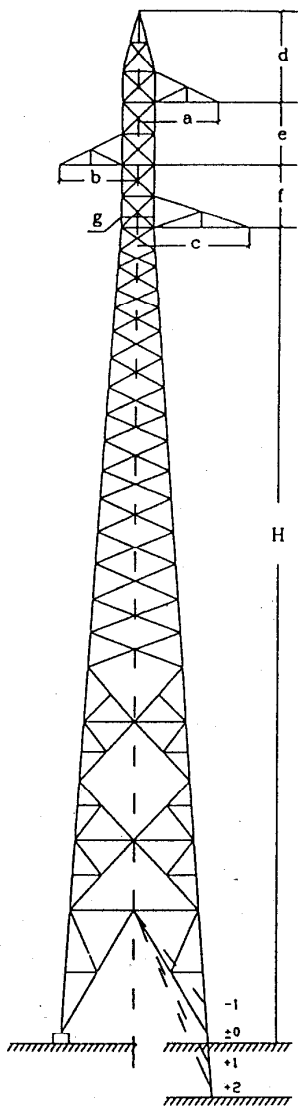
ВИСИНА И МАСА НА СТОЛБОТ
HEIGHT AND MASS OF THE TOWER

ВИСИНА H(m)	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0
МАСА m(kg)	1750	1830	1910	1990	2070	2150	2230	2310	2445	2570	2695
ВИСИНА H(m)	20,0	21,0	22,0	23,0	24,0	25,0	26,0	27,0	28,0	29,0	30,0
МАСА m(kg)	2855	3000	3180	3350	3485	3620	3755	3890	4025	4180	4350



СТОЛБ ЗА ВИСОКОНАПОНСКИ ВОДОВИ
HIGH VOLTAGE TRANSMISSION LINE TOWER

110 kV



ОЗНАКА НА СТОЛБОТ TOWER SIGN	A1-150
НОМИНАЛЕН НАПОН RATED VOLTAGE	110 kV
ФАЗНИ ПРОВОДНИЦИ CONDUCTORS	Al/Fe 240/40 mm ²
НАПРЕГАЊЕ НА ПРОВОДНИКОТ TENSION OF CONDUCTORS	$\sigma = 9,5 \text{ daN/mm}^2$
ЗАШТИТНО ЈАЖЕ EARTH WIRE	EA1Mg1/Fe 95/55 mm ²
НАПРЕГАЊЕ НА ЗАШТИТНОТО ЈАЖЕ TENSION OF EARTH WIRE	$\sigma = 15,0 \text{ daN/mm}^2$
СРЕДЕН РАСПОН WIND SPAN	$a_{sr} = 350 \text{ m}$
ГРАВИТАЦИОНЕН РАСПОН GRAVITATION SPAN	$a_{gr} = 700 \text{ m}$
ПРИТИСОК НА ВЕТЕР WIND PREASURE	$P_v = 75 \text{ daN/m}^2$
ДОДАТНО ОПТОВАРУВАЊЕ ADDITIONAL LOAD	$DT = 1,6 \times 0,18 \sqrt{d} \text{ daN/m}^2$
АГОЛ НА СВРТУВАЊЕ TURNING ANGLE	$\alpha = 30^\circ$

ДИМЕНЗИИ НА ГЛАВА
HEAD DIMENSIONS OF TOWER

a	2,800 (m)
b	2,800 (m)
c	3,750 (m)
d	4,900 (m)
e	3,200 (m)
f	1,600 (m)
g	1,286 (m)
D	4,890 (m)

ДОМЕН НА ПРИМЕНА НА СТОЛБОТ
DOMAIN USAGE OF TOWER

$P_v \text{ (daN/m}^2\text{)}$	60	75	90
FDT (daN/m ²)	1,6	1,6	1,6
a (m)	-	-	-
$a_{sr} \text{ (m)}$	480	350	260
FDT (daN/m ²)	1,0	1,6	2,5
$P_v \text{ (daN/m}^2\text{)}$	75	75	75
a (m)	-	-	-
$a_{gr} \text{ (m)}$	890	700	520

ТАБЕЛА НА СИЛИ
TABLE OF FORCES

Случаи на оптоварувања Loading cases	V _x (daN)	V _y (daN)	V _z (daN)	Z _x (daN)	Z _y (daN)	Z _z (daN)	S _x (daN/m ²)	S _y (daN/m ²)	
нормални оптоварувања член 68 т.1 normal cases article 68 it.1	a	1389	-	1977	1379	-	1418	-	
	b	1501	-	976	1374	-	580	2,6 x 75	
	c	926	149	976	919	117	580	-	
член 68 т.2 art.68 ит.2	463	1728	976	460	1717	580	-	-	
вопнедни оптоварувања член 69 т.2б special cases article 69 it.2b	I	a	694	2592	1977	-	-	-	-
		b	1389	-	1979	1379	-	1418	-
	II	c	-	-	-	690	2575	1418	-
		d	1389	-	1979	-	-	-	-

ВИСИНА И МАСА НА СТОЛБОТ
HEIGHT AND MASS OF THE TOWER

ВИСИНА H(m)	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0
МАСА m(kg)	2400	2500	2600	2700	2800	3000	3200	3400	3600	3800	4000
ВИСИНА H(m)	20,0	21,0	22,0	23,0	24,0	25,0	26,0	27,0			
МАСА m(kg)	4200	4400	4600	4800	5000	5200	5400	5650			



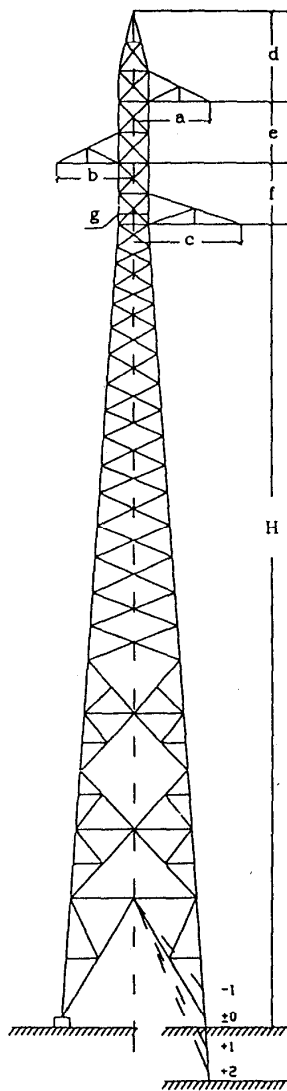
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СТОЛБ ЗА ВИСОКОНАПОНСКИ ВОДОВИ
HIGH VOLTAGE TRANSMISSION LINE TOWER

110 kV



ОЗНАКА НА СТОЛБОТ TOWER SIGN	A1-120
НОМИНАЛЕН НАПОН RATED VOLTAGE	110 kV
ФАЗНИ ПРОВОДНИЦИ CONDUCTORS	Al/Fe 240/40 mm ²
НАПРЕГАЊЕ НА ПРОВОДНИКОТ TENSION OF CONDUCTORS	$\sigma = 9,5 \text{ daN/mm}^2$
ЗАШТИТНО ЈАЖЕ EARTH WIRE	EAlMg1/Fe 95/55 mm ²
НАПРЕГАЊЕ НА ЗАШТИТНОТО ЈАЖЕ TENSION OF EARTH WIRE	$\sigma = 15,0 \text{ daN/mm}^2$
СРЕДЕН РАСПОН WIND SPAN	$a_{sr} = 350 \text{ m}$
ГРАВИТАЦИОНЕН РАСПОН GRAVITATION SPAN	$a_{gr} = 700 \text{ m}$
ПРИТИСОК НА ВЕТЕР WIND PREASSURE	$P_v = 75 \text{ daN/m}^2$
ДОДАТНО ОПТОВАРУВАЊЕ ADDITIONAL LOAD	$DT = 1,6 \times 0,18 \sqrt{D} \text{ daN/m}^2$
АГОЛ НА СВРТУВАЊЕ TURNING ANGLE	$\alpha = 60^\circ$

ДИМЕНЗИИ НА ГЛАВА
HEAD DIMENSIONS OF TOWER

a	3,500 (m)
b	3,500 (m)
c	4,450 (m)
d	6,100 (m)
e	3,200 (m)
f	1,600 (m)
g	1,486 (m)
D	4,890 (m)

ДОМЕН НА ПРИМЕНА НА СТОЛБОТ
DOMAIN USAGE OF TOWER

$P_v \text{ (daN/m}^2\text{)}$	60	75	90
FDT (daN/m)	1,6	1,6	1,6
a (m)	-	-	-
$a_{sr} \text{ (m)}$	480	350	260
FDT (daN/m)	1,0	1,6	2,5
$P_v \text{ (daN/m}^2\text{)}$	75	75	75
a (m)	-	-	-
$a_{gr} \text{ (m)}$	890	700	520

ТАБЕЛА НА СИЛИ
TABLE OF FORCES

Случај на оптоварувања Loading cases		Vx (daN)	Vy (daN)	Vz (daN)	Zx (daN)	Zy (daN)	Zz (daN)	Sx (daN/m ²)	Sy (daN/m ²)	
Нормални оптоварувања член 68 т.1 normal cases article 68 it.1	a	2683	-	1977	2664	-	1418	-	-	
	b	2363	-	976	2230	-	580	2,6 x 75	-	
	c	1788	287	976	1776	227	580	-	2,6 x 75	
член 68 т.2 art.68 it.2		894	1550	976	888	1539	580	-	-	
Вонредни оптоварувања член 69 т.26 special cases article 69 it.2b	I	a	1341	2325	1977	-	-	-	-	
		b	2683	-	1977	2664	-	1418	-	-
	II	c	-	-	-	1332	2309	1418	-	-
		d	2683	-	1977	-	-	-	-	-

ВИСИНА И МАСА НА СТОЛБОТ
HEIGHT AND MASS OF THE TOWER

ВИСИНА H(m)	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0
МАСА m(kg)	3000	3100	3200	3300	3400	3625	3850	4080	4310	4540	4770
ВИСИНА H(m)	20,0	21,0	22,0	23,0	24,0	25,0	26,0	27,0			
МАСА m(kg)	5000	5285	5570	5855	6140	6425	6710	7000			



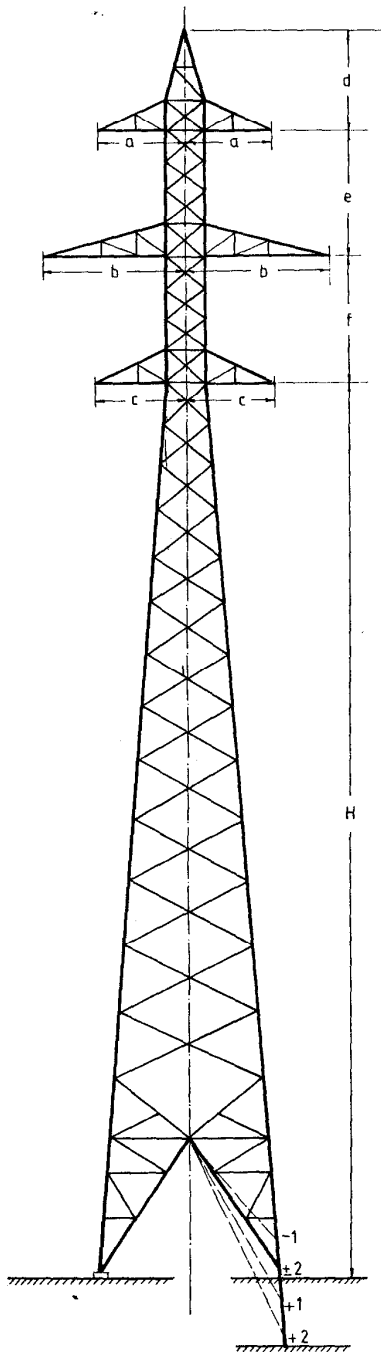
DALEKOVODNI STUBOVI

Napon Voltage 2 x 110 kV

TRANSMISSION LINE TOWERS

Stub tip Tower type SD

OSNOVNI PODACI
BASIC DATA



oznaka stuba tower sign	SD
nazivni napon rated voltage	2 x 110 kV
provodnici conductors	AL - Fe; 2 x 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9,0 \text{ daN/mm}^2$
zaštitno uže earth wire	Fell; 1 x 95/mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 22,0 \text{ daN/mm}^2$
srednji raspon average span	asr = 320 m
gravitacioni raspon gravitation span	agr = 600 m
pritisak vetra wind pressure	$p = 75 \text{ daN/m}^2$
dodatni teret additional load	$DT = 1,0 \times 0,18 \sqrt{d} \text{ daN/m}$
ugao skretanja turning angle	$\alpha = 0^\circ$

DIMENZIJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS

H (m)	12,85	13,85	14,80	16,80	17,80	18,80	19,80	20,80
G (kp)	2332	2429	2650	2935	3022	3196	3373	3460
H (m)	21,80	22,80	23,80	24,80	25,80	26,80	27,80	28,80
G (kp)	3634	3729	3817	3991	4252	4339	4514	4682
dimenzije glave dimensions of head (mm)	a				2600			
	b				4300			
	c				2700			
	d				3000			
	e				3750			
	f				3750			

TABELA SILA
TABLE OF FORCES

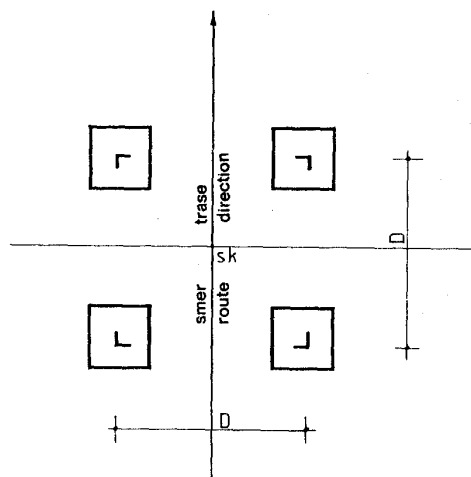
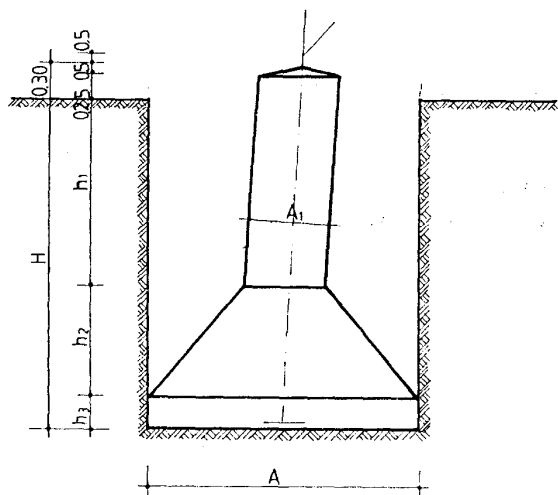
slučaj opterećenja loading case		V _x	V _y	V _z	Z _x	Z _y	Z _z	S _x	S _y
		daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²
normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	-	-	1266	-	-	827	-	-
	b	526	-	733	300	-	445	2,6 x 75	-
	c	-	132	733	-	75	445	-	2,6 x 75
vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	I	a	-	1272	1266	-	-	-	-
		b	-	-	1266	-	-	827	-
	II	c	-	-	-	-	1026	827	-
		d	-	-	1266	-	-	-	-



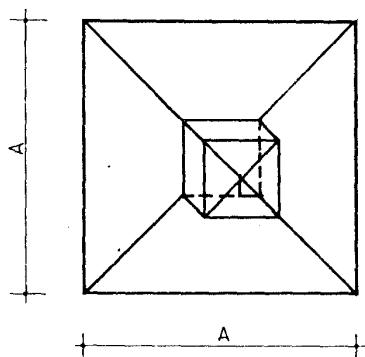
Podaci za temelje
Foundation data

Stub tip
Tower type SD

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA
NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehaničke karakteristike tla
Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	12,85	13,85	14,80	16,80	17,80	18,80	19,80	20,80	21,80	22,80
osovinski raspon D (mm) - spacing D (mm)	3130	3300	3460	3800	3970	4140	4310	4480	4650	4820
						23,80	24,80	25,80	26,80	27,80
						4990	5160	5330	5500	5680

nosivost tla σ daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A ₁ (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforce- ment (kgr.)
(1,0 - 2,0) + P. V.	2,30	0,40	2,20	1,20	0,80	0,20	46,56	11,96	34,60	141,66
1,5	1,80	0,40	2,20	1,40	0,60	0,20	28,51	6,96	21,55	141,66
2,0	1,60	0,40	2,20	1,40	0,60	0,20	22,53	5,80	16,73	141,66
(3,0 - 5,0)	1,60	0,40	2,20	1,40	0,60	0,20	17,26	4,76	12,50	141,66



DALEKOVODNI STUBOVI

Napon
Voltage

2 x 110 kV

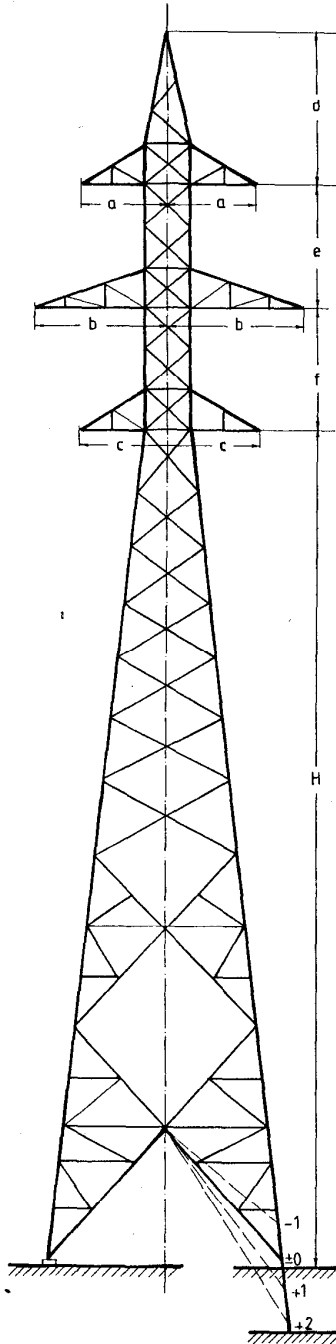
TRANSMISSION LINE TOWERS

Stub tip
Tower type

AD 150

OSNOVNI PODACI
BASIC DATA

oznaka stuba tower sign	AD 150
nazivni napon rated voltage	2 x 110 kV
provodnici conductors	AL - Fe: 2 x 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9.0 \text{ daN/mm}^2$
zaštitno uže earth wire	FellI: 1 x 95 mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 22.0 \text{ daN/mm}^2$
srednji raspon average span	asr = 320 m
gravitacioni raspon gravitation span	agr = 600 m
pritisak vetra wind preassure	$p = 75 \text{ daN/m}^2$
dodatni teret additional load	$DT = 1.0 \times 0.18 \sqrt{d} \text{ daN/m}$
ugao skretanja turning angle	$\alpha = 150^\circ - 180^\circ$



DIMENZIJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS

H (m)	12.00	13.00	15.00	16.00	17.00	18.00	19.00	
G (kp)	3848	4146	4446	4742	4991	5366	5527	
H (m)	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00
G (kp)	5775	6008	6169	6418	6768	6927	7177	7349
dimenzije glave dimensions of head (mm)	a				2600			
	b				4000			
	c				2700			
	d				4550			
	e				3650			
	f				3650			

TABELA SILA
TABLE OF FORCES

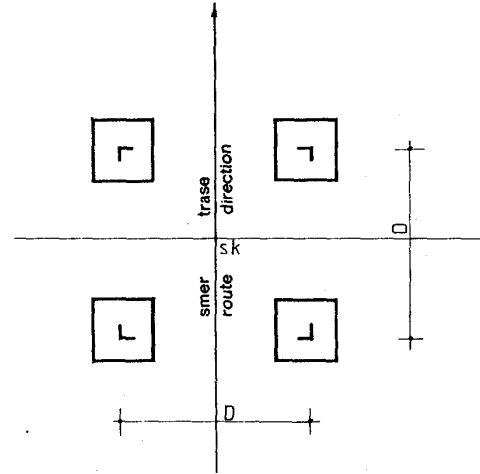
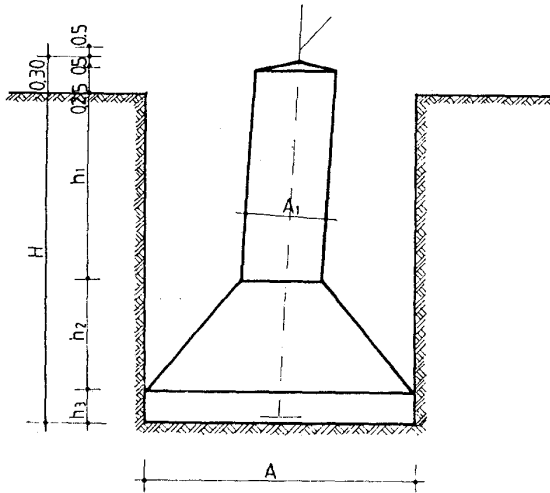
slučaj opterećenja loading case		Vx	Vy	Vz	Zx	Zy	Zz	Sx	Sy	
		daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²	
normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	150	1320	-	1450	1065	-	830	-	-
		180	-	-	1450	-	-	830	-	-
	b	150	1405	-	875	1010	-	440	2.6 x 75	-
		180	526	-	875	300	-	440	2.6 x 75	-
	c	150	880	135	875	710	75	440	-	2.6 x 75
		180	-	135	875	-	75	440	-	2.6 x 75
član 76 tačka 2 article 76 item 2		150	440	1640	875	355	1325	440	-	-
		180	-	1695	875	-	1370	440	-	-
vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	I	a	150	660	2460	1450	-	-	-	-
			180	-	2545	1450	-	-	-	-
	b	150	1320	-	1450	1065	-	830	-	-
		180	-	-	1450	-	-	830	-	-
	c	150	-	-	-	535	1985	830	-	-
		180	-	-	-	-	2052	830	-	-
	II	d	150	1320	-	1450	-	-	-	-
			180	-	-	1450	-	-	-	-



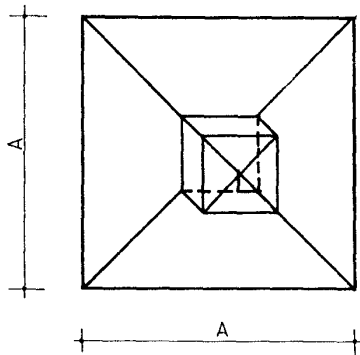
Podaci za temelje
Foundation data

Stub tip
Tower type AD-150

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA
NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehaničke karakteristike tla
Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00	21,00	22,00	23,00
osovinski raspon D (mm) - spacing D (mm)	4127	4573	4796	5019	5241	5464	5687	5909	6132	6355
							24,00	25,00	26,00	27,00
							6577	6800	7023	7245

nosivost tla σ daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A ₁ (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforce- ment (kgr.)
(1,0 - 2,0) + P . V .	3,35	0,40	2,50	1,0	1,20	0,30	112,22	34,64	77,58	374,52
1,5	2,65	0,40	2,50	1,20	1,0	0,30	70,22	20,36	49,86	374,52
2,0	2,30	0,40	2,50	1,20	1,0	0,30	52,90	15,77	41,13	374,52
(3,0 - 5,0)	1,90	0,40	2,50	1,10	1,0	0,30	36,10	11,32	24,78	374,52



Elektroindustrija i inženjering

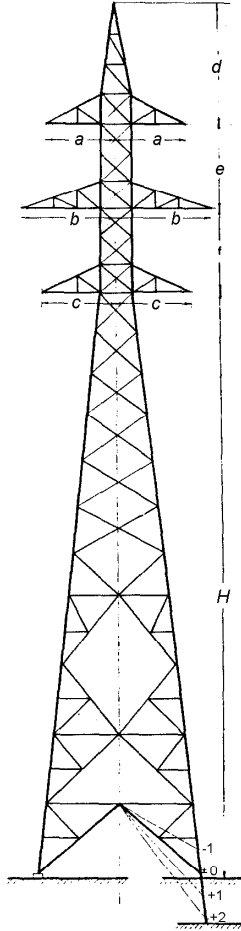
OHRID - JUGOSLAVIJA

DALEKOVODNI STUBOVI

Napon Voltage 2 x 110 kV

TRANSMISSION LINE TOWERS

Stub tip Tower type AD - 120



OSNOVNI PODACI
BASIC DATA

oznaka stuba tower sign	AD 120
nazivni napon rated voltage	2 x 110 kV
provodnici conductors	AL - Fe, 2 x 3 x 240/40 mm ²
naprezanje provodnika tension of conductors	$\sigma = 9,0 \text{ daN/mm}^2$
zaštitno uže earth wire	Felll; 1 x 95 /mm ²
naprezanje zaštitnog užeta tension of earth wire	$\sigma_1 = 22,0 \text{ daN/mm}^2$
srednji raspon average span	asr = 320 m
gravitacioni raspon gravitation span	agr = 600 m
pritisak vetra wind pressure	$p = 75 \text{ daN/m}^2$
dodatni teret additional load	$DT = 1,0 \times 0,18 \sqrt{d} \text{ daN/m}$
ugao skretanja turning angle	$\alpha = 120^\circ - 150^\circ$

DIMENZIJA GLAVE, VISINE I TEŽINE STUBOVA
HEAD DIMENSIONS, HEIGHT AND WEIGHT OF TOWERS

H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00
G (kp)	5060	5700	5892	6150	6482	6835	7150
H (m)	21,00	22,00	23,00	24,00	25,00	26,00	27,00
G (kp)	7465	7550	7820	8302	8720	9065	9460
dimenzije glave dimensions of head (mm)	a				3000		
	b				4000		
	c				3200		
	d				5200		
	e				3650		
	f				3650		

TABELA SILA
TABLE OF FORCES

TABELA DIFERENCIJALNIH SILA
TABLE OF DIFFERENTIAL FORCES
 $\sigma_v 1/2 = 9/5 \text{ daN/mm}^2$ $\sigma_z 1/2 = 22/12 \text{ daN/mm}^2$

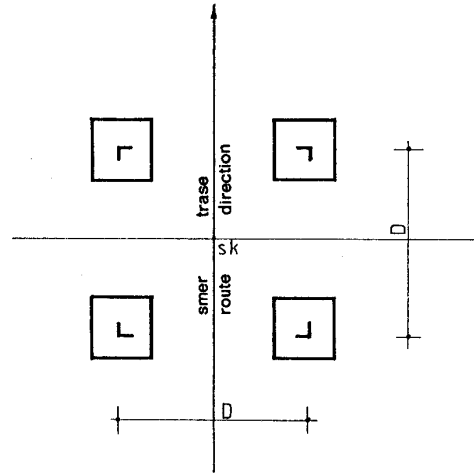
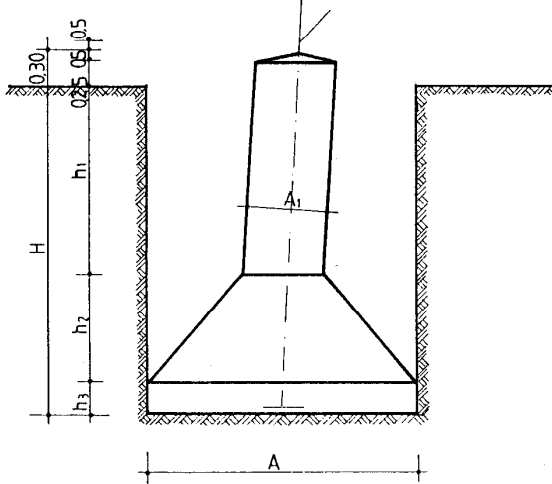
Vx	Vy	Vz	Zx	Zy	Zz	Sx	Sy	slučaj opterećenja loading case								Vx	Vy	Vz	Zx	Zy	Zz	Sx	Sy		
daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²									daN	daN	daN	daN	daN	daN	daN/m ²	daN/m ²		
2545	-	1450	2055	-	830	-	-	120	a	normalni slučajevi član 76 tačka 1 normal cases, article 76 item 1	a	120	1980	985	1450	1590	810	830	-	-					
1320	-	1450	1065	-	830	-	-	150				150	1025	1092	1450	821	901	830	-	-					
2225	-	875	1940	-	440	2,6 x 75	-	120				b	120	1845	660	875	1360	540	440	2,6 x 75	-				
1405	-	875	1010	-	440	2,6 x 75	-	150				b	150	1210	730	875	850	601	440	2,6 x 75	-				
1700	270	875	1370	150	440	-	2,6 x 75	120				c	120	1320	920	875	1060	690	440	-	2,6 x 75				
880	135	875	710	75	440	-	2,6 x 75	150				c	150	685	862	875	550	676	440	-	2,6 x 75				
850	1470	875	685	1185	440	-	-	120	član 76 tačka 2 article 76 item 2			120	850	1470	875	685	1185	440	-	-					
440	1640	875	355	1325	440	-	-	150				150	440	1640	875	355	1322	440	-	-					
1275	2205	1450	-	-	-	-	-	120	a	vanredni slučajevi član 77 tačka 1 special cases, article 77 item 1	a	120	1275	2205	1450	-	-	-	-	-					
660	2460	1450	-	-	-	-	-	150				150	660	2457	1450	-	-	-	-	-					
2545	-	1450	2055	-	830	-	-	120				b	120	1980	985	1450	1590	810	830	-	-				
1320	-	1450	1065	-	830	-	-	150				b	150	1025	1092	1450	821	901	830	-	-				
-	-	-	1030	1780	830	-	-	120				c	120	-	-	-	1030	1780	830	-	-				
-	-	-	535	1985	830	-	-	150				c	150	-	-	-	532	1983	830	-	-				
2545	-	1450	-	-	-	-	-	120	d	II	d	120	1980	985	1450	-	-	-	-						
1320	-	1450	-	-	-	-	-	150				150	1025	1092	1450	-	-	-	-	-					



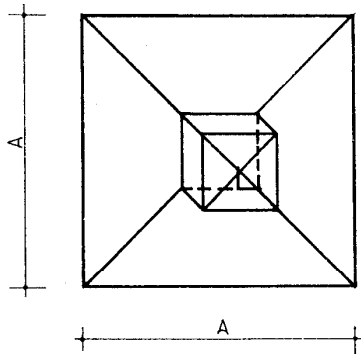
Podaci za temelje
Foundation data

Stub tip
Tower type AD.-120

PRESEK - SECTION



OSNOVA - FOUNDATION



MB 15

NAPOMENA
NOTE

Količine važe za sve visine stubova
Quantities are valid for all heights of towers

Pre betoniranja obavezno proveriti geomehničke karakteristike tla

Geological and mechanical characteristics of the soil shall be tested obligatory before concreting

Materijal, uslovi izvedbe, kvalitet i drugo prema tehničkom opisu

Material, execution terms, quality, e.t.c. acc to technical description

visina stuba H (m) - height of tower H (m)	13,00	15,00	16,00	17,00	18,00	19,00	20,00	21,00	22,00	23,00	
osovinski raspon D (mm) - spacing D (mm)	4279	4733	4960	5186	5413	5640	5866	6093	6320	6546	
								24,00	25,00	26,00	27,00
								6773	7000	7227	7454

a) ZATEZNI STUB - TENSION TOWER

nosivost tla σ daN/sm ² soil bearing capacity daN/cm ²	dimenzije temelja foundation dimensions						materijal za četiri noge stuba material for four tower legs			
	A (m)	A ₁ (m)	H (m)	h ₁ (m)	h ₂ (m)	h ₃ (m)	iskop excavation (m ³)	beton concrete (m ³)	nasip dike (m ³)	armatura reinforcement (kgr.)
(1,0 - 2,0) + P. V.	3,80	0,40	2,50	0,90	1,30	0,30	144,40	46,00	98,40	450,36
1,5	2,85	0,40	2,50	1,10	1,10	0,30	81,24	24,44	56,80	450,36
2,0	2,45	0,40	2,50	1,10	1,10	0,30	60,06	18,56	41,50	450,36
(3,0 - 5,0)	2,20	0,40	2,50	1,10	1,10	0,30	48,40	15,28	33,12	450,36

b) KRAJNI STUB - TERMINAL TOWER

(1,0 - 2,0) + P. V.	3,90	0,40	2,80	1,10	1,40	0,30	170,35	50,80	119,55	634,77
1,5	3,00	0,40	2,50	1,00	1,20	0,30	90,00	28,00	62,00	579,27
2,0	2,65	0,40	2,50	1,00	1,20	0,30	70,22	22,40	47,82	579,27
(3,0 - 5,0)	2,40	0,40	2,50	1,00	1,20	0,30	57,60	18,80	38,80	579,27

