

# Quadrant Engineering Plastics Products for the Railway Industry

Stock Shapes and Solutions for Original Equipment & Maintenance



You inspire ... we materialize®

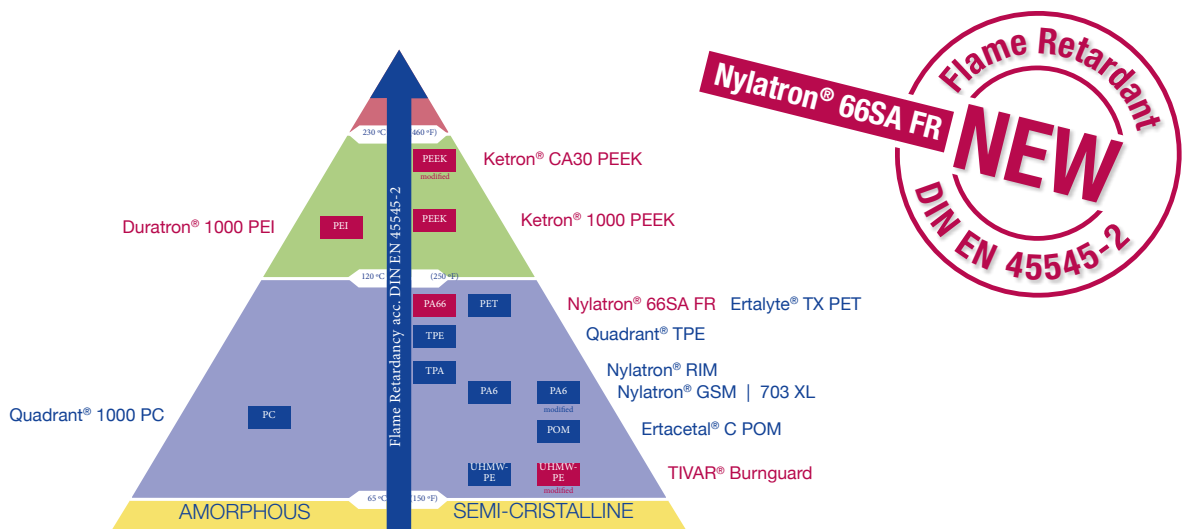
  
QUADRANT

## Solutions for the Railway Industry

Quadrant Engineering Plastic Products (Quadrant EPP) is the world's leading manufacturer of semi-finished products. Our materials range from UHMW polyethylene, nylon and acetal to ultra-high performance polymers that resist temperatures to over 425 °C.

We offer the largest portfolio of engineering plastics dedicated to the railway industry, to both rolling stock and infrastructure. Our core activity is the production of functional parts for moving, supporting and protecting applications including flame retardant products. Users all over the world benefit from the special properties of Quadrant plastics:

- Flame retardancy
- High impact strength and stiffness
- Low and high temperature resistance
- High corrosion resistance
- Excellent wear resistance
- Self-lubrication
- Very good sliding properties



## You are an OEM?

We offer a railway-specific portfolio of engineering plastics and special modified grades. Our flame retardant materials according to DIN EN 45545-2, our decades of experience, the modern production technologies and our products' compliance with technical and regulatory guidelines assist you in developing modern railway vehicles. Chose Quadrant plastics to achieve the right results:

- Weight reduction
- Noise reduction
- Cost reduction
- Impact protection
- Low temperature suitability
- Meet national and regional regulations
- Conformity with environmental requirements

## Quadrant Engineering Plastic Components



...in high-speed trains



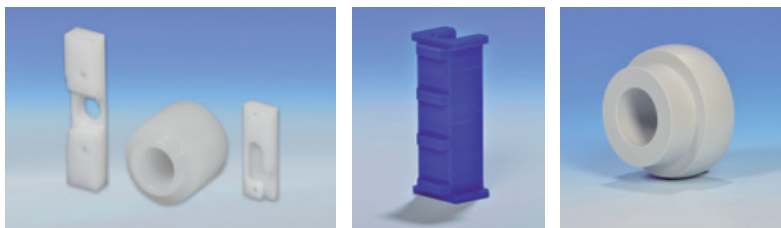
...in underground railways



...in freight trains



...in tramways

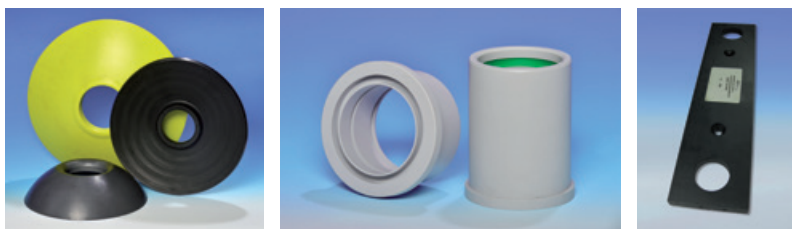


## Glide & Wear Solutions

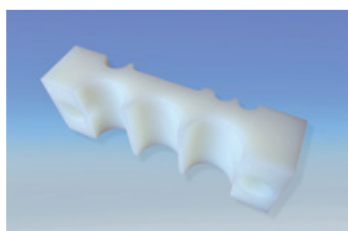
Wear strips, gliding lists and rollers in seating and doors  
[TIVAR® 1000, Ertalon® 6SA, Ertalyte® TX]



## Bogie Wear Solutions

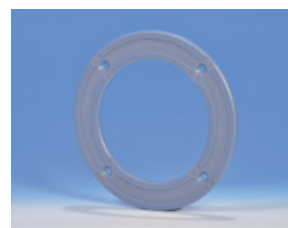
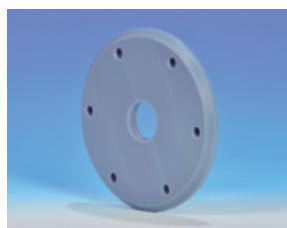
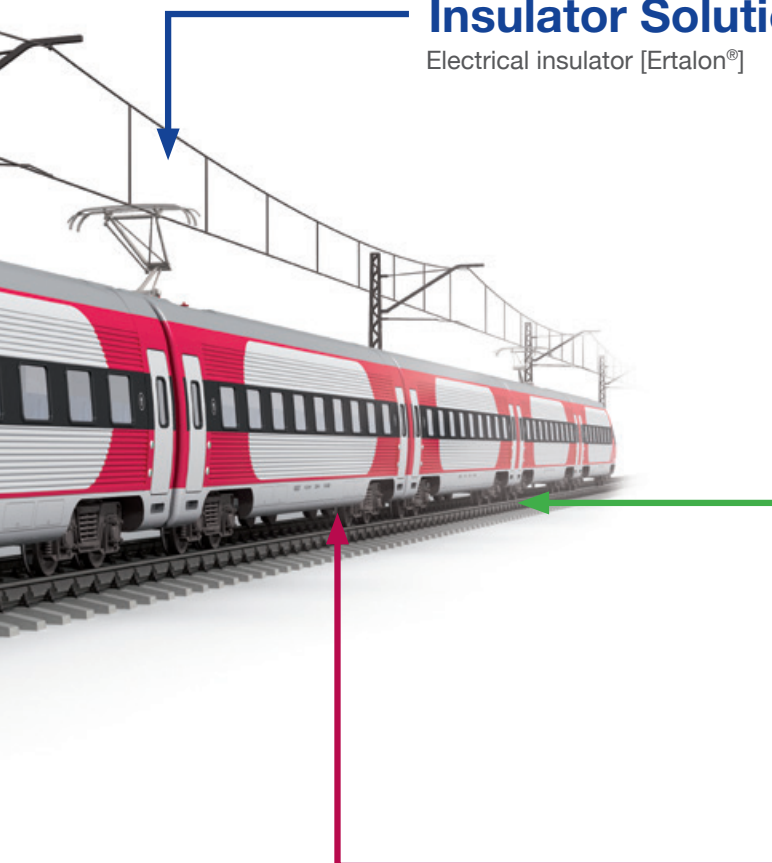


Center bowl liners [TIVAR®, Ertalyte®, Nylatron®]  
Bushing for anti-roll bar [Ertalyte® TX]  
Lateral liner [Nylatron® NSM]



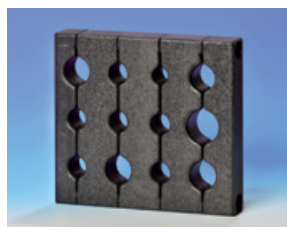
## Insulator Solutions

Electrical insulator [Ertalon®]



## Suspension Solutions

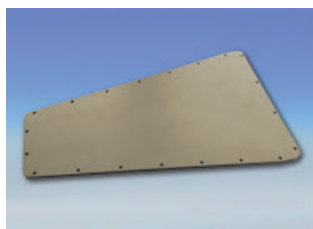
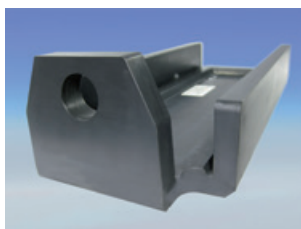
Sliding disk and ring for air suspension [TIVAR® DS]



## Flame Retardant Solutions

Cable guide [TIVAR® Burnguard]

## Protector Solutions



Protector for secondary air suspension chamber [Nylatron® RIM 3000]

Underbody sensor protector [Ertalon® 6XAU]

Sensor protector [Ketron® 1000 PEEK]

## The Quadrant Added Value



## You are Focusing on Reduction of Maintenance?

Your maintenance efforts will significantly benefit from choosing Quadrant plastic components for the job. The outstanding properties of our materials mean considerable advantages to you:

- Reduction of total cost of operation
- Longer maintenance cycles
- Extended lifetime in use
- Impact protection
- Reliability of materials and components
- Higher load bearing capability



The protection of components and electronic devices from ballast strikes, ice and any winter conditions as well as the outstanding wear and sliding properties of Quadrant plastics considerably extend the components' lifetime in use. Downtime and costs are noticeably reduced.

Quadrant plastics are tested and certified and simplify your own local testing and approval procedures. All manufacturing processes are fully documented and traceable.



...in mono-rails



...in regional express trains



...in tank cars

The Quadrant offer includes special solutions for freight transport. To improve material flow and protect containers from corrosion we supply high quality lining materials for solid and liquid bulk materials – including a full-service package from consulting and planning to delivery of materials to the installation:

### System TIVAR<sup>®</sup> Engineering for the railway industry.

Our preferred materials:

**TIVAR<sup>®</sup> 88 | Symalit<sup>®</sup>**

Please consult us for your individual solution.



**[www.quadrantplastics.com](http://www.quadrantplastics.com)**  
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