but nano® is golden!

The future of sinkers is nano®

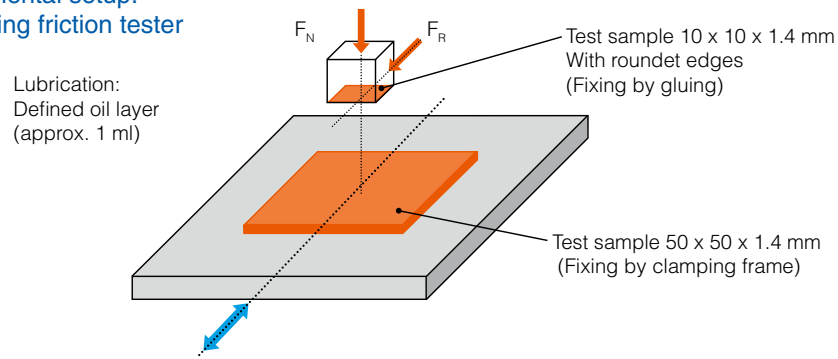
Sinkers are silver,

The proven lower friction offers you a lot of considerable advantages:

- ***lower wear and tear***
- ***less energy consumption***
- ***lower temperatures***
- ***less contamination of your machinery from metal wear***
- ***longer life of your knitting elements***
- ***an important part to sustainably protect your investments***

The structured surface is patent protected for knitting elements and cylinder walls in knittingmachines by the Christoph Liebers GmbH & Co.KG.

Experimental setup:
Oscillating friction tester



The scientists of the so called, Zentrum für Tribologische Schichten - Neue Beschichtungen und Systeme“, had been in charge for the test performings.

Fraunhofer IST

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Sinkers are silver,

Picture 1

shows the surface of a standard sinker by using a microscope: immaculate smoothness - no oil film stays permanently.

Picture 3

The function of the protective oil film decreases continuously with sinkers of a smooth surface, however, the friction increases steadily.

Picture 5

The test shows the wear and tear which occurs at sinkers with smooth surfaces after a short period of 1.5 hours only.

Picture 6

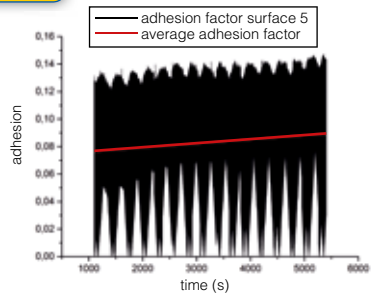
The non-grinding counterpart shows considerable wear and tear and proves that smooth surfaces are exposed to higher friction impact.

New, patented surface revolutionised the world of sinkers

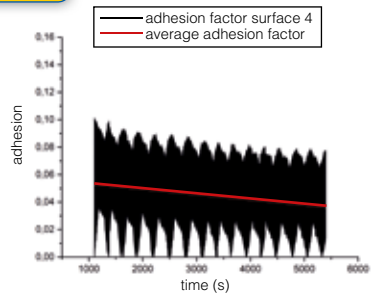
Picture 1

Picture 2

Picture 3 increasing adhesion gradient



Picture 4 decreasing adhesion gradient



Picture 5

Picture 6

From the left:
The small as well as the greater counterpart shows a significant abrasion after the test - the protective oil film is not visible anymore.

Picture 7

Picture 8

From the left:
The small as well as the greater counterpart shows much less abrasion after the test - the protective oil film is still protecting.

The "Fraunhofer Institut" is the most important institution for applied research in Germany. The tests for the verification of the structured surface on knitting elements were carried out in cooperation with this worldwide well renowned organisation. Details on the testing concept are shown on the back side. The pictures were taken by a Z100:X100 lense.

but nano is golden!

Picture 2

shows the fissured surface with microscopically small embedded cavities of a „nano". The oil film spreads throughout the surface, stays and protects sustainable.

Picture 4

With sinkers of a structured surface the gradient of the adhesion factor still shows a decreasing tendency after 1.5 hours.

see picture 7 in comparison to picture 5

The structured surface which applies on „nano" sinkers shows hardly respectively minor wear and tear.

see picture 8 in comparison to picture 6

Christoph Liebers structured surface of the recent patented „nano" sinkers, shows nearly no wear marks on the „non-grinding" counterpart. The continuous oil film is lowering the friction and thereby reduces wear and tear.

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