

James Walker

High Performance Engineered Thermoplastic Sheaves



Innovative Thermoplastic Engineering



Introduction

James Walker has been pioneering the use of Devlon® sheaves in industry for the last 30 years. During this time, we have gained a breadth of experience in the capabilities of our proprietary range of materials, leading us to supply wire rope sheaves across various industries, most prominently offshore oil and gas.

Produced in the same sizes as their metallic counterparts, Devlon sheaves can also be used for similar rope tensions and in many installations have actually resulted in substantially increased periods of service life.



Case Study

Devlon sheaves have been successfully used by one of the world's leading military subsea technology companies in their Launch and Recovery System (LARS) for their submarine rescue equipment.

These systems must have the capability for air transport, high sea state operation, low temperature designs for polar operations and rapid deployment / custom fit for use on any specified vessel of opportunity (VOO) or dedicated ship. To meet these requirements, the overall weight of the sheaves is critical.

Furthermore, to ensure the competence of Devlon sheaves for these harsh environments, the LARS is manufactured and tested to commercial and military certification standards such as NAVSEA, ABS, DNV and other IACS organisations.



Benefits of Devlon® Sheaves

- **Extended wire rope life**

The unique properties of Devlon® allow a reduced contact pressure between the rope surface and the groove, which significantly reduces wear on the outer strands compared to a traditional metallic part.

- **Extended service life of sheave**

Devlon sheaves have desirable mechanical, impact and wear properties which can typically double their functional lifetime in comparison to their steel counterparts.

- **Reduced weight**

Devlon sheaves are approximately 15% the weight of steel sheaves and 50% the weight of aluminium sheaves.

- **Improved manual handling**

The reduced weight of Devlon sheaves offers improved and easier handling during installation and replacement and also reduces associated freight and shipping costs.

- **Overall cost reduction versus metallic equivalent**

Material cost and a longer service life ensure Devlon sheaves offer an overall cost reduction in comparison to a traditional metallic equivalent.

- **Corrosion and weather resistance**

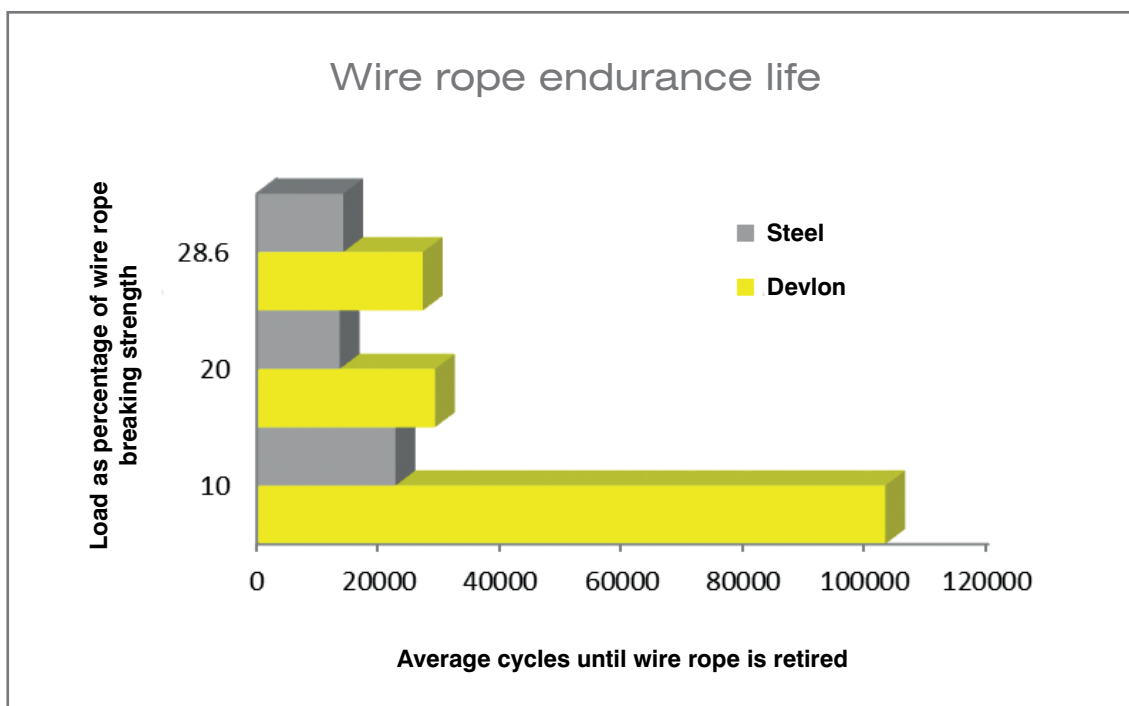
Devlon sheaves do not require to be painted or coated to withstand harsh environments. Devlon is also resistant to most chemicals encountered in this type of application.

- **Vibration damping**

The superior vibration damping properties of Devlon in comparison to traditional metallic parts can have a beneficial effect on the overall life of the whole system, including components such as bearings, housings and shafts.

- **Total manufacturing control**

James Walker has total control of the manufacturing process from start to finish, allowing the product to be developed to the needs of the customer and the design optimised to suit their specific application.



Typical Applications

- Mobile drill rigs
- Launch and recovery systems
- Pedestal cranes
- Truck mounted cranes
- Gantry cranes
- Marine hoists
- Tele-handlers
- Forklift trucks



Capabilities

Weights and Dimensions

The maximum OD of any single-piece sheave would be approximately 1.8m. The thickness and bore size would be constrained by the maximum weight of 1T, however sheave inserts can be manufactured for use in larger diameter, segmented installations.

Bushes and Bearings

Plain, roller or ball type bearings can be supplied and fitted along with Devlube® or metallic bushing to suit customer applications.

Materials

James Walker can manufacture products from a wide range of thermoplastics to suit customer applications. From our proprietary Devlon range, the most common materials specified for sheaves include Devlon T100 and Devlube.

Devlon T100

Inherently stress free and with excellent wear properties, low friction and improved impact strength, Devlon T100 is a proven work horse in a range of applications and industries.

Guidelines

For further information on design guidelines and to submit an enquiry form, please visit our website at www.devol.com or scan the QR code below.



Load Constraints

The technical team at James Walker will analyse the details provided by the customer relating to load cycle and thereafter recommend the most suitable option.

Certification

The quality team at James Walker can be of assistance to aid any type of certification. The most common certifications for sheaves include Lloyds, DNV and BS EN 10204 3.1 materials certifications.

Devlube

A self lubricating material ideally suited for dry-running applications requiring low friction and where lubrication is not possible. Reduced wear through lower friction means excellent retention of physical properties and minimal maintenance.



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