

Engineering Polymer Solutions help to reduce Costs in Construction and Heavy Equipment



Challenges of Hoisting Cranes

Modern cranes are highly specialised pieces of equipment. From the smaller truck mounted types to the largest crawler cranes, the principles of lift using rope sheaves remain a constant but the applications of that principle vary per individual application field. While many lift companies exist and own equipment this segment is experiencing an increase of rental companies purchasing equipment and a decrease in owner-operators. Operators chose to rent as needed in order to keep costs down. This has a considerable impact on the equipment: its operating time per year is much higher than it used to be and the wear and sliding parts of the machines are subject to harsh conditions.



Advantages

Polymer products of the Advanced Materials Division of Mitsubishi Chemical Group (MCG), sold under the Nylatron®, Ertalon®, TIVAR® and Ertalyte® brand names have proven to be the right material for the job. From a wide range of standard and enhanced polymer products the user can choose the optimum material for his individual work environment. The MCG Advanced Materials products are lightweight and still of high strength, they are durable and safe and formulated to maximise performance in the most critical conditions.

Customer Benefits

- High wear and corrosion resistance extend the products' lifetime
- Less maintenance effort and longer life in use help saving time and money
- Products with excellent frictional properties, corrosion resistance and self-lubricating properties prevent the mating surfaces from damage and wear
- Minimum stick-slip behaviour
- Lightweight and reduced noise development
- Corrosion resistance
- Increased energy efficiency

Materials	Products
Nylatron® NSM	Rope sheaves
Nylatron® GSM	Wear pads
Nylatron® MC 901	Track plates
Nylatron® 703XL	Outrigger pads
Ertalon® 6 PLA	Cable guides and rollers
TIVAR® 88	Custom components
TIVAR® DrySlide	
TIVAR® Ceram P	
Ertalyte®	
Ertalyte® TX	



Case Study: Nylatron® Rope Sheaves

Challenge

Lifting devices on rig platforms are equipped with rope sheaves reaching diameters up to 5 meters and more. The cables/ropes run across the sheaves that are made of welded steel. Excessive wear reduces the life of the ropes and cables producing a potential safety hazard.

Solution

Nylatron® rope sheaves handle the high load requirement. Nylatron® is a non-abrasive plastic material that reduces wear on the cable or rope. UV protective additives provide exposure to any harsh weather environment.

Benefits:

- Extended rope life (200-600% more than steel sheaves)
- No cracking or shattering
- Reduction of safety hazards
- Longer lifetime of hoisting cables
- Higher stiffness = lower wear
- Customisable sizes available

Case Study: Nylatron® Outrigger Pads with integrated handles

Challenge

Outriggers are specifically found on lift equipment designed to perform construction related tasks. The majority of mobile cranes will have outriggers for their operational arms and booms. Their purpose is to provide stability to the base of the equipment during the operation.

Solution

MCG Advanced Materials has developed a new generation of Nylatron® outrigger pads now including integrated handles.

No extra equipment needed + no additional assembly required = cost and time savings!

Benefits:

- Material savings
- Minimisation of machining effort
- Overall cost savings
- Individual design solutions
- High load carriage
- Less weight than steel



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