



# Shell Lubricants

## CONSTRUCTION

# Etermar saves a reported US\$289,400 a year by reducing gear wear with Shell Tivela S

Total reported annual  
customer saving

**US\$289,400**



**Company:** Empresa de Obras Terrestres e Marítimas, SA

**Country:** Portugal

**Application:** Gearbox

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

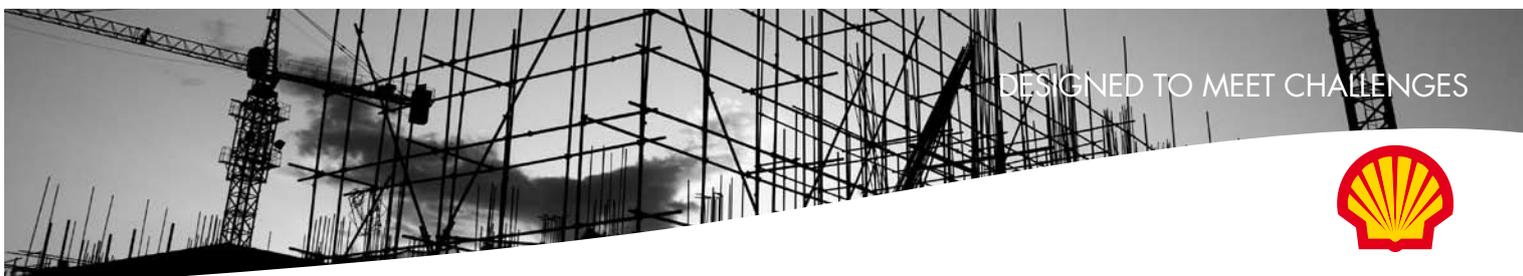
**Key edge:** Shell Tivela S 460

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 Tivela S. Shell Tivela S 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 Tivela S 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 Tivela S oil of US\$289,400.

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DESIGNED TO MEET CHALLENGES



# 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 Tivela S 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 Tivela S, a lubricant that is better suited to cope with the operational and environmental challenges of this application, 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 Tivela S oil.

## SHELL TIVELA S

### Synthetic industrial-gear lubricants

Shell Tivela S oils are advanced, synthetic, heavy-duty industrial-gear lubricants formulated using specially selected polyalkylene-glycol-based fluids and additives. The oils offer outstanding lubrication performance under severe operating conditions, including improved energy efficiency compared with mineral-oil-based products, long service life and high resistance to micro-pitting. Shell Tivela S oils resist the formation of harmful oxidation products at high temperatures, thus helping to improve system cleanliness and therefore the reliability of the equipment.



### Applications

Shell Tivela S oils are specifically designed for:

- enclosed, industrial reduction-gear systems operating under severe conditions;
- worm gears;
- lubricated-for-life systems;
- bearing and circulating systems such as calenders with high bulk oil temperatures; and
- plain and roller-element bearings.

### Performance features and benefits

- Excellent load carrying capacity and micro-pitting resistance
- Excellent lubrication resulting in improved gear efficiency
- Excellent oxidation and thermal stability

- Long service intervals
- Excellent corrosion protection
- Compatibility with a wide variety of seals and paints, and Loctite® sealants

### OEM approvals

Amandus Kahl (pallet presses, ISO 460 grade)  
 Bonfiglioli (ISO 220, 320, and 460)  
 Flender  
 Getriebebau Nord (ISO 220 and 68)  
 Lenze (ISO 220, 460 and 680)  
 Meets David Brown Type G specification

### Seal and paint compatibility

High-quality epoxy paints are recommended because polyalkylene glycols attack some conventional paints. Shell Tivela S has been found to perform satisfactorily with nitrile and Viton® seal materials, although Viton seals are preferable.

### Complementary products

Type	Lubricants
Hydraulic oils	Shell Tellus
Gear oils	Shell Omala
Compressor oils	Shell Corena
Slideway oils	Shell Tonna
Industrial greases	Shell Albida



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“Shell Lubricants” refers to the various Shell companies engaged in the lubricants business.