



The listed capacities of wire rope slings/assemblies in this catalog are based on the industrial standard of a 5 to 1 design factor. This is the method used to determine the working load limit (WLL) of a sling: minimum breaking strength of the wire rope (MBL) multiplied by the efficiency of the splice or end fittings divided by the design factor 5.

The factors listed below affect the capacity of a wire rope sling:

- Efficiency of the end termination or eye splice
- Type of hitch being used when lifting the load
- Diameter of the item being lifted where the sling is attached
- Diameter of the hook or shackle where the sling attaches to the lifting device

## Efficiency of the end termination or eye splice

### Hand spliced eyes:

Rope Diameter	Efficiency
1/4"	90%
5/16"	89%
3/8"	88%
7/16"	87%
1/2"	86%
9/16"	85%
5/8"	84%
3/4"	82%
7/8" to 2-1/2"	80%

### Mechanical spliced eyes:

Rope Diameter	Efficiency
1/4" to 1"	95%
1-1/8" to 2"	92.5%
2-1/4" to 4-1/2"	90%

### Swage and spelter sockets:

Rope Diameter	Efficiency
1/4" to 4-1/2"	100%





## Type of hitch being used when lifting the load:

### Vertical Pull:

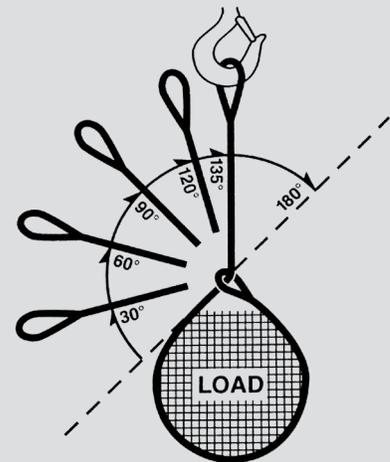
A vertical pull is where a sling is hitched between the lifting device and load in a straight line.



### Choker Hitch:

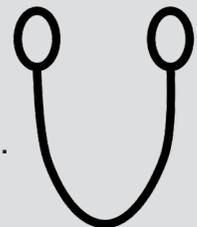
A choker hitch is where the eye on one end of the sling is passed through the eye on the other end of the sling and the sling is choked around the load being picked up. The chart below shows the capacity reduction of a sling used in a choker hitch.

Angle of Choke Degree	Rated Capacity %
Over 120	100
90-120	87
60-89	74
30-59	62
0-29	49



### Vertical Basket Hitch:

A vertical basket hitch is where the body of the sling supports the load being lifted and the two ends of the sling are attached to the lifting device.





## Sling Capacities When Rigged at Various Angles

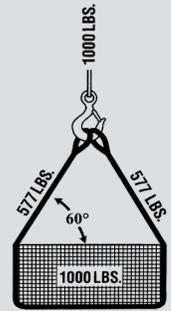
### EXAMPLES:

#### Load Factor Guidelines

Leg Angle	Load Factor
90°	1.000
85°	1.003
80°	1.015
75°	1.035
70°	1.064
65°	1.103
60°	1.154
55°	1.220
50°	1.305
45°	1.414
40°	1.555
35°	1.743
30°	2.000

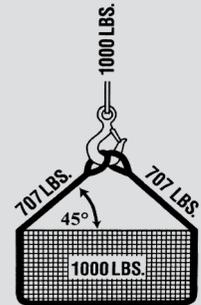
**A. Vertical lift:** Total load is 1,000 lbs. divided by two legs = 500 lbs. load per leg if vertical lift

**B. Horizontal sling angle is 60 degrees:** Multiply 500 lbs. by 1.154 load factor (from table) = 577 lbs. actual load per leg.



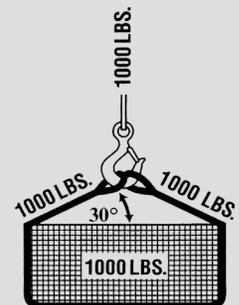
**A. Vertical lift:** Total load is 1,000 lbs. divided by two legs = 500 lbs. load per leg if vertical lift

**B. Horizontal sling angle is 45 degrees:** Multiply 500 lbs. by 1.414 load factor (from table) = 707 lbs. actual load per leg.



**A. Vertical lift:** Total load is 1,000 lbs. divided by two legs = 500 lbs. load per leg if vertical lift

**B. Horizontal sling angle is 30 degrees:** Multiply 500 lbs. by 2.000 load factor (from table) = 1000 lbs. actual load per leg.



**WARNING:** Slings shall not be used with horizontal angles less than 30°.