



# ONE OF A KIND SOLID LUBRICANT FOR WHEEL FLANGES



PEWAS Lusaso is a special blend of synthetic composite materials, additives and solid lubricants formed into solid blocks for use in the lubrication of rails and wheel flanges, portal and rail cranes, locomotives, trams, metro wagons and other devices running on steel rails. We are proud to be one of the very few companies in the world to offer this unparalleled quality lubricant to increase the longevity of rail flanges and significantly reduce the consumption of lubricant compared to the use of synthetic grease.

**Increased longevity of wheel flanges** and rail wheels (by 10 % compared to synthetic grease)

**Significantly reduced lubricant consumption** (by 50 -100 times compared to synthetic grease)

**Reduced energy consumption** by 3-7%

**Reduced repair and maintenance costs** of the wheel and rails, especially on railway curves. Longer period of lubricants refilling (1 solid PEWAS Lusaso block is used over 10,000 km)

**Lowered financial losses** from less frequent decommission of the vehicle for renovation

**Increased safety of operation** (fewer cases of derailment)

**Reduced operation noise**

**Significantly reduced contamination** of railway environment thanks to very precise application and so it does not adversely affect traction and braking.

rails and wheel flanges  
portal and rail cranes  
locomotives, trams, metro wagons  
other devices running on steel rails



PEWAS Lusaso comprises a steel chrome robust applicator, into which is inserted the Lusaso lubricant. There is a special string in the applicator, which creates constant pressure after the inserting of Lusaso lubricant, and pushes it to the lubrication area.

Special additives ensure satisfactory anti-wear properties that are particularly important at high pressure loads of the friction surfaces in the "stick-slip" mode of friction. Extreme pressures between wheel and rail infringe the classic oil films, in contrast to the lubricant film formed by the PEWAS Lusaso, to form a physically stable lubricant film over a long time period. Self-supply mechanism ensures the optimization of lubricant film thickness (0.5 – 5 µm) on the lubrication area of the wheel flange during the entire

operation. The very precise application of the Lusaso lubricant on the lubrication area of the wheel flange prevents the contamination of other areas of the wheel and so it does not adversely affect traction and braking.

PEWAS Lusaso is designed to withstand low and high temperatures, mechanical effects and bad weather.



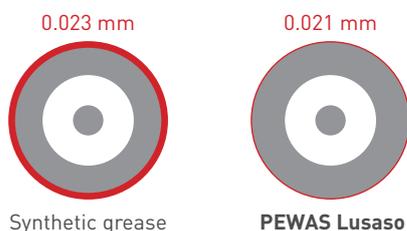
PEWAS Lusaso was tested on various challenging railways profiles: mountains, dusty, winding, curving and cargo profiles.

**Results are based on testing on following profiles:**

1. Slovak lines > Banská Bystrica – Brezno (winding, challenging railway profile)
2. International lines > Vienna – Zagreb – Belgrade (dusty railway profile)

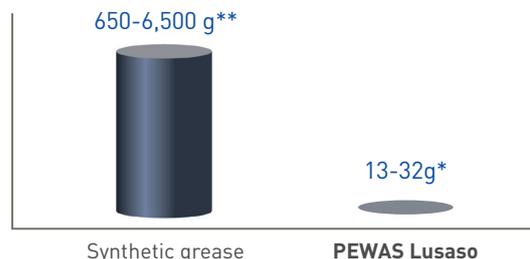
## Results of comparative trials

### Abrasion/Wear of 1 wheel flange (mm) after 1,000 km\*



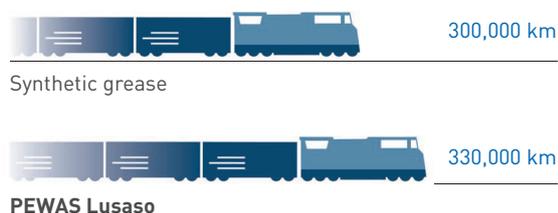
\* Based on the Slovak technical norm STN 28 0335 the wheel flange needs to be replaced when its wear level exceeds 7mm

### Amount of lubricant (g) used for 1,000 km



\*\*depending on the dustiness of the railway surrounding and frequency of curves on the railway profile

### Operating lifetime of wheel flange



**Consumption of PEWAS Lusaso is 50 to 200 times lower** than of plastic lubricants intended for the same application. According real testing we can conclude that approximately 1 piece of PEWAS Lusaso stick (120 g) is used by 1 wheel flange in 10,000 km depending on the dustiness of the railway surrounding and frequency of curves on the railway profile. It means longer period of lubricants refilling, which considerably decrease maintenance costs than by using plastic lubricants. Taking into consideration these factors (as increased longevity of wheel flanges, reduced repair and maintenance costs, longer period of lubricants refilling) the **overall cost with the use of PEWAS Lusaso can be up to 40 times lower** than in case of using synthetic grease. Finally it does not create waste and does not contaminate environment (upper track), as is the case of oils and plastic lubricants.

## Do you have any questions? Please contact us:

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The PEWAS Company specializes in ecological and innovative chemistry, consulting, research and development of new solutions for our clients in several sectors of industry, agriculture and transport.