

SAFETY MEETING TOPIC: Sling Safety in Material Handling

The rated capacity of a sling is the maximum load in tons that it is designed to lift under “favorable” working conditions. Rated capacity is based on the following:

- Normal wire rope breaking strength.
- Splicing or end attachment efficiency. Different socket or collar attachments will be deducted from the capacity.
- Safety factor: A 5:1 safety factor is normal for all published rated capacities. This safety factor compensates for normal dynamic loading. Shock loading should be avoided at the start of loading. Too fast of an acceleration overloads the rope. (Six inches of slack before a load is picked doubles the total load at rest cutting the safety factor in half.)
- Number of parts of rope in the sling.
- Type of hitch: The certified tag will list the rated capacity for the vertical, choker and basket hitch. The normal choked hitch is de-rated due to the fact that failures generally occur at the point of choke rather than in the splice. Greater deductions should be taken when rolling a load. Remember to always use a shackle when choking a load and do not place the pin on the running line side.
- Angle of loading. Reduction factors should also be taken when using multiple leg slings. The capacity decreases as the leg angle increases.
- Diameter of curvature around which the sling is bent. Many of the slings purchased are 6x19 IWRC classification, meaning 6 strands composed of 19 wires per strand wrapped around an independent wire rope core. (To obtain greater flexibility in the sling a 6x37 classification can be used at the expense of resistance to abrasion.)

Slings must be inspected prior to use and should be taken out of service upon observation of any of the following conditions:

- 6 randomly distributed broken wires in one rope lay or 3 broken wires in one strand in one rope lay.
- Damage resulting in distortion of the wire rope (kinking, crushing, bird caging).
- Cracked, deformed, or worn end attachments or hooks.

Use the right sling for your application and when complete, maintain and properly store them.