

# Wire Rope/Line Inspection





# Line Inspection

- Standing vs. running lines
- Out of service criteria
- What to look for
- How often to inspect
- Splicing requirements





# Standing Vs. Running Line

Running line/running rope:

- any rope or moving line directly involved with the yarding of logs

Standing line:

- guy line
- a nonoperation rope with end terminations to support a boom or mast



# Running Line Rules

296-54-557 (2) Wire rope must be removed from service if any of the following exists:

- (a) In running, ropes six randomly distributed wires in one lay or three broken wires in one strand in one lay
- (b) Wear of one-third the original diameter outside individual wires. Kinking, crushing, bird caging, or any other damage resulting in distortion of rope structure



# Running Line Rules

- (c) Evidence of any heat damage
- (d) Reductions from nominal diameter of more than  $3/64$ -inch for diameters to and including  $3/4$ -inch,  $1/16$ -inch for diameters  $7/8$ -inch to  $1-1/8$ -inch, inclusive,  $3/32$  for diameters  $1-1/4$ -inches to  $1-1/2$  inch inclusive



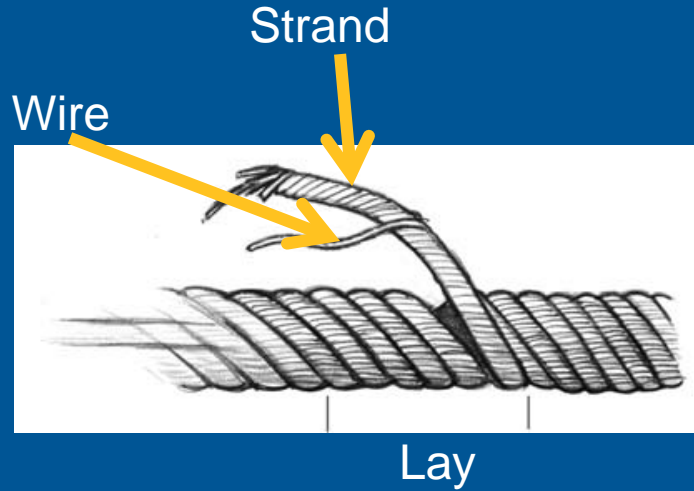
# Standing Rope

296-54-557(2):

- (e) In standing ropes, more than two broken wires in one lay in sections beyond the end connections or more than one broken with at the end connection
- (f) Corroded, damaged, or improperly applies end connections

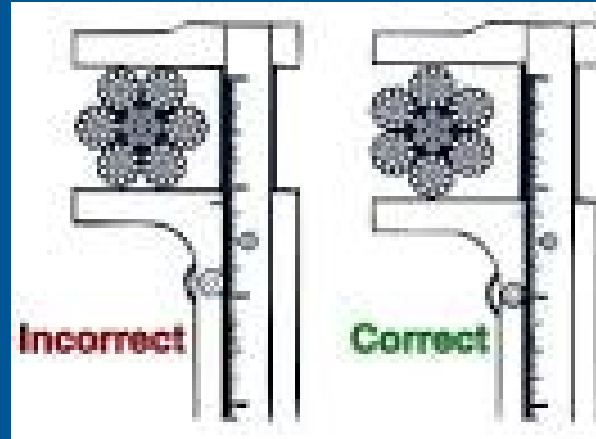


# Wire, Strand, and Lay





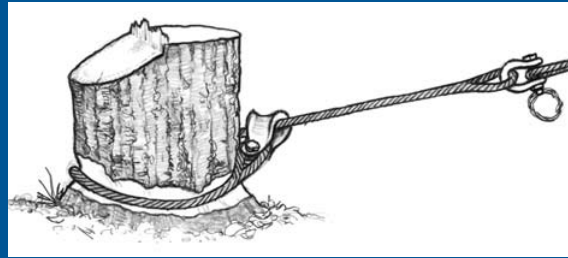
# Measuring Wire Rope







# Common Wear Areas



In the eyes at the shackle



Areas where line takes a hard bend, such as, around drums or sheaves.

On pressed eyes at the connection.





# Inspection

- Inspect extension and straps before each use
- Anytime damage may have occurred; line fouled on drum, running line over rock, or other situations that may have caused damage.
- Crew and yarder operator should constantly be checking.
- During splicing





# Splicing Rules

54-55720(2) Short splices, eye-to-eye splices, cat's paws, and knots are prohibited except for moving nonload-bearing lines. Knots may be used on single drum tractors, grapple pickup lines, and drop line carriage systems using slider bells if the knot is tied at the end of the drop line.



## Long Splice

- Long splices must be used to permanently join running lines
- The length of line strand to be unraveled to make a long splice in wire rope must be as shown in Table 2: Length of Line Strand. The full length of the splice is twice the length of rope to unraveled.



Table 2: Length of Line Strand

# Length of Line Strand when Long Splicing

Rope Diameter	To Be Unraveled	Total Length
1/4"	8'	16'
3/8"	8'	16'
1/2"	10'	20'
5/8"	13'	26'
3/4"	15'	30'
7/8"	18'	36'
1"	20'	40'
1-1/8"	23'	46'
1-1/4"	25'	50'
1-3/8"	28'	56'
1-1/2"	30'	60'
1-5/8"	33'	66'
1-3/4"	35'	70'
1-7/8"	38'	76'
2"	40'	80'



# Resources

Chapter 54: Logging operations, Safety standards  
WAC rules for logging can be found by visiting:  
<https://lni.wa.gov/safety-health/safety-rules/rules-by-chapter/?chapter=54>