

Sag-Tension Calculation of ACSR SNOWBIRD

(Bralesh Kumar, Engg-T/L)

WIND ZONE - 4 (47 M/S)

Conductor Properties

Conductor Name	ACSR SNOWBIRD
UTS (kg)	12029
Area of Conductor (sqmm)	552.1
Wt. Of Conductor (kg/m)	1.657
Dia of Conductor (mm)	30.56
Modulus of Elasticity (kg/sqmm)	6320
Coeff of linear Expansion (per deg C)	0.0000212

Initial Condition

Normal Span (m)	400
Wind Pressure on Cond.(Kg/sqm)	162
Initial Cond. temp.(deg C)	32
Initial Wind %	0
Initial Cond. tension at above temp, and wind condition (% of UTS OR value in Kg)	22

Note: The tension should be below 22% of UTS in day to day condition and should not exceed 70% of UTS in any condition.	
22% of UTS = 2646.38 Kg	70% of UTS = 8420.3 Kg

Initial Sag, Ton at 32 deg C, 0% Wind		
Ten (% of UTS)	Ten (kg)	Sag (mts)
22.00	2646.38	12.52

	Standard Conditions					Any other condition
	0	32	75	0	32	
Temperature (deg C)	0	32	75	0	32	85
Pressure (% of full wind)	0	0	0	36	100	0
Resultant Tension (Kg)	2998.30	2646.38	2310.44	4097.75	6888.35	2247.72
Resultant Sag (mts)	11.05	12.52	14.34	#	#	14.74

32
75
5635.5

NOTE :-

STRINGING CHART SHALL BE PREPARED CONSIDERING FOLLOWING STARTING CONDITION

1. EQUIVALENT SPAN LESS THAN 400 M :- 32 DEG C, NO WIND CONDITION
2. EQUIVALENT SPAN MORE THAN 400 M :- 32 DEG C, FULL WIND CONDITION.

Sag-Tension Calculation of Earthwire

(Braiesh Kumar, Encc-T/L)

WIND ZONE- 4 (47 m/s)

Conductor Properties

Conductor Name	Earthwire
UTS (Kg)	6972
Area of Conductor (sqmm)	73.65
Wt. of Cond (Kg/m)	0.583
Dia of Cond. (mm)	10.98
Mod. of Elasticity (Kg/sqmm)	19361
Coeff. of linear expansion (per deg C)	0.0000115

Initial Condition

Normal Span (m)	400
Wind Pressure on Cond.(Kg/sqm)	201
Initial Cond. temp.(deg C)	0
Initial Wind %	0
Initial Cond. tension at above temp, and wind condition (% of UTS OR value in Kg)	16.81

Note: The tension should be below 20% of UTS in day to day condition and should not exceed 70% of UTS in any condition.	
20% of UTS = 1394.4 Kg	70% of UTS = 4880.4 Kg

Initial Sag, Ten at 0 deg C, 0% Wind		
Ten (% of UTS)	Ten (kg)	Sag (mts)
16.81	1171.99	9.95

	Standard Conditions					Any other condition
	0	32	75	0	32	
Temperature (deg C)	0	32	75	0	32	32
Pressure (% of full wind)	0	0	0	36	100	75
Resultant Tension (Kg)	1171.99	1077.57	976.72	1769.18	3183.25	2605.96
Resultant Sag (mts)	9.95	10.82	11.94	#	#	#

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- Tension WITHIN Indian Standard limits

NOTE:-

- STRINGING CHART SHALL BE PREPARED CONSIDERING FOLLOWING STARTING CONDITIONS
1. EQUIVALENT SPAN LESS THAN 400M :- 32 DEG C, NO WIND CONDITION.
 2. EQUIVALENT SPAN MORE THAN 400M :- 32 DEG C FULL WIND CONDITION.