**PRESS RELEASE**

A quality lubricant reduces wear rate and replacement costs of wire ropes

***22 June 2016:*** *Industrial equipment such as cranes, anchors, elevators, shovels, suspension and structures have wire ropes which are important to their operation. They are designed for different applications in usually harsh environmental conditions.*

Wire ropes come with certification which includes their description and categories such as the lay length, steel grade and application for easy identification. Most of them are made of steel while the core can be made of steel, rope or even plastic. In operation, wire ropes are constantly under stress, as they operate over sheaves, which cause friction due to tractions and therefore require lubrication to keep them working properly.

Wire rope strands rub against each other, effectively causing stretching, bending, fretting, fatigue and loss of strength. The different strand sizes and arrangements allow for varying degrees of rope flexibility and resistance to crushing and abrasion. They need lubrication to deal with bending stresses, high groove pressures, moisture and corrosion that attacks them.

Filter Focus Chief Operating Officer **Craig FitzGerald** indicates that proper lubrication of a wire rope and chain can significantly extend its operational life regardless of the application. Without proper lubrication, the wire rope corrodes, wears and ages quickly and has to be replaced well before its normal life expectancy.

“A common error in industry is to use a thick coating lubricant, this will considerably reduce life expectancy of a wire rope due to corrosion causing moisture being trapped on the inside. The outer lubricant coating attracts s dirt from the surrounding environment, which in turns becomes a grinding paste when passing over sheaves and rolling onto the drum.”

A number of trials have proven these actions to be time consuming, costly and counteractive to wire rope protection. The answer is to use a light, fluid lubricant with a strong anti-wear additive pack, capable of penetrating the rope and lubricating each individual strand, while dispelling moisture. A penetrating lubricant will allow the inner strands to flex and slide against each other without loss of metallic area or breakage caused by strain.

Friction between the wires and strands of the rope causes internal scratches, while lack of anti-wear additives on the outer wires increases crown wear. Humid or hot weather also plays a part in drying out the rope, enabling moisture ingress. The damage caused by an unlubricated or undersized rope could require re-grooving or replacement of the sheaves, which is capital-intensive.

Tensioning is also important as a well-lubricated rope with poor tensioning will still shorten rope and sheave life. The properties of the lubricant should also be reviewed carefully before a decision is made. For instance, the most reliable lubricants have no acids or alkaline, are biodegradable, can penetrate between wires and strands, have a light viscosity but a high fluid film strength, resists oxidation and remains pliable.

Wire rope grease comes in different classifications. The thinnest grease is graded at NLGI 000, while the thickest is graded at NLGI 5. It is being found that lubricants with higher values of oil are better suited for proper rope lubrication. Safety in the industry is paramount and should not be taken for granted. It is highly recommended to conduct regular non-destructive testing on operational ropes.

ND testing uses magnetic flux leakage principles, and is capable of determining and measuring broken strands, Localised Flaws (LF) and Loss of Metallic Area (LMA), which sends signals when determining the loss of area, rust or corrosion and continuity on the strands.

FitzGerald points out that many of the mines in South Africa still use a lubricant that remains on the outside of the wire rope and most apply it by hand. Most of them are unaware of the moisture on the inside, which causes irreparable damage as heat and condensation build up inside.

“Many opt to place a collar around the rope, while it is travelling and apply an extremely thick lubricant, which needs to be liquidised over an open flame beforehand, as it is known to remain on the wire rope longer than other greases. Using these methods can result in accidents, fire and possible loss of life underground,” he continues

Filter Focus offers services such as lubricant and lubricator supply, application and consultation. It distributes Stran/CORE, which is used in conjunction with Core-Lube, an automated wire rope lubricator, which was the first ever to not require pressure to distribute the lubricant into the wire rope. Stran/CORE includes additives that fight corrosion, wear and can displace water in the rope’s core.

According to FitzGerald, Stran/CORE was developed by GRIGNARD Company, specifically for use with the Core-Lube which, unlike most, does not use a pressure collar to distribute the lubricant. “It has been used on numerous popularly known structures all over the world such as the San Francisco Bay Bridge due to its high reliability and corrosion protection capabilities. It is highly safe for marine applications and wet wire ropes. It will not come off the wire rope due to fling off, or while in water or cause a sheen on the water surface. The best part is that it is totally biodegradable and has no threat to land or marine life. It is able to repel the moisture and penetrate directly into the core.”

A regular programme of wire rope lubrication is essential to the life and health of wire ropes. Regular application will help keep ropes and sheaves in good condition and will eliminate any replacement costs in future. The combination of Stran/CORE with the Core Lube automated lubricator provides an exceptionally high level of lubrication, requiring this task to be done less frequently than current re-lubrication intervals.

Application of the lubricant is automatic, safe, quick, reliable and ensures the rope is coated from the inside-out and all moisture repelled and evaporated. “While it might take seven hours to ineffectively apply the lubricant by hand, it takes an hour and a half to do it with the Core Lube,” FitzGerald comments.

The grease is supplied in a self-contained unit and the Core-Lube is used to pump it to the collar using brushes on the inside to make sure that the grease is evenly distributed along the wire rope. It is able to accommodate wire ropes from 3.2 mm to 43 mm in size. It is an easy to use system that eliminates the mess and inconsistence that comes with applying lubricant to a rope by hand. It precisely controls the amount of lubricant going into the wire rope at any speed. Each brush on the lubricator covers a large range of rope sizes and eliminates the need for a rubber seal for every size of wire rope.

Wire rope deformities can be run through the unit at any angle. It significantly reduces the amount of labour required. Stran/CORE guarantees a five times longer life span for the wire ropes. “Using a coating lubricant is as good as not applying any lubrication to the wire rope, as it does not prevent failing from the inside. Current lubrication methods promote tearing and corrosion from contact with external bodies such as dust particles.”

After the cable is put into service, re-lubrication is required due to loss of the original lubricant from loading, bending and stretching of the cable. The Core Lube unit comes with a polyurethane wire rope cleaner that is used to clean the wire ropes before reapplication. “The polyurethane cleaner rotates at the speed of the wire rope, conforms to any angle and lay length, while achieving cleanliness in a matter of minutes. Other groove cleaners on the market do not conform to the different lay lengths of the wire rope and only clean a portion of the rope,” FitzGerald concludes.

To see video of the wire rope cleaning and Core Lube products please visit [www.filterfocus.co.za](http://www.filterfocus.co.za/)

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**Notes to the Editor**To download hi-res images for this release, please visit [http://media.ngage.co.za](http://media.ngage.co.za/) and click the Filter Focus link to view the company’s press office.

**About Filter Focus**Filter Focus SA (Pty) Ltd was formed in January 2002 with the aim of establishing the concept of combination filtration and eliminating contamination related wear and failures in heavy industrial equipment.

**Filter Focus Contact**Craig FitzGerald
Chief Operations Officer
Phone: (011) 466 1268
Email: cfitz@filterfocus.co.za
Web: [www.filterfocus.co.za](http://www.filterfocus.co.za)

**Media Contact**Jana Klut
NGAGE Public Relations
Phone: (011) 867-7763
Cell: 074 111 4900
Email: jana@ngage.co.za
Web: [www.ngage.co.za](http://www.ngage.co.za)

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