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SAFETY INFORMATION

Synthetic Slings and Cargo Tie-Down Assemblies

PERFORMANCE CHARACTERISTIC OF WEBBING

Nylon

The most widely used general purpose synthetic web sling, is unaffected by grease and oil. It has good chemical resistance to aldehydes, ethers, and strong alkalis, but is not suitable for use with acids and bleaching agents or at temperatures in excess of 194 degrees F (90° C). Stretch at rated capacity is approximately 8-10%.

Polyester

Used mainly where acid conditions are present or a minimum stretch is desired, polyester is unaffected by common acids and hot bleaching agents. It is not suitable for use with concentrated sulfuric acids, alkaline or at temperatures in excess of 194 degrees F (90° C). Stretch at rated capacity is approximately 3% (untreated).

Web Sling Safe Use Chemical Chart	Acid	Alcohol	Aldehydes	Strong Alkalies	Bleaching Agents	Dry Cleaning Solvents	Ethers	Halogenated Hydrocarbons	Hydrocarbons	Ketones	Oil, Crude	Oil, Lubricating	Soaps, Detergents	Water, Seawater	Weak Alkalies
	Nylon	No	Ok	Ok	Ok	No	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
Polyester	*	Ok	No	**	Ok	Ok	No	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok

* Disintegrated by concentrated sulfuric acid.

** Degraded by strong alkalis at elevated temperatures.

For specific temperature, concentration and time factors, please consult ALL-WAY.



Calculating Load Factors

When you lift a load with a leg or legs of a sling at an angle, you can calculate the load per leg and the slings rated capacity by using the following formula example:

1. Total Load is 1,000 lbs., divided by 2 legs = 500 lbs (load per leg)
2. Suppose sling angle is 60°
3. Multiple 500 lbs. x 1.154 (load factor from table) = 577 lbs. (actual load per leg)

You will need a sling rated at 1154 lbs in basket capacity to safety lift this 1,000 lb. load.

Load Factor Chart

Leg Angle	Load Factor
90°	1.000
85°	1.003
80°	1.015
75°	1.035
70°	1.064
65°	1.103
60°	1.154
55°	1.220
50°	1.305
45°	1.414
40°	1.555
35°	1.743
30°	2.000

Inspection Frequency

Three important factors need to be reviewed to determine your sling inspection frequency:

- ◆ **Sling Usage:** The more frequently a sling is used, the more often it requires inspection.
- ◆ **Use Environment:** The harsher the working environment the sling is used in, the more often it requires inspection.
- ◆ **Sling Service Life:** Base your conclusions on your previous experience in using slings.

The individual handling your slings should visually inspect all slings before each lift. Additional inspections should be made

at least once a year by a qualified individual, and permanent records should be kept. OSHA mandates that "Each day before being used, the sling and all fastenings and attachments shall be inspected for damage or defects by a competent person designated by the employer. Additional inspections shall be performed during sling use, where service conditions warrant."

Replacement Guidelines

If you see damage such as the following listed below, remove slings (including round slings) immediately from service. Return them to service only when approved by a qualified individual. Following are the removal criteria established by ANSI B30.9:

1. Acid or caustic burns.
2. Melting or charring of any part of the sling.
3. Holes, tears, cuts or snags.
4. Broken or worn stitching in load-bearing splices.
5. Excessive abrasive wear.
6. Knots in any part of the sling.
7. Excessive pitting or corrosion, or cracked, distorted or broken fittings.
8. Other visible damage that causes doubt as to the strength of the sling.

In addition, ALL-WAY recommends four other important reasons to remove slings from service;

1. If you see our Red Core warning yarns.
2. Distortion of the sling.
3. The sling has an identification tag that is in anyway unreadable.
4. Anytime a sling is loaded beyond its rated capacity, for any reason.

While these standards are quite specific regarding reasons for removal, others require your good judgement and common sense. Critical areas to watch are wear to the body of the sling, the selvage edge of the webbing, and the condition of the eyes.

Samples of Hitches

