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Service Bulletin 03-002

Date: April 24, 2003
To: Branch Managers & Service Managers
From: Dave Romo
cc: Distribution List
Subject: 5 x 26 WSR 8.4 mm Green Flex Wire Rope PN (P-00298)

Summary

This bulletin is in regards to a branch request for information on how to determine wear and the question concerning polypropylene core flakes. The Green Flex wire rope is a 5 X 26 WSR (Warrington Seale compacted) construction with HDPP (high-density polypropylene) core, right hand regular lay, preformed, galvanized.

8.4 mm diameter (+0/-0.2 mm) Type 8526

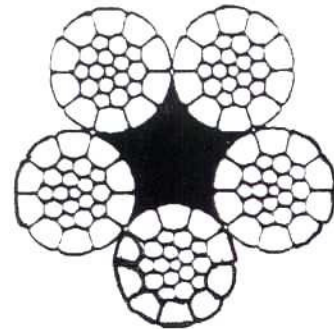
.331 in. diameter (+0/- .008)

Weight: 255 gr./m (.171lbs. /ft)

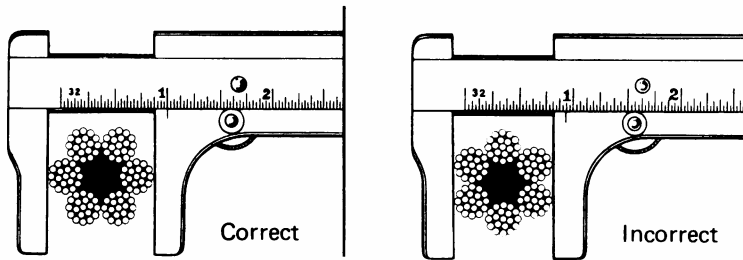
Breaking Loads

Actual: 51.5 kN (11,570 lbs.)

Calculated: 64.6 kN



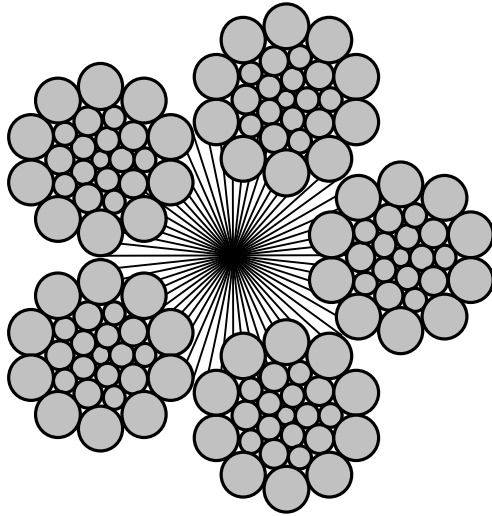
Below you have a sketch that shows the proper way to inspect the diameter of a wire rope. The Green Flex wire rope has a -5% wear tolerance from its nominal size listed above, this would allow the wire rope to measure a minimum of 8 mm / .315 in.



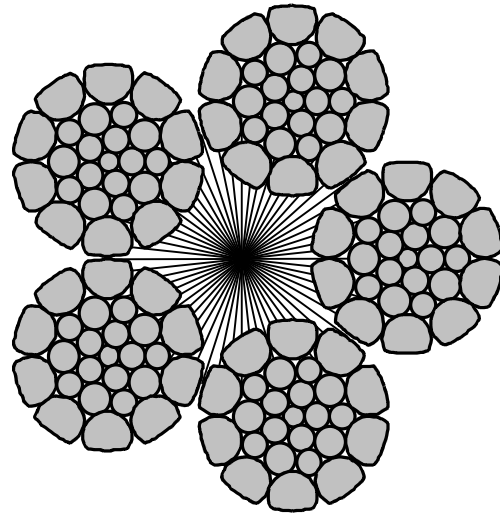
Attached you will also find a letter from the wire rope manufacturer explaining wire rope wear and the function of the polypropylene core.

About the wear

On these picture, you have the same wire rope construction, classic on the left and Compacted on the right:



Warrington-Seale
5 x 26 wires (1+5+5.5+10)



Warrington-Seale Compacted
5 x 26 wires (1+5+5.5+10)

The product we manufacture for Safe Works is the 5x26 Warrington-Seale Compacted Wire Rope on a polypropylene core, as shown on the right picture.

The advantages of the compaction is:

- For the same diameter, the metallic area is bigger, so is the breaking strength
- The outer surface of the strands is bigger, so the contact pressures are lower, and so is the wear.

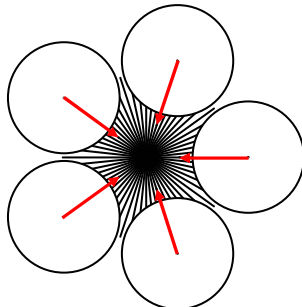
If the user is not familiar with the compacted strands, the rounded shape of the strands may be interpreted as wear. Please also keep in mind that our wires are galvanized. On the contact areas, the color of the galvanization may change; even the steel can be seen after a period of intensive use. This also can be misinterpreted as wear.

A good way to detect wear is to check the diameter of the rope.

About the core

The strands are assembled around a polypropylene core. We ask the core to be a good support of the outer strands during the manufacturing of the rope, and during its life span.

The core doesn't participate in any form the Strength of the rope. It is only solicited in compression, as the strands move toward the center when the rope is loaded.



If the center is too soft, the strands can touch each other and big contact pressures may appear. We try to avoid that in every kind of application, but especially in your application, because the diameter of the rope is critical for the machine to work properly.

That is why we prefer to put a little bit more polypropylene in the center than needed, to be sure that from a manufacturing to another, there always enough support of the outer strands.

Filaments seen on the outside of the ropes are not the absolute sign of wearing of the core, especially at the beginning of the life the rope. They may appear in the first stages of use, when every element takes its place.

If there is any doubt about this, the wire rope diameter should be checked. If the core is wearing, the diameter of the rope will decrease.

Measuring the actual diameter of the rope should confirm or refute suspicion of both wear and core deterioration.

With no other signs of deterioration of the rope (such as wire breaks, waviness, bend, corrosion...), a rope with an actual diameter between +5% and -5% of the nominal value should be considered safe to use.

It is important that anybody feeling uncomfortable about a safety issue feels free to ask question to the wire rope manufacturer. So please don't hesitate to contact us if you notice anything unusual. The field experience always prevails.

We are always available for discussions on the subject,

Patrick Labouré, Ph.D.
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Technical & Sales Manager