

# Engineering Plastics for Wind Turbines



## Yaw and Rotor Bearing Components

### INDUSTRY TRENDS

- Reduce overall production and maintenance costs
- More output with larger sized turbines, creating higher loads and wear on components
- Reduce friction to increase efficiency

### QUADRANT ANSWERS

- Self lubricating light weight plastics for bearing applications
- High wear resistance under heavy loading

### CUSTOMER BENEFITS

- Reduced maintenance time and costs
- Minimized downtime for replacement
- Improved efficiency
- Less breakage

Quadrant provides high performance plastic as rod, plate or tube for machining or as finished parts. Over 60 years of expertise provides the platform for bringing your concept to the production line.

Let us help you build the optimum machine to increase your output, up-time and efficiency.



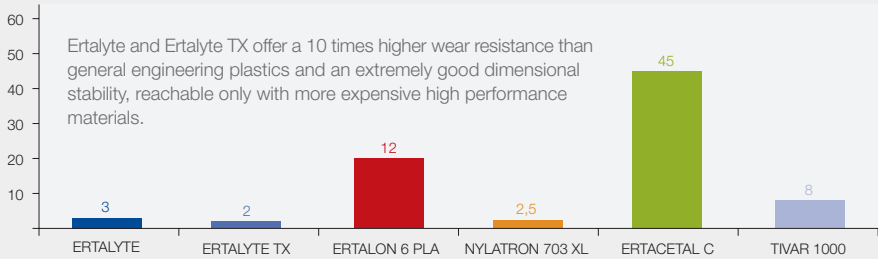
QUADRANT

You inspire ... we materialize®

## COMPARISON OF WEAR RESISTANCE

### WEAR RESISTANCE

[measured on a "plastics pin on rotating steel disk" - tribo system]



Ertalyte and Ertalyte TX offer a 10 times higher wear resistance than general engineering plastics and an extremely good dimensional stability, reachable only with more expensive high performance materials.

#### Test conditions:

pressure: 3 MPa  
 sliding velocity: 0.33 m/s  
 surface roughness of the C35 steel mating surface: Ra = 0.70 - 0.90 µm  
 total distance run: 28 km  
 normal environment [air, 23° C/50% RH]  
 unlubricated operation

## ERTALYTE TX

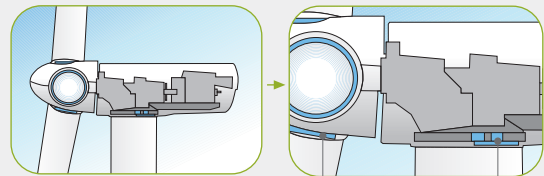
### Thrust washer ring segments in yaw bearing

#### Challenges:

High load resistance up to 115 tons  
 Excellent wear resistance against stainless steel  
 Low friction

#### Solution:

Sliding ring bearing segments made of Ertalyte TX replace ball bearings.



Wear components in pitch bearing.

Thrust washer ring segments in yaw bearing.

#### Benefits:

The higher wear resistance of Ertalyte TX provides longer operating life of the bearing parts. Its self lubricating composition eliminates extra greasing and helps reduce maintenance downtime and costs. Ertalyte TX is available in large dimensions up to 2000 mm.

Please consult us also for solutions in off-shore wind turbines.

Learn more online at  
[www.quadrantplastics.com](http://www.quadrantplastics.com)

Quadrant has extensive product and machining resources available online. Our website is a portal to a wealth of technical data and the easiest way to engage our application specialists. Our team stands ready to help offer solutions to your toughest problems.

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