



# ETERMAR SAVES A REPORTED US\$289,400 A YEAR BY REDUCING GEAR WEAR WITH SHELL OMALA S4 WE

TOTAL REPORTED ANNUAL CUSTOMER SAVING  
**US\$289,400**



**COMPANY:** Empresa de Obras  
Terrestres e Marítimas

**COUNTRY:** Portugal

**APPLICATION:** Gearbox

**SAVING:** US\$289,400 total  
reported annual customer saving

**KEY EDGE:** Shell Omala S4 WE

Portuguese construction and civil engineering company **Empresa de Obras Terrestres e Marítimas, SA (Etermar)** is highly experienced in the marine and fluvial hydraulic works sector. Boom cranes are vital to Etermar's operations. During essential maintenance, it was noticed that the main gearboxes on the booms were suffering from excessive wear. The challenge was to find a product that would lubricate gearboxes with complex metallurgies and offer extended drain periods compared with the existing products.

After Etermar and Shell Lubricants inspected the gears, Shell Lubricants recommended replacing the existing lubricant with Shell Omala S4 WE. Shell Omala S4 WE is an advanced, synthetic, heavy-duty industrial-gear lubricant formulated using specially selected polyalkylene-glycol-based fluids and additives. It offers outstanding lubrication performance under severe operating conditions, including improved energy efficiency in comparison with mineral-oil-based products, long service life and high resistance to micro-pitting.

Switching to Shell Omala S4 WE oil has reduced gear wear and extended the oil-drain interval, thereby reducing costs for parts and labour, and crane downtime. Etermar reports annual savings associated with using Shell Omala S4 WE oil of US\$289,400.



# 1

## CHALLENGE

Etermar noticed that the main gearboxes on its boom cranes were suffering from excessive wear. The challenge was to find a lubricant that would offer superior protection to both the steel-on-steel spur gears and the phosphor-bronze worm-wheel system in the hybrid gearbox.

# 2

## SOLUTION

To meet the challenges of extending gearbox life and the oil-drain interval, Shell offered a new generation of fully synthetic gear oils. Shell Omala S4 WE is formulated to provide the maximum protection for steel gears while offering the ultimate solution for lubricating bronze-on-steel worm-wheel combinations.

# 3

## OUTCOME

By changing to Shell Omala S4 WE, Etermar now enjoys enhanced operational reliability. The gearboxes have much reduced pitting and wear on the gear teeth components, and the oil-drain periods are greatly extended, which have both resulted in a stepped increase in vital equipment availability.

# 4

## VALUE

Etermar has reported an annual saving of US\$289,400 associated with changing to Shell Omala S4 WE oil.

\*The savings indicated are specific to the calculation date and mentioned site. These calculations may vary from site to site, depending on the application, the operating conditions, the current products being used, the condition of the equipment and the maintenance practices.

## SHELL OMALA S4 WE

### ADVANCED INDUSTRIAL GEAR OIL

Shell Omala S4 WE is an advanced, synthetic, heavy-duty industrial worm-drive gear oil formulated with specially selected polyalkylene-glycol base fluids and additives. It offers outstanding lubrication performance under severe operating conditions, including improved energy efficiency, long service life and high resistance to micropitting.



### Applications

- Enclosed industrial worm gear systems. Shell Omala S4 WE is recommended for industrial worm-gear reduction systems operating under severe conditions, such as high load, very low or elevated temperatures, and wide temperature variations.
- Extended life systems. The product is particularly recommended for systems where maintenance is infrequent or systems are inaccessible, for example, yaw gears in wind turbine installations.
- Other applications. Shell Omala S4 WE oils are suitable for lubricating bearings and other components in circulating and splash-lubricated systems.

Shell Omala S4 WE is not recommended for lubricating components manufactured from aluminium or aluminium alloys.

For highly loaded spur and helical gears, the Shell Omala G series oils are recommended.

For automotive hypoid gears, the appropriate Shell Spirax oil should be used.

### Performance features and benefits

- Long oil life – maintenance saving. Shell Omala S4 WE is formulated to provide excellent oxidation and thermal stability, which extend lubricant life and resist the formation of harmful oxidation products at high operating temperatures. This helps to maintain system cleanliness

over extended oil-drain intervals. This performance is recognised by Flender: a formal approval for 20,000 hours' (four years) use at 80°C (bulk oil temperature) has been granted. Shell Omala S4 WE offers the potential to extend service intervals significantly compared with conventional industrial gear oils.

- Excellent wear protection. Shell Omala S4 WE is formulated to have excellent load-carrying capacity, which provides long component life even under shock-load conditions. It also has a high resistance to micropitting. These features provide benefits over mineral oil-based products in terms of gear and bearing component life.
- Maintains system efficiency. Shell Omala S4 WE offers improved energy efficiency and lower operating temperatures in worm-gear applications. Rig testing has shown efficiency improvements of up to 1.5% compared with mineral oil-based products and 11% over other synthetic hydrocarbon-based lubricants. These results have been confirmed by equipment manufacturer testing and field experience.

### Specifications and approvals

Shell Omala S4 WE is fully approved by Flender and Bonfiglioli. It meets the requirements of: David Brown S1.53.105 G; ISO 12925-1 Type CKE; and ANSI/AGMA 9005-E02 (EP).

### Complementary products

Equipment	Lubricants
Hydraulic systems	Shell Tellus
Gears	Shell Omala
Compressors	Shell Corena
Slideways	Shell Tonna
Industrial greases	Shell Gadus