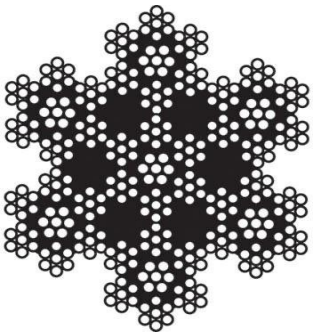
GUIDELINE FOR MANUFACTURING STEEL WIRE ROPE LOG WRAPPERS

This document has been developed by the Log Truck Technical Advisory Committee (LTTAC), a forest industry working group focused on improving safety performance in log hauling. The information contained within this document is intended to provide technical data and direction with regards to the manufacture of wrappers designed for the purpose of log load securement from both an operational, technical, and regulatory perspective.

Materials

(** Identifies preferred materials)

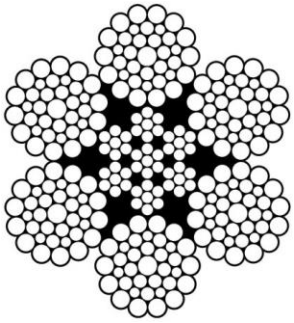
WIRE ROPE



3/8” 7x7x7 EIPS GALV MBL 14,300 lbs

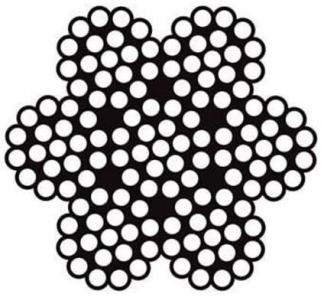
5/16’’ 7x7x7 EIPS GALV MBL 8,000 lbs

** 7x7x7 is by far the most flexible and most common wire rope used for log wrappers but the smaller wires make it more susceptible to abrasion.



3/8” 6x36 IWRC bright 1960 MBL 16,600 lbs

6x36 is more flexible than 7x19 but less flexible than 7x7x7. It is more abrasion resistant than 7x19 but less abrasion resistant than 7x19.



3/8” 7x19 EIPS GALV MBL 14,400 lbs

7x19 is the least flexible of the 3 but has larger outer wires for better resistance to abrasion.

SLEEVES / END TERMINATIONS

Aluminum oval sleeves

Typically 90% efficient when the tail of the wire rope is equivalent in length to the diameter of the wire rope.

Carbon fold back sleeves

Approximately 96% efficient

** Flemish sleeves

Most ideal because they are approximately 90% efficient but don't require the tail to stick out, making hand injuries less likely.

CHAIN

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Grade 70 chain

shall be the minimum grade of chain used when manufacturing log wrappers.

**5/16” MBL = 18,000 lbs
.93lbs per foot

3/8” MBL = 33,000 lbs
1.43lbs per foot

Grade 80 Chain

5/16” MBL = 18,000 lbs
1.13 lbs per foot

3/8” MBL = 28,400 lbs
1.48 lbs per foot

Grade 100 Chain

5/16” MBL = 22,800 lbs
1.13 LBS PER FOOT

3/8” MBL = 35,200 lbs
1.48 LBS PER FOOT

WIRE ROPE TERMINATIONS AND THIMBLES

Using a thimble in the eye of the sling is strongly recommended when

manufacturing log wrappers. This will help reduce the likelihood of the sling eye

becoming damaged or breaking.

Wire rope eye size shall be at least twice the diameter of the chain.

If using carbon fold back or aluminum oval sleeves, the tail length of the eye should be at least ½" or equal to the diameter of the wire rope. Whichever is greater.

Eye length must not be smaller than 2x the diameter of the chain.

DISCLAIMER AND REFERENCES

- Actual strengths weights and ratings of chain and individual components may vary by manufacturer.
- Other materials such as stainless-steel wire rope and sleeves are permissible for use as long as Grade 100 chain used in manufacturing log wrappers shall meet ASTM A/973/A973M-21, Grade 80 chain used in manufacturing log wrappers shall meet ASTM A391/A391M-21, Grade 70 chain used in manufacturing log wrappers shall meet ASTM/A413M-21.
- Wire rope used in manufacturing log wrappers shall meet ASTM A1023/A1023M-21.
- Log wrappers shall be manufactured in accordance with ASME B30.9