

LOSS CONTROL DATA GUIDE

Safe Methods of Cable Fastening

The following methods are standard safe methods to be used in cable fastening:

Short splices, eye to eye splices, cat's paws, knots, molles and rolled eyes are not recommended, except for temporary purposes. They should not be used where they are subjected to strain.

Eye splices in all "regular lay" lines should be tucked at least three times. Eye splices in "lang lay" lines should be tucked four times. Splices other than eye splices in "lang lay" lines are not recommended.

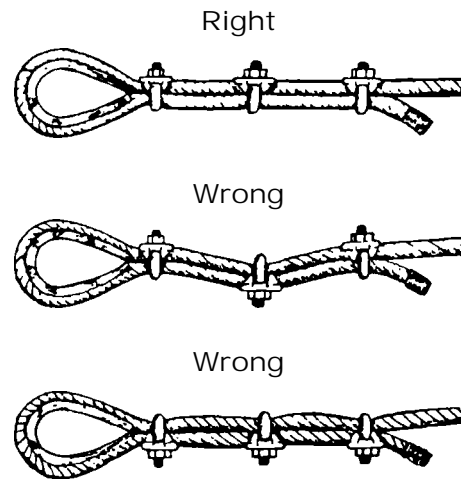
Cable clips

80% of rated rope strength will be considered developed by the use of U-bolt type clips properly attached and in conformity with number and spacing as given in the following table:

Rope Diameter In Inches	Number Of Clips Required	Space Between Clips
1/8" to 1/4"	2	1-1/2"
5/16" to 3/8"	3	2-1/4"
7/16" to 3/4"	4	4-1/2"
7/8"	5	5-1/4"
1"	5	6"
1-1/8"	5	7"
1-1/4"	5	8"

Rope Diameter In Inches	Number Of Clips Required	Space Between Clips
1-3/8"	6	8-1/2"
1-1/2"	6	9"
1-3/4"	6	10-1/2"
2" to 2-1/4"	7	13-1/2"
2-1/2"	8	15"
2-3/4" to 3"	9	18"

Install clips correctly



Clips should be spaced at least six rope diameters apart to get the maximum holding power and shall always be attached with base or saddle of the clip against the stress-bearing or standing strand of the rope.

End fastenings

The rated efficiency of various types of end fastenings shall be as follows:

Sockets - poured zinc	100
Pressed or Swaged (Factory made)	100
Open-wedge Sockets	80 to 90
Clips ("U" bolt type)	80
Spliced-in Thimbles:	
1/4 inch diameter and smaller	90
5/16 inch diameter	89
3/8 inch diameter	88
1/2 inch diameter	86
5/8 inch diameter	84
3/4 inch diameter	82
7/8 inch diameter and up	80

Making long splices in wire rope

The safe margin of line to be used in making a long splice is indicated in the following table. The full length of the splice will be twice the length "to be unraveled".

Rope Diameter	To Be Unraveled	Rope Diameter	To Be Unraveled
1/4"	5'	1-1/4"	15'
1/2"	7'	1-1/2"	20'
3/4"	9'	1-3/4"	25'
1"	12'	2"	30'

Attaching wire rope sockets

The following recommendations of wire rope manufacturers should be followed in attaching sockets or similar end fastenings.

1. Serve the rope with soft tie wire before cutting. Place two additional servings at a distance from the end equal to the length of the basket of the socket. For ropes of over 1-1/4" these servings should be several inches wide. This is important as it prevents loosening of the lay. If the lay becomes untwisted it means unequal tension on the strands and loss of strength when load is applied.
2. Take off the end serving. Leave other servings in place at distance from end equal to length of basket. Cut out hemp center back to serving. Untwist and broom out wires.

3. Clean the broomed wires thoroughly, for the distance they are to be inserted in the socket, with benzine, naphtha or gasoline. Then dip broomed wires into commercial muriatic acid to a depth of three-quarters of the length of the cleaned wires. Time in the acid 30 seconds to 1 minute or until acid has thoroughly cleaned every wire. Do not let acid touch the hemp or any other part of the rope.

Dip wires in boiling hot water containing small amount of soda to neutralize the acid.

4. Draw the ends of the cleaned wires together with soft wire.
Insert tied wires into basket of socket. Be sure the socket is lined up with axis of rope otherwise there will be uneven pull on strands.
5. Cut the temporary tie wire-broom out wire in basket of socket. Seal up base of socket with clay, putty or something similar. Pour molten zinc into the basket until it is full. Tap side of socket with hammer while zinc is still molten.
6. Use pure zinc only (not babbitt nor lead). If these are used, strength of fastening will be less than strength of rope.
7. Zinc must not be too hot or it will anneal wires. Temperature should not be above 830° Fahrenheit. Use pine stick test. If pine stick chars but does not ignite zinc is ready to pour. If zinc is too hot it has red color and stick will catch fire.

The loss prevention information and advice presented in this brochure are intended only to advise our insureds and their managers of a variety of methods and strategies based on generally accepted safe practices, for controlling potentially loss producing situations commonly occurring in business premises and/or operations. They are not intended to warrant that all potential hazards or conditions have been evaluated or can be controlled. They are not intended as an offer to write insurance coverage for such conditions or exposures, or to imply that Great American Insurance Company will write such coverage. The liability of Great American Insurance Company is limited to the specific terms, limits and conditions of the insurance policies issued.