

Toolbox talk - Angles/Tension for Slings and Hardware

The amount of tension applied to rigging slings and rigging hardware can change depending on the angles created during the lift. The types of rigging equipment, sizes and applications can all affect the angles. Here are some basic safety considerations regarding angles and tension.

- The lower the angle between the load and the sling, the higher the tension on the sling.
- Angles also create additional tension on rigging hardware.
- The rated capacities of rigging hardware decrease when it is pulled from any direction other than vertical.
- For example, as the angle of pull on a rigging eye bolt increases as it is being pulled by the crane cable/hook away from vertical, there is a constant decrease in the percentage of rated capacity. This applies to the rated capacities of crane hooks as well. Be sure to check with the manufacturer about changes to rated capacities before you begin rigging for lift operations.
- When using multi-leg slings, ensure that the rated capacity of each sling is adequate for the load. To make that determination accurately, consider how many legs there are on the sling and how each leg supports the load.
- Each leg of a two-leg sling shares the load.
- Each leg of a three-leg sling shares the load.
- On a four-leg sling, only two of the legs may be carrying the majority of the load. The other two legs tend to balance the load.