

TOOLBOX TALKS

The Upside of Safety



Working Load Limit (WLL)

When rigging material for lifting, it is important to know the load limits of the devices you are using, whether it be a sling, chain, wire rope, etc. The working load limit (WLL) is the limit that the device you are using can lift based on the configuration you are using it in.

Always know the weight of your load and the working load limit of the rigging you are using for each lift.

Type of Hitch

The type of hitch used for rigging has a factor on how much the device can lift. Always check the devices label to determine the weight limits. (example for polyester sling to right) Labels must always be legible.

	VERTICAL 6,400 LBS	Part No: EE292PD
	CHOKER 5,120 LBS	POLYESTER 12 FT 0 IN
	BASKET 12,800 LBS	Serial No: 1096625-478 04/23/15

Angle

The angle of the device you are using when rigging has an effect on the weight that can be lifted.

A good rule of thumb is the straighter the device (90 degrees), the more weight that can be lifted. Angles of less than 30 degrees are not recommended because they can cut the load limit by more than half.

Angle "A" Degrees	Loss Factor	Angle "A" Degrees	Loss Factor
90	1.000	55	.8192
85	.9962	50	.7660
80	.9848	45	.7071
75	.9659	40	.6428
70	.9397	35	.5736
65	.9063	30	.5000
60	.8660	25	.4226

<p>A BASKET WORK LOAD LIMIT OF 10,000 LBS. CHANGES AS THE SLING TO LOAD ANGLE CHANGES</p> <p>AT 90° - WORK LOAD LIMIT = 5,000 LBS. PER LEG</p> <p>AT 60° - WORK LOAD LIMIT = 4,330 LBS. PER LEG</p> <p>AT 45° - WORK LOAD LIMIT = 3,536 LBS. PER LEG</p> <p>AT 30° - WORK LOAD LIMIT = 2,500 LBS. PER LEG</p>					
	SLING-TO-LOAD ANGLE (DEGREES)	90°	60°	45°	30°
	WORK LOAD LIMIT X LOSS FACTOR	10,000 Lbs. x 1.000	10,000 Lbs. x .8660	10,000 Lbs. x .7071	10,000 Lbs. x .5000
	REDUCED WORK LOAD LIMIT	10,000 Lbs.	8660 Lbs.	7071 Lbs.	5000 Lbs.

Group Activity

Using two buckets, lift the buckets, one with each hand. First let your arms hang as close to your body as possible (90 degrees). Second, try to extend both arms out to the side. The higher you lift, the more tension gets put on each arm and the harder it is to lift.



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✓ SAFETYCHECK

All rigging equipment has been inspected before use?

All sling angles are greater than 30 degrees when rigged?

All rigging equipment labels are clearly legible?

The weight of the loads lifted are within the WLL of the rigging used?

Company:

Location:

Presenter:

Date:

ATTENDANCESHEET