

# WIRE ROPE IS A MACHINE. UNDERSTAND AND RESPECT IT!

Like any machine, it needs proper care and maintenance for optimal SAFETY and long service life.

## IMPORTANT WARNINGS

**READ ALL WARNINGS BEFORE USING THIS PUBLICATION**  
**Failure to follow warnings and instructions may result in serious injury or death.**

### Working Load Limit

This is the most commonly used term. There are, however, other terms used in the industry which are interchangeable with the term Working Load Limit. These are: WLL, SWL, Safe Working Load, Rated Load Value, Resulting Safe Working Load, and Rated Capacity.

**Never** exceed the Working Load Limit.

The Working Load Limit is the maximum load which should ever be applied to a product, even when the product is new and when the load is uniformly applied – straight line pull only. **Avoid side loading.** Our wire rope ratings are based upon usual environmental conditions, and consideration must be given to unusual conditions such as extreme high or low temperatures, chemical solutions or vapours, prolonged immersion in sour gas, etc. Such conditions or high-risk applications may necessitate reducing the Working Load Limit.

**Working Load Limit will not apply if product has been welded or otherwise modified.**

### Matching of Components

Components must match. Make certain that components such as hooks, links or shackles, etc. used with wire rope (or chain or cordage) are of suitable material size and strength to provide adequate safety protection. Attachments must be properly installed and must have a Working Load Limit at least equal to the product with which they are used. Remember: Any chain is only as strong as its weakest link.

### Raised Loads

**Keep out from under a raised load.**

Take notice of the recommendation from the Safety Council Accident Prevention Manual concerning all lifting operations:

“All employees working at cranes or hoists or assisting in hooking or arranging a load should be instructed to **keep out from under the load.** From a safety standpoint, one factor is paramount: Conduct all lifting operations in such a manner, that if there were an equipment failure, no personnel would be injured. This means keep out from under a raised load and keep out of the line or force of any load.”

**Do not operate a load over people. Do not ride on loads.**

### Shock Loads

Avoid impacting, jerking or swinging of loads as the Working Load Limit could be easily exceeded and the Working Load Limit will not apply. A shock load is generally significantly greater than a static load. **Avoid shock loads.**

# IMPORTANT WARNINGS

## READ ALL WARNINGS BEFORE USING THIS PUBLICATION

Failure to follow warnings and instructions may result in serious injury or death.

### Regular Inspections

Inspect products regularly for visible damage, cracks, wear, elongation, rust, etc. **Protect all products from corrosion.** The need for periodic inspections cannot be overemphasized. **No product can keep operating at its rated capacity indefinitely.** Periodic inspections help determine when to replace a product and reduce rigging hazards. **Keep inspection records** to help pinpoint problems and to ensure periodic inspection intervals.

Due to the diversity of the products involved and uses to which they can be put, it would be counterproductive to make blanket recommendations for inspection procedures and frequency. Best results will be achieved when qualified personnel base their decisions on information from rigging and engineering manuals and on experience from actual use in the field. **Refer to sources listed in T.O.C. > ADDITIONAL REFERENCE MATERIAL > TECHNICAL SAFETY AND INFORMATION SOURCES for technical literature.**

**Frequency of inspection** will depend on environmental conditions, application, storage of product prior to use, frequency of use, etc. **When in doubt, inspect products prior to each use.** Carefully check each item for wear, deformation, cracks or elongation – a sure sign of imminent failure. Immediately withdraw such items from service.

**Rust damage is another potential hazard.** When in doubt about the extent of corrosion or other damage, withdraw the items from service.

**Destroy, rather than discard, items that have been judged defective.** They might be used again by someone not aware of the hazard involved.

### DEFINITIONS

Information contained in this catalogue is subject to change; all weights and dimensions are approximate. Ratings are stated in short tons (2,000 lbs.) or pounds. All dimensions are in inches; all weights are in pounds, unless stated otherwise.

#### Working Load Limit (WLL)

The Working Load Limit is the maximum load which should ever be applied to the product, even when the product is new and when the load is uniformly applied – straight line pull only. **Avoid side loading.** All catalogue ratings are based upon usual environmental conditions and consideration must be given to unusual conditions such as extreme high or low temperatures, chemical solutions or vapours, prolonged immersion in salt water, etc. **Never** exceed the Working Load Limit.

#### Proof Test Load (Proof Load)

The term "Proof Load" designates a quality control test applied to the product for the sole purpose of detecting defects in material or manufacture. The Proof Test Load (usually twice the Working Load Limit) is the load which the product withstood without deformation when new and under laboratory test conditions. A constantly increasing force is applied in direct line to the product at a uniform rate of speed on a standard pull testing machine. The Proof Test Load does not mean the Working Load Limit should ever be exceeded.

#### Breaking Strength / Ultimate Strength

Do not use breaking strength as a criterion for service or design purposes. Refer to the Working Load Limit instead.

Breaking Strength is the average force at which the product, in the condition it would leave the factory, has been found by representative testing to break, when a constantly increasing force is applied in direct line to the product at a uniform rate of speed on a standard pull test machine. Proof testing to twice the Working Load Limit does not apply to hand-spliced slings.

**Remember:** Breaking Strengths, when published, were obtained under controlled laboratory conditions. List of the Breaking Strength does not mean the Working Load Limit should ever be exceeded.

#### Design Factor (sometimes referred to as safety factor)

An industry term usually computed by dividing the catalogue Breaking Strength by the catalogue Working Load Limit and generally expressed as a ration. For example: 5 to 1.

#### Shock Load

A load resulting from rapid change of movement, such as impacting, jerking or swinging of a static load. Sudden release of tension is another form of shock loading. Shock loads are generally significantly greater than static loads. Any shock loading must be considered when selecting the items for use in a system.

**Avoid shock loads as they may exceed the Working Load Limit.**