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There are numerous government regulations and industry standards that cover the use of products sold by D & A Wire Rope. No attempt is made to include all the information that they cover.

RIGGING SAFETY RULES

1. Know the weight of the load
2. Know the center of gravity of the load
3. Make load attachment above center of gravity or stabilize
4. Select hitch that will hold and control load
5. Know rated capacities of slings and rigging hardware
6. Select sling best suited for load
7. Inspect all rigging gear prior to use
8. Protect sling from sharp surfaces
9. Protect load from rigging if necessary
10. Do not use hand-tucked slings on single leg or with swivel in system
11. Allow for increased tension caused by sling angle
12. Allow for low D/D ratios on wire rope
13. Equalize loading on multiple leg slings
14. Allow for reductions when using choker hitches
15. Allow for sling angles when forcing choker
16. Only use alloy chain for chain slings
17. Attach tag lines prior to lift if required
18. Keep personnel clear of lift area
19. Lift load a few inches and check rigging
20. Know limitations of hoisting device
21. Start and stop slowly
22. Watch for obstructions and power lines
23. User proper hand signals
24. Maintain load control
25. Do not forget the law of gravity

PROPER CLIP INSTALLATION

Step 1: Apply first clip one base width from dead end of wire with U-bolt over dead end. Tighten nuts evenly to recommended torque.



Step 2: Apply second clip as close to eye as possible. U-bolt over dead end. Snug up nuts but DO NOT TIGHTEN.



Step 3: Apply all additional clips, spaced evenly between the first two.



Step 4: Tighten all nuts to recommended torque, alternating from one bolt to the other.

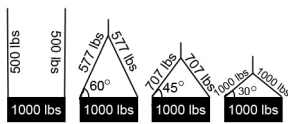
Step 5: Apply test load.

Step 6: Recheck nut torque after rope has been in operation

Clip / Wire Size	Min. # Clips	Turn Back (in)	Torque in ft./lbs
1/8	2	3-1/4	4.5
3/16	2	3-3/4	7.5
1/4	2	4-3/4	15
5/16	2	5-1/4	30
3/8	2	6-1/2	45
7/16	3	7	65
1/2	3	11-1/2	65
9/16	3	12	95
5/8	3	12	95
3/4	4	18	130
7/8	4	19	225
1	5	26	225
1-1/8	6	34	225
1-1/4	7	44	360
1-3/8	7	44	360
1-1/2	8	54	360

*Chart for Drop Forged Clips

CALCULATING SLING LOAD ANGLE FACTOR



Load on Sling Leg = Vertical Load x Load Angle Factor

Example:
 Load = 1000 lbs
 Number of Legs = 2
 Angle = 60°

Load per Leg = 1000 lbs/2 legs = 500 lbs
 Load on Sling Leg = 500 lbs x 1.155
 Load on Sling Leg = 577 lbs per leg

Sling Angle	Load Angle Factor
90°	1.000
85°	1.004
80°	1.015
75°	1.035
70°	1.064
65°	1.104
60°	1.155
55°	1.221
50°	1.305
45°	1.414
40°	1.555
35°	1.742
30°	2.000
25°	2.364
20°	2.924
15°	3.661
10°	5.747
5°	11.49

SHACKLES

Size (Inches)	WLL (Tons)	Approx. weight (lbs.)	Pin Size (Inches)	Width Between Eyes	Inside Length (Inches)	Inside Width (Inches)
1/4	1/2	.13	5/16	15/32	1-1/8	3/4
5/16	3/4	.21	3/8	17/32	1-1/4	13/16
3/8	1	.33	7/16	21/32	1-7/16	15/16
7/16	1-1/2	.47	1/2	3/4	1-11/16	1-1/16
1/2	2	.78	5/8	13/16	1-7/8	1-3/16
5/8	3-1/4	1.44	3/4	1-1/16	2-3/8	1-1/2
3/4	4-3/4	2.3	7/8	1-1/4	2-13/16	1-3/4
7/8	6-1/2	3.5	1	1-7/16	3-5/16	2
1	8-1/2	5.0	1-1/8	1-11/16	3-3/4	2-5/16
1-1/8	9-1/2	7.0	1-1/4	1-13/16	4-1/4	2-5/8
1-1/4	12	9.5	1-3/8	2-1/32	4-11/16	2-7/8
1-3/8	13-1/2	13.0	1-1/2	2-1/4	5-1/4	3-1/4
1-1/2	17	16.5	1-5/8	2-3/8	5-3/4	3-3/8
1-3/4	25	29.0	2	2-7/8	7	4-1/2
2	35	43.0	2-1/4	3-1/4	7-3/4	5-1/4

WIRE ROPE NOMINAL STRENGTHS - EIPS, IWRC

Size (Inches)	6X26 and 6x36		19x7		19x19	
	Breaking Strength (Tons)	Approx. Weight (Pounds/Ft)	Breaking Strength (Tons)	Approx. Weight (Pounds/Ft)	Breaking Strength (Tons)	Approx. Weight (Pounds/Ft)
1/4	3.40	.12	2.77	.113	3.74	.13
5/16	5.27	.18	4.30	.177	5.80	.21
3/8	7.55	.26	6.15	.250	8.30	.31
7/16	10.20	.35	8.33	.350	11.20	.40
1/2	13.30	.46	10.80	.450	14.60	.54
9/16	16.80	.59	13.60	.580	18.50	.69
5/8	20.60	.72	16.80	.710	22.70	.85
3/4	29.40	1.04	24.00	1.020	32.40	1.25
7/8	39.80	1.42	32.50	1.390	43.80	1.68
1	51.70	1.85	42.20	1.820	56.90	2.17
1-1/8	65.00	2.34	53.10	2.300	71.50	2.75
1-1/4	79.90	2.89	65.10	2.850	87.90	3.45
1-1/2	114.00	4.16	-	-	125.00	5.11

WIRE ROPE SLING CAPACITY - EIPS IWRC 6x19 & 6x36 - IN TONS

Diameter (Inches)	Vertical	Choker	Basket	Basket & 2 leg bridle		
				30°	45°	60°
1/4	.65	.48	1.3	.65	.91	1.1
5/16	1.0	.74	2.0	1.0	1.4	1.7
3/8	1.4	1.1	2.9	1.4	2	2.5
7/16	1.9	1.4	3.9	1.9	2.7	3.4
1/2	2.5	1.9	5.1	2.5	3.6	4.4
9/16	3.2	2.4	6.4	3.2	4.5	5.5
5/8	3.9	2.9	7.8	3.9	5.5	6.8
3/4	5.6	4.1	11	5.6	7.9	9.7
7/8	7.6	5.6	15	7.6	11	13
1	9.8	7.2	20	9.8	14	17
1-1/8	12	9.1	24	12	17	21
1-1/4	15	11	30	15	21	26
1-1/2	21	16	42	21	30	37

CHAIN SLING CAPACITY GRADE 100 - IN POUNDS

Chain Size	Single 90°	Double		Triple & Quad			
		60°	45°	30°	60°	45°	30°
7/32	2700	4700	3800	2700	7000	5700	4000
9/32	4300	7400	6100	4300	11,200	9100	6400
5/16	5700	9900	8100	5700	14,800	12,100	8500
3/8	8800	15,200	12,400	8800	22,900	18,700	13,200
1/2	15,000	26,000	21,200	15,000	39,000	31,800	22,500
5/8	22,600	39,100	32,000	22,600	58,700	47,900	33,900
3/4	35,300	61,100	49,900	35,300	91,700	74,900	53,000

NYLON WEB SLING CAPACITY DOUBLE PLY - IN POUNDS

	Vertical	Choker	Basket
EE2-901	3200	2500	6400
EE2-902	6400	5000	12,800
EE2-903	8600	6900	17,200
EE2-904	11,500	9200	23,000
EE2-906	16,300	13,000	32,600

POLYESTER ROUND SLING CAPACITY - IN POUNDS

Part No.	Color Code	Vertical	Choker	90° Basket	45° Basket	Approx. Diameter	Approx. Weight/Ft (pounds)
ENR1	Purple	2600	2100	5200	3700	.625"	.3
ENR2	Green	5300	4200	10,600	7500	.875"	.4
ENR3	Yellow	8400	6700	16,800	11,900	1.125"	.5
ENR4	Tan	10,600	8500	21,200	15,000	1.125"	.6
ENR5	Red	13,200	10,600	26,400	18,700	1.375"	.8
ENR6	White	16,800	13,400	33,600	23,800	1.375"	.9
ENR7	Blue	21,200	17,000	42,400	30,000	1.625"	1.3
ENR8	Orange	25,000	20,000	50,000	35,400	1.750"	1.6
ENR9	Orange	31,000	24,800	62,000	43,800	2.125"	2.0
ENR10	Orange	40,000	32,000	80,000	56,600	2.650"	2.6
ENR11	Orange	53,000	42,400	106,000	74,900	3.150"	3.4
ENR12	Orange	66,000	52,800	132,000	93,000	3.950"	4.3
ENR13	Orange	90,000	72,000	180,000	127,300	4.800"	5.9