



# Operating Practices

## Wire Rope Slings

### WARNING



- CAN FAIL IF DAMAGED, MISUSED OR OVERLOADED.
- INSPECT BEFORE USE.
- USE ONLY IF TRAINED.
- OBSERVE RATED LOAD.
- AVOID SHARP EDGES.
- DEATH OR INJURY CAN OCCUR FROM IMPROPER USE OR CARE.

RATED LOAD = RATED CAPACITY = WORKING LOAD LIMIT

### WIRE ROPE SLINGS

#### WIRE ROPE SLINGS INSTRUCTIONS FOR CARE, USE, INSPECTION, AND REPAIR

##### CARE:

- STORE IN A CLEAN, DRY PLACE AND PROTECT FROM MECHANICAL DAMAGE, EXTREME HEAT, CORROSION, OR KINKING. ► MAINTAIN LUBRICATED CONDITION.

##### USE:

- CHECK WEIGHT OF LOAD.
- CHECK SLING RATED LOAD FOR TYPE OF LIFT, ANGLE OF LOADING (SEE LOAD ANGLE CHART).
- SLING SHALL ALWAYS BE PROTECTED FROM BEING CUT BY SHARP CORNERS, SHARP EDGES, PROTRUSIONS, OR ABRASIVE SURFACES.
- CENTER LOAD ON BASE (BOWL) OF HOOK UNLESS HOOK IS DESIGNED FOR POINT LOADING.
- BALANCE LOAD.
- AVOID JERKING LOAD.
- MAINTAIN LOAD CONTROL.
- BE ALERT FOR SNAGGING OF LOAD.
- AVOID DRAGGING SLING OVER ROUGH SURFACES AND FROM UNDER THE LOAD.
- STAND CLEAR OF THE LOAD AT ALL TIMES.
- NO PERSON ALLOWED BENEATH THE LOAD.
- PERSONS ARE NOT TO RIDE ON SLING OR LOAD.
- AVOID KNOTTING, TWISTING AND KINKING THE SLING.
- RESTRICT USE TO TEMPERATURES BELOW 400°F (FIBER CORE WIRE ROPE 180°F) AND ABOVE -60°F.

**IMPORTANT** A SINGLE LEG SLING WITH HAND TUCKED SPLICE CAN UNLAY AND DROP THE LOAD IF ALLOWED TO ROTATE DURING A LIFT. ALWAYS USE A TAG LINE.

##### INSPECTION:

- BEFORE USE, LOOK FOR ROPE DISTORTION, KINKS, CUT OR BROKEN STRANDS, CORROSION, HEAT DAMAGE, BIRDCAGING, OR CRUSHING. LOOK AT THE END ATTACHMENTS FOR CRACKS, WEAR OR DEFORMATION, HOOKS WITH TWISTS OR A THROAT OPENING INCREASE.
- LOOK FOR BROKEN WIRES: FOR STRAND LAID AND SINGLE PART SLINGS, NO MORE THAN 10 BROKEN WIRES IN 1 LAY OR 5 IN 1 STRAND IN 1 LAY. FOR CABLE LAID AND BRAIDED BROKEN WIRE INSPECTION CRITERIA, CONSULT THE MANUFACTURER. IF THIS WEAR OR DAMAGE IS PRESENT, IF RATED LOAD TAG IS MISSING OR ILLEGIBLE, REMOVE FROM SERVICE AND REPLACE SLING. IF AN INSPECTION REVEALS THAT SUCH WEAR OR DAMAGE IS PRESENT, REPLACE THE SLING. FREQUENT INSPECTION IS DONE BY THE PERSON HANDLING THE SLING BEFORE EACH USE AND MUST INCLUDE ALL OF THE BEFORE USE ITEMS. PERIODIC INSPECTIONS ARE REQUIRED AT LEAST ANNUALLY FOR NORMAL SERVICE QUARTERLY OR MORE FREQUENTLY IF IN SEVERE SERVICE OR NEARLY CONSTANT USE. PERIODIC INSPECTIONS ARE PERFORMED BY A DESIGNATED PERSON WHO RECORDS THE OBSERVED CONDITION AND DETERMINES WHEN FURTHER USE WOULD BE HAZARDOUS.

##### REPAIR:

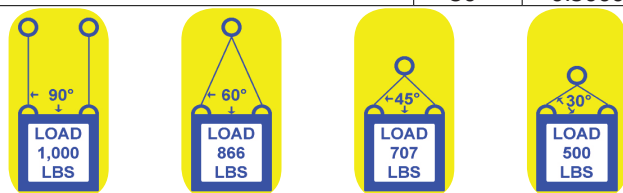
- ANY HAZARDOUS CONDITION DISCLOSED BY AN INSPECTION SHALL REQUIRE REPLACEMENT OF THE WIRE ROPE. REPAIR IS NOT AN OPTION.

#### LOAD ANGLE CHART

ANGLE	FACTOR
90°	1.0000
80°	0.9848
75°	0.9659
70°	0.9397
65°	0.9063
60°	0.8660
55°	0.8192
50°	0.7660
45°	0.7071
40°	0.6248
35°	0.5736
30°	0.5000

Angle factor must be applied to calculate the reduced sling capacity when lifting force is not at 90° to the plane of the load.

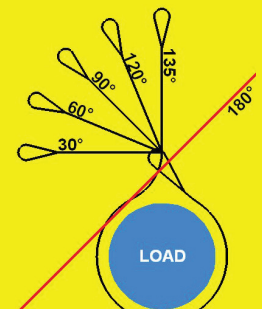
Multiply angle factor x sling's vertical rated load to calculate the reduced capacity at that angle.



Because of the greatly reduced lifting capacity, use extra care when the sling to load angle, also known as the horizontal angle, is less than 45° and do not make lifts of less than 30° load angle. Example: a sling with adequate capacity could be broken because of increased tension resulting from angles of less than 30°. When possible, use longer slings to minimize angular tension by increasing the angle.

#### CHOKE ANGLE EFFECT

ANGLE OF CHOKE	RATED CAPACITY **
OVER 120°	100%
90°-120°	87%
60°-89°	74%
30°-59°	62%
0°-29°	49%



\*\* PERCENT OF SLING RATED CAPACITY IN A CHOKER HITCH.

RATED CAPACITY OF SLING SHALL BE DECREASED WHEN D:d RATIO WILL BE SMALLER THAN THAT CITED IN THE LATEST REVISION OF ASME B30.9 CH2. CONSULT THE SLING MANUFACTURER FOR SPECIFIC DATA OR REFER TO THE WRTB WIRE ROPE SLING USER'S MANUAL.

GENERAL NOTE: WHEN D IS 25 TIMES THE COMPONENT ROPE DIAMETER (d) THE D:d IS EXPRESSED AS 25:1.

