

T E S T R E P O R T

for the utilization of NPS Engine Improvement

On board the vessel MV SAMSKIP COURIER



NPS Engine Improvement® ?

NPS Engine Improvement® - a Nano particle (i.e. very small), amorphous, formless powder, which interfaces between small moving surfaces to provide protection against extreme pressure; reducing friction and decreasing wear – thereby increasing components life.

NPS Engine Improvement® is not a traditional additive and not based on any existing additive technology; it works by changing the dynamics of the oil film layer by forming a firmly adhesive and elastic anti-friction coating on friction stressed surfaces.

In addition to the benefits of improved efficiency and improved component-life, NPS Engine Improvement® will clean the lubricant circuit and therefore the friction surfaces, improving the viscosity of the lubricant and increasing its lifetime, reducing emissions, regenerating defective spots on friction surfaces, and reducing noise and vibration.

NPS Engine Improvement® properties:

- **Self-regulating under pressure**
- **Flexible, elastic**
- **Retains lubrication abilities at high temperatures**
- **Steady and permanent, firmly adhering**
- **Very-low friction coefficient**

NPS Engine Improvement® benefits:

- **Improves friction values and reduces attrition**
- **Performance increases under pressure**
- **Increases period between oil changes**
- **Forms a firmly adhering wear protection layer**
- **Guarantees an elastic coating that absorbs frictional energy**
- **Reduction of fuel consumption**

NPS Engine Improvement® test evaluation on the vessel "Samskip Courier"



Test Engine Catapillar, Type C18



The test is performed on a Catapillar, Type C18 und 624 PS.

Progress and result of the test.

The NPS Engine Improvement® treatment was carried out in two steps.

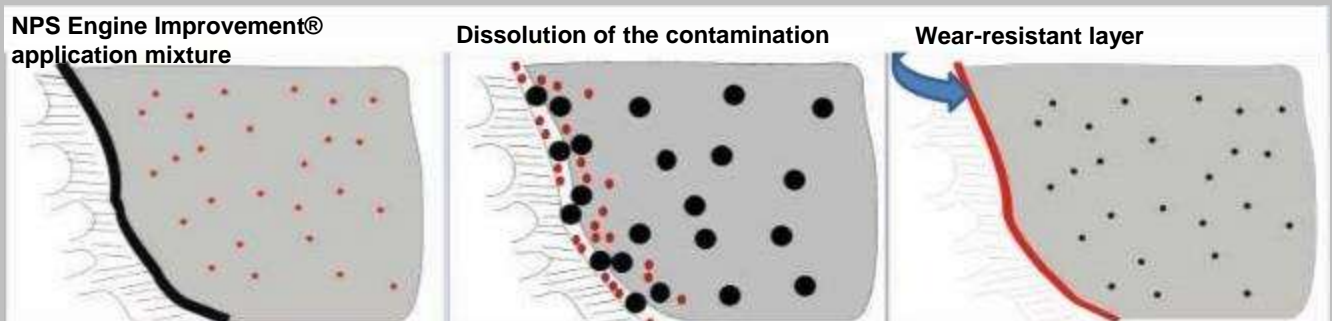


* The consumption during idle mode was 12 L per hour *.

February 24, 2016

The NPS Engine Improvement®-oil-concentrate 2x250ml each step (for this type of engine) was used as follows:

- auxiliary engine must be at normal operating temperature.
- NPS Engine Improvement®-oil-concentrate has to be stirred before usage and then the first step is added into the warm oil level .
- oil and oil filter change is performed after 4 hours running in idle mode, (the pollution of the motor is definitely present in the drained oil and old oil filter).
- After oil and oil filter change the second step was added.
- After an average of 150 operating hours, the Nano particles will be evenly distributed.



Before the start of the NPS Engine Improvement® treatment on February 24, 2016 we have made pictures of different engine parts, after the NPS Engine Improvement® treatment 3 weeks later on March 16, 2016 we have made again pictures of the same engine parts.

See pictures, you can clearly see the differences before and after the NPS Engine Improvement® treatment.



Before

After



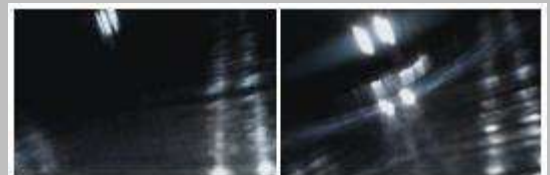
Before

After



Before

After



Before

After

* The consumption during idle mode after the NPS Engine Improvement® treatment was 11 L per hour *.

On March 16, 2016, the consumption is measured again, the result of this measurement is equivalent to the consumption of 11 liters per hour during idle mode. The fuel consumption is hereby reduced by 1 liter per hour. a reduction of 9.2%.

In both the main engine(s) and the auxiliary engine(s) at full load the average fuel reduction will be by an average of 18%.
in order to reach an average saving of 18%, main engine(s), auxiliary engine(s) and the gearbox must be treated with NPS Engine Improvement®.

The durability of the NPS Engine Improvement® protective layer is 12,000 to 15,000 operating hours. After this time, the engine needs a small refresh treatment.

**Let us advise you! We will
inform you about the
possibilities and benefits.**

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