WIRE ROPE SLINGS SAFETY BULLETIN 023

WARNING

FAILURE TO READ, UNDERSTAND AND FOLLOW THE USE AND INSPECTION INSTRUCTIONS FURNISHED WITH EACH SLING MAY RESULT IN SEVERE PERSONAL INJURY OR DEATH

USE, CARE AND INSPECTION REQUIREMENTS

Upon receipt of each new sling, make certain that it meets the requirements of your Purchase Order and that it has not been damaged in shipment.

ALWAYS INSPECT SLINGS BEFORE EACH USE

INSPECTION

Remove Wire Rope Slings from service if any of the following are visible:

A. The rated capacity tag is missing or illegible.

B. Broken Wires: ***All wire rope slings*** (except Cable Laid or Multi-part slings): 10 broken wires in one rope lay, or 5 broken wires in one strand in one rope lay. ***All E-Z Flex*** (Cable Laid) and ***Multi-part cabled or braided slings*** (of less than 8 body parts): 20 broken wires in one rope lay or braid length. ***Multi-part braided slings*** (8 or more body parts) - 40 broken wires in one braid length.

C. Sharp bends, crushing, bird caging, or any other damage resulting in distortion to the rope structure.

D. Severe localized abrasion or scraping resulting in a reduction from nominal diameter of more than 5%.

E. Any evidence of heat or chemical damage on any part of the sling, including melting or charring.

F. Metal fittings that are cracked, deformed, pitted, corroded or excessively worn.

G. Hooks with throat openings increased by more than 15 percent or twisted out of plane by more than 10 degrees.

H. Any other visible damage which causes doubt as to the sling strength.

OPERATING PRACTICES

A. Slings shall not be loaded in excess of the rated capacity. Consideration shall be given to the effect of angles. (See Effect of Angle Chart shown on opposite side.)

B. Select sling having suitable characteristics for the type of load, hitch and environment. (See Lift-All Catalog).

C. Slings shall not be shortened by twisting, knotting or using wire rope clips.

D. Slings shall not be lengthened by knotting, choking or basketing slings together, or by any other unapproved method. Suitable fittings must interconnect slings.

E. Slings shall be hitched in a manner providing control of the load.

F. Sharp edges in contact with slings should be padded.

G. Keep all portions of the human body from between the sling and the load, and from between the sling and the lifting hook.

H. Personnel should stand clear of the suspended load.

I. Personnel shall not ride the sling or a load suspended by a sling.

J. Shock loading shall be avoided.

K. Slings should not be pulled from under a load when the load is resting on them. Where practicable, use blocking to allow for easy sling removal.

L. Slings should be stored in an area where they will not be subject to mechanical damage, moisture, or extreme heat.

M. Twisting and kinking slings shall be avoided.

N. Loads applied to a hook should be centered in the base of the hook to pre vent point loading of the hook.

O. Before lifting, make certain that the sling, attachments, or load shall not snag. Personnel shall be continuously alert to avoid snagging or bumping.

P. Single leg slings with hand tucked splices shall not be allowed to rotate.

Q. In a basket hitch, proper slings must be selected to balance the load and restrict slippage in order to prevent the load from falling out of the sling.

R. In a choker hitch, slings shall be long enough so that the choker fitting chokes onto the sling eye or body and never onto any fittings.

S. Do not inspect a sling by passing bare hands over the wire rope. Broken wires, if present, may puncture the skin.

T. Do not expose slings to chemicals that are not compatible with all of the sling materials.

U. Do not expose to temperatures in excess of 180° F for fiber core wire rope or 400°F for any other grade of wire rope.

V. Slings should not be used at angles of less than 30 degrees from horizontal.

W. Slings should not be dragged on the floor or over an abrasive surface.

X. For slings containing splices, do not lift from the section containing the splice.

Y. When the sling body is bent around D/d ratios smaller than 25, the sling's rated capacity may be decreased. See the WRTB Wire Rope Sling Users Manual.

Z. When lifting points are below the center of gravity, loads tend to be unstable. Proper rigging must restrict load rotation to avoid tipping and loss of load control.

A1. For lifts of non-symmetrical loads using multiple sling legs, an analysis should be performed by a qualified person to prevent the overloading of any leg.

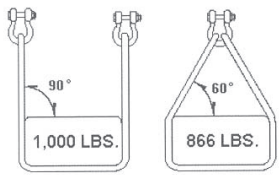
Refer to other regulations, codes and standards for additional information and safe operating practices. See OSHA CFR 1910.184 Regulations, Lift-All Catalog, ANSI/ASME B30.9. standards and the Wire Rope Technical Board (WRTB) manual.

EFFECT OF ANGLE

When slings are used at an angle, (i.e., two slings, or one sling in a basket hitch, attached to only one crane hook) sling capacity is reduced. How much it is reduced depends on the degree of the angle. You can determine whether a sling will be rated high enough if you know the angle between the sling leg and the horizontal. Once you know this angle, multiply the sling's rating by the appropriate factor in the table. This will give you the sling's reduced rating.

ANGLE	FACTOR	ANGLE	FACTOR	ANGLE	FACTOR
90º	1.00	65º	.906	40º	.643
85º	.996	60º	.866	35º	.574
80º	.985	55º	.819	30º	.500
75º	.966	50º	.766		
70º	.940	45º	.707		

SLING CAPACITY DECREASES AS THE ANGLE DECREASES



Sling capacity decreases as the angle decreases. A sling capable of lifting 1,000-lbs. in a 90˚ vertical basket hitch can only lift 866-lbs. at a 60˚ angle.

Call for information on sling inspections and safety seminars.

800-909-1964

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