

The Design Control Condition may be placed AFTER installing the Balls, as shown below. This approach is best for new design, and ensures that all design limits are met. Final data without Balls is not included, since this condition will not exist.

ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA

Sample Problem  
Marker Balls, with Tension Control AFTER installing Balls

Conductor DRAKE 795.0 Kcmil 26/ 7 Stranding ACSR  
Area= .7264 Sq. In Dia= 1.108 In Wt= 1.094 Lb/F RTS= 31500 Lb  
Data from Chart No. 1-537  
English Units

Span= 1000.0 Feet NESC Heavy Load Zone  
Creep is NOT a Factor

Design Points				Final		Initial		
Temp	Ice	Wind	K	Weight	Sag	Tension	Sag	Tension
F	In	Psf	Lb/F	Lb/F	Ft	Lb	Ft	Lb
0.	.00	.00	.00	1.094			17.29	7923.
30.	.00	.00	.00	1.094			18.95	7231.
60.	.00	.00	.00	1.094			20.66	6634.
212.	.00	.00	.00	1.094			29.24	4698.

Above: Initial Data Prior to Marker Ball Installation

Below: 10. Marker Balls in 1000.Feet, Dia= 24.0 In , Wt= 16.0 Lb + 64.0 Lb

0.	.50	4.00	.30	3.039	27.38	13927.	27.38	13927.
32.	.50	.00	.00	2.629	27.77	11885.	26.98	12228.
0.	.00	.00	.00	1.318	20.97	7875.*	18.88	8743.
30.	.00	.00	.00	1.318	22.89	7218.	20.44	8080.
60.	.00	.00	.00	1.318	24.78	6672.	22.04	7496.
212.	.00	.00	.00	1.318	32.23	5140.	30.12	5496.

\* Design Condition

The Design Control Condition may be placed BEFORE installing the Balls, as shown below. This approach allows analysis of a line that has been up for some time, so the stringing conditions were already established. Note that when BEFORE is used, it is easy to exceed NESC limits. In this case, it may be necessary to re-string the wire.

ALUMINUM COMPANY OF AMERICA SAG AND TENSION DATA

Sample Problem  
Marker Balls, with Tension Control BEFORE installing Balls

Conductor DRAKE 795.0 Kcmil 26/ 7 Stranding ACSR  
Area= .7264 Sq. In Dia= 1.108 In Wt= 1.094 Lb/F RTS= 31500 Lb  
Data from Chart No. 1-537  
English Units

Span= 1000.0 Feet NESC Heavy Load Zone  
Creep IS a Factor

Design Points				Final		Initial		
Temp	Ice	Wind	K	Weight	Sag	Tension	Sag	Tension
F	In	Psf	Lb/F	Lb/F	Ft	Lb	Ft	Lb
0.	.50	4.00	.30	2.509	23.93	13148.	23.87	13179.
32.	.50	.00	.00	2.094	24.13	10883.	23.21	11310.
0.	.00	.00	.00	1.094	17.39	7875.*	15.55	8807.
30.	.00	.00	.00	1.094	19.44	7048.	17.12	8002.
60.	.00	.00	.00	1.094	21.49	6381.	18.78	7297.
212.	.00	.00	.00	1.094	29.37	4677.	27.48	4997.

Above: Initial Data Prior to Marker Ball Installation

Below: 10. Marker Balls in 1000.Feet, Dia= 24.0 In , Wt= 16.0 Lb + 64.0 Lb

0.	.50	4.00	.30	3.039	25.68	14844.	25.68	14844.
32.	.50	.00	.00	2.629	25.98	12695.	25.13	13124.
0.	.00	.00	.00	1.318	18.72	8815.	16.60	9937.
30.	.00	.00	.00	1.318	20.65	7996.	18.05	9143.
60.	.00	.00	.00	1.318	22.57	7318.	19.58	8430.
212.	.00	.00	.00	1.318	30.38	5450.	27.76	5959.

\* Design Condition