

TRINITY CABLE TENSIONS		
TEMPERATURE	PRE-STRETCHED CABLE TENSION	STANDARD CABLE TENSION
°F	LBS	LBS
-15	7500	8800
-10	7300	8600
-5	7100	8400
0	7000	8200
5	6800	8000
10	6600	7800
15	6500	7600
20	6300	7400
25	6100	7200
30	6000	7000
35	5800	6800
40	5600	6600
45	5500	6400
50	5300	6200
55	5100	6000
60	5000	5800
65	4800	5600
70	4600	5400
75	4500	5200
80	4300	5000
85	4100	4800
90	4000	4600
95	3800	4400
100	3600	4200
105	3500	4000
110	3300	3800

TOLERANCE: -200 TO +800 POUNDS

NUCOR CABLE TENSION		
CABLE TEMPERATURE	INITIAL TENSION	EXPECTED TENSION
°F	W/15%	
-30	13706	11918
-20	12979	11286
-10	12252	10654
0	11525	10022
10	10800	9391
20	10073	8759
30	9346	8127
40	8619	7495
50	7894	6864
60	7167	6232
70	6440	5600
80	6077	5284
90	5713	4968
100	5350	4652
110	4986	4336
120	4624	4021

TENSION CHECK REQUIREMENTS

CHECKING AND CORRECTING THE TENSION IN EACH CABLE SHALL BE PERFORMED EACH TIME A CABLE IS SPICED AND HTC SYSTEM MAINTENANCE IS SPECIFIED. THE RECOMMENDED TENSIONS FOR EACH SYSTEM ARE SHOWN IN THE CHARTS. THE RESULT OF EACH CHECK SHALL BE RECORDED ON A COPY OF THE TENSION LOG SHEET SHOWN ON THIS SHEET. THE COMPLETED LOG SHALL BE SUBMITTED TO THE SAFETY AND CLAIMS MANAGER.

GIBRALTAR CABLE TENSIONS	
CABLE TEMPERATURE	CABLE TENSION
°F	LBS
-30	
-20	
-10	8000
0	7600
10	7200
20	6800
30	6400
40	6000
50	5600
60	5200
70	4800
80	4400
90	4000
100	3600
110	3200

BRIFEN CABLE TENSIONS	
ROPE TEMPERATURE	TENSION
F°	LBS
0	7300
8	7000
16	6700
24	6400
32	6100
40	5800
48	5500
56	5200
64	4800
72	4500
76	4400
80	4200
88	3900
96	3600
100	3500
104	3300
108	3200
112	3000



Illinois Department of Transportation

TENSION LOG SHEET
FOR
High Tension Cable Barrier

System	
Brifen	
USHTCS (Nucor)	
Gibraltar	
Trinity (CASS)	

Date / Time: _____

Contract / Work Order No. _____

County: _____

Route: _____

Milepost/ GPS: _____

Ambient Temp: _____

Rope Temp: _____

3 or 4 Cable System	Location 1 Actual Load kN/LB	Location 2 Actual Load kN/LB	Location 3 Actual Load kN/LB	Average Load (L1+L2+L3/3) kN/LB	Design Load kN/LB (see charts)
Top Cable					
Cable 2					
Cable 3 (If Applicable)					
Bottom Cable					

Note: Readings should be taken at 3 separate places along each cable, moving the tension meter at least 4" between readings. The average load is compared to design load for tolerance.

Number of splices made to the cable: _____

Were tensioning adjustments made to the cable: _____

Is 1" (minimum) of thread exposed in all turnbuckle windows: _____

Splice Type & Location (s): _____

Testing Equipment Used: _____

Printed Name & Signature of Tester: _____

Other Notes: _____

IDOT Inspector Initials (if Present): _____

• D-3 HIGHWAY DAMAGE REPAIR 2015