Leadership in **Polyurethanes**

tellureRôta
TOGETHER WE MOVE


MADE IN
ITALY

POLYURETHANE COMPOUNDS

	TR	TR-Roll	TR-PowerHigh	Vulkollan®	TR ESD	TR-ROLL ESD
						
Key strengths	Reliability and duration over time	Comfort and ergonomy	High performance. low maintenance	Elasticity and resistance	Resistance and reliability in **ESD compatible environments (R <10⁹ Ohm)**	Comfort and ergonomy in **ESD compatible environments (R <10⁹ Ohm)**
Dynamic carrying capacity	●●●●○	●●●○○	●●●●●	●●●●●	●●●○○	●●●○○
Rolling resistance	●●●●○	●●●●●	●●●●●	●●●●○	●●●○○	●●●●○
Resistance at high speed	●●●○○	●●●●●	●●●●●	●●●●●	●●●○○	●●●●○
Resistance to wear and tear	●●●●○	●●●○○	●●●●●	●●●●○	●●●●○	●●●○○
Handling comfort	●●●●○	●●●●●	●●●●○	●●●●○	●●●●○	●●●○○
Capacity to overcome obstacles	●●●○○	●●●●●	●●●●○	●●●●○	●●●○○	●●●●●
Resistance to oils	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○
Resistance to alcohol	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○	●●●○○
Resistance to hydrolisis	●●○○○	●●○○○	●●●●○	●●○○○	●●○○○	●●○○○
Hardness (Shore A)	92 +/-3	78 +/-3	92 +/-3	92 +/-3	90 +/-3	75 +/-3
Resilience	56%	70%	58%	59%	56%	70%
Abrasion loss (mm³)	38 mm³	56 mm³	35 mm³	39 mm³	41 mm³	59 mm³
Tearing resistance (kN/m)	55 kN/m	28.5 kN/m	65 kN/m	65 kN/m	50 kN/m	28.5 kN/m
Coefficient of friction on a smooth steel surface	0.20	0.30	0.25	0.25	0.20	0.30
Temperature range	-20/+80 °C	-20/+70 °C	-20/+80 °C	-20/+80 °C	-20/+80 °C	-20/+70 °C

“TR” Polyurethane

Reliability and Duration

The excellent physical-mechanical features of the **"TR" polyurethane** guarantee a **high resistance to wear, to tearing and to abrasion**. It is particularly recommended for **heavy-duty applications**. The high-thickness variant enables the use on floors with obstacles too.

Dynamic carrying capacity	●●●●○
Rolling resistance	●●●●○
Resistance at high speed	●●●○○
Resistance to wear and tear	●●●●○
Handling comfort	●●●●○
Capacity to overcome obstacles	●●●○○
Resistance to oils	●●●○○
Resistance to alcohol	●●●○○
Resistance to hydrolisis	●●○○○

Information	Value	Standards
Hardness (Shore A)	92 +/- 3 Shore A	ISO7619_1
Resilience (%)	56%	ISO 4662
Abrasion loss (mm^3)	38 mm^3	ISO 4649 Method A
Tear resistance (kN/m)	55 kN/m	ISO 34_1 (Met B, Proc B)

“TR-Roll” Polyurethane

Comfort and Ergonomy

TR-Roll combines the load capacity and the peculiar resistance to wear and tearing of the “TR Polyurethane” with the typical characteristics of the elastic rubber, such as an **easy overcoming of obstacles, vibration** and **shock absorption** and **noise reduction**. Its excellent performance on **rolling resistance** enables a smoother handling and a reduced effort made by the operators. It is also recommended for towing applications.

Dynamic carrying capacity	●●●○○
Rolling resistance	●●●●●
Resistance at high speed	●●●●●
Resistance to wear and tear	●●●○○
Handling comfort	●●●●●
Capacity to overcome obstacles	●●●●●
Resistance to oils	●●●○○
Resistance to alcohol	●●●○○
Resistance to hydrolisis	●●○○○

Information	Value	Standards
Hardness (Shore A)	78 +/- 3 Shore A	ISO7619_1
Resilience (%)	70%	ISO 4662
Abrasion loss ($mm^{3)}$	56 mm^3	ISO 4649 Method A
Tear resistance (kN/m)	28.5 kN/m	ISO 34_1 (Met B, Proc B)

“TR-PowerHigh” Polyurethane

High Performance and Low Maintenance

TR-PowerHigh is the most suitable solution in case of applications with **very high loads, speed up to 12-16 km/h**, heavy duty cycle even in environments requiring resistance to hydrolysis. It is characterised by excellent rolling resistance and elasticity, **very good resistance to wear and to tear**.

Dynamic carrying capacity	●●●●●
Rolling resistance	●●●●●
Resistance at high speed	●●●●●
Resistance to wear and tear	●●●●●
Handling comfort	●●●●○
Capacity to overcome obstacles	●●●●○
Resistance to oils	●●●○○
Resistance to alcohol	●●●○○
Resistance to hydrolisis	●●●●○

Information	Value	Standards
Hardness (Shore A)	92 +/- 3 Shore A	ISO7619_1
Resilience (%)	58%	ISO 4662
Abrasion loss (mm^3)	35 mm^3	ISO 4649 Method A
Tear resistance (kN/m)	65 kN/m	ISO 34_1 (Met B, Proc B)

Vulkollan®

Elasticity and Resistance

Vulkollan®, produced under Covestro licence, has excellent features of elasticity as well as of resistance to tearing, to wear and to abrasion; therefore it is suitable for heavy loads and **heavy duty cycle applications**.

Dynamic carrying capacity	●●●●●
Rolling resistance	●●●●○
Resistance at high speed	●●●●●
Resistance to wear and tear	●●●●○
Handling comfort	●●●●○
Capacity to overcome obstacles	●●●●○
Resistance to oils	●●●○○
Resistance to alcohol	●●●○○
Resistance to hydrolisis	●●○○○

Information	Value	Standards
Hardness (Shore A)	92 +/- 3 Shore A	ISO7619_1
Resilience (%)	59%	ISO 4662
Abrasion loss (mm^3)	39 mm^3	ISO 4649 Method A
Tear resistance (kN/m)	65 kN/m	ISO 34_1 (Met B, Proc B)

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“TR ESD“ Polyurethane ⚡R

Resistance and Reliability

ESD-compatible environments (R <10^9 Ohm)

TR-ESD polyurethane allows the **dispersion of the accumulation of electrostatic charges**, and is therefore **suitable in ESD-sensitive environments** and in potentially explosive areas. It maintains the main features of “TR” polyurethane, and is recommended for use for **handling heavy loads**, also with towing applications.

Good resistance to wear and to tear.

Dynamic carrying capacity	●●●○○
Rolling resistance	●●●○○
Resistance at high speed	●●●○○
Resistance to wear and tear	●●●●○
Handling comfort	●●●●○
Capacity to overcome obstacles	●●●○○
Resistance to oils	●●●○○
Resistance to alcohol	●●●○○
Resistance to hydrolisis	●●○○○

Information	Value	Standards
Hardness (Shore A)	90 +/- 3 Shore A	ISO7619_1
Resilience (%)	56%	ISO 4662
Abrasion loss (mm^3)	41 mm^3	ISO 4649 Method A
Tear resistance (kN/m)	50 kN/m	ISO 34_1 (Met B, Proc B)

“TR-ROLL ESD“ Polyurethane

Comfort and Ergonomy

ESD-compatible environments (R <10^9 Ohm)

TR-Roll ESD polyurethane has been developed for **dispersing the accumulation of electrostatic charges**, in environments where these can cause problems to equipment, materials or put at risk the safety of the place, **whilst maintaining the excellent physical/chemical features of “TR-Roll” elastic polyurethane**. The good rolling resistance allows an **easy handling of high loads**; suitable for damping shocks and vibrations and for easy overcoming obstacles.

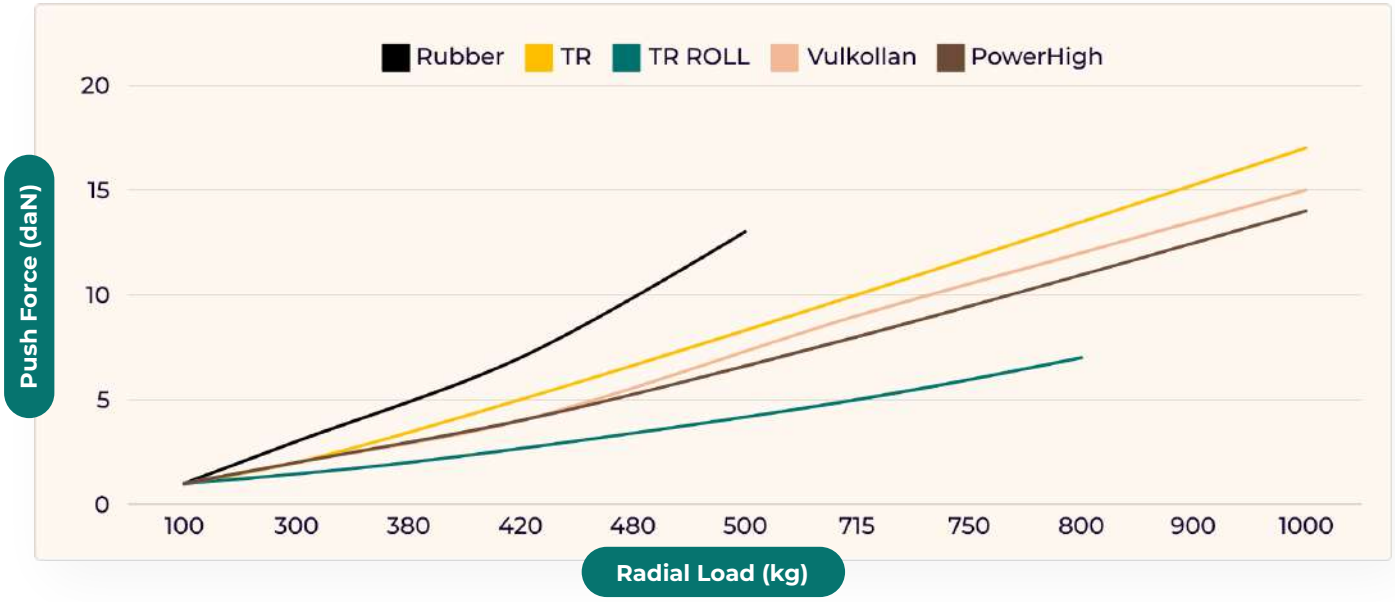
Dynamic carrying capacity	●●●○○
Rolling resistance	●●●●○
Resistance at high speed	●●●●○
Resistance to wear and tear	●●●○○
Handling comfort	●●●○○
Capacity to overcome obstacles	●●●●●
Resistance to oils	●●●○○
Resistance to alcohol	●●●○○
Resistance to hydrolisis	●●○○○

Information	Value	Standards
Hardness (Shore A)	90 +/- 3 Shore A	ISO7619_1
Resilience (%)	56%	ISO 4662
Abrasion loss (mm^3)	41 mm^3	ISO 4649 Method A
Tear resistance (kN/m)	50 kN/m	ISO 34_1 (Met B, Proc B)

COMPOUNDS

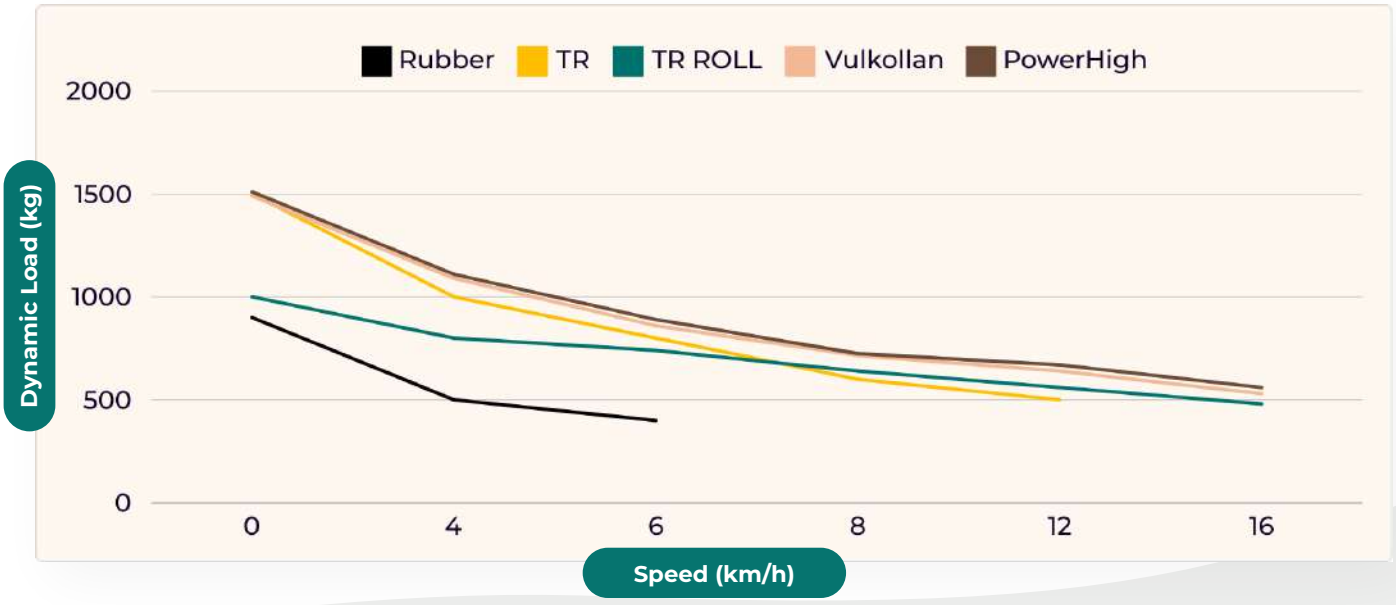
Rolling resistance comparison

This chart shows on the y-axis the force needed to push or tow a single wheel with the application of the load indicated on the x-axis.
The model chosen for testing is a wheel diam. 200x50 mm with cast iron centre; tests are performed at the constant speed of 4 km/h on smooth steel flooring.



Dynamic load performance related to speed

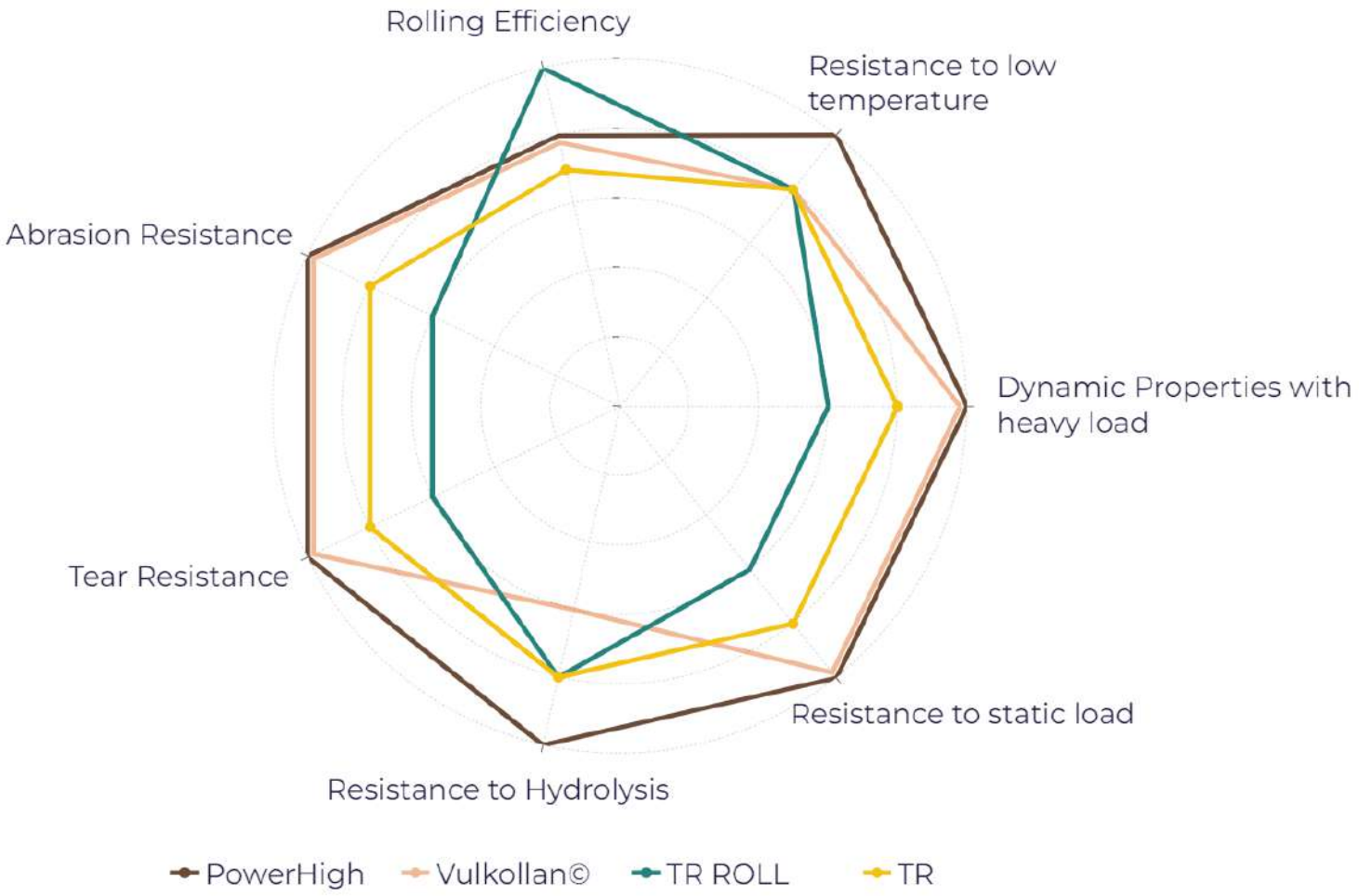
This chart shows on the y-axis the carrying capacity depending on the speed of use (shown on the x-axis).
The model chosen for testing is a wheel diam. 200x50 mm with cast iron centre.



COMPARISON

Tellure Rôta polyurethanes features comparison

This chart shows an overview of Tellure Rôta polyurethanes performance on different specific features (1 = worst performance; 5 = best performance)



Tellure Rôta
Polyurethane Production

The automatic production process, designed by Tellure Rôta, ensures complete control over all production stages: preparation of the wheel and roller cores, preparation of the compounds, casting and curing. **Highly automated production lines** that employs the latest technology guarantee consistently **high quality standards** and the **maximum flexibility** in terms of volumes and lead times.

Customized wheels (non-standard dimensions or blends) are produced on semi-automatic lines where skilled operators ensure exact compliance with each detail requested by customers..

Tellure Rôta polyurethane compounds are developed and tested at **TRLab - Test & Research Laboratory**.

TRLab
TEST & RESEARCH

Why choosing Tellure Rôta?

Advice and **support** in developing the best solution for the customer and meeting specific needs.

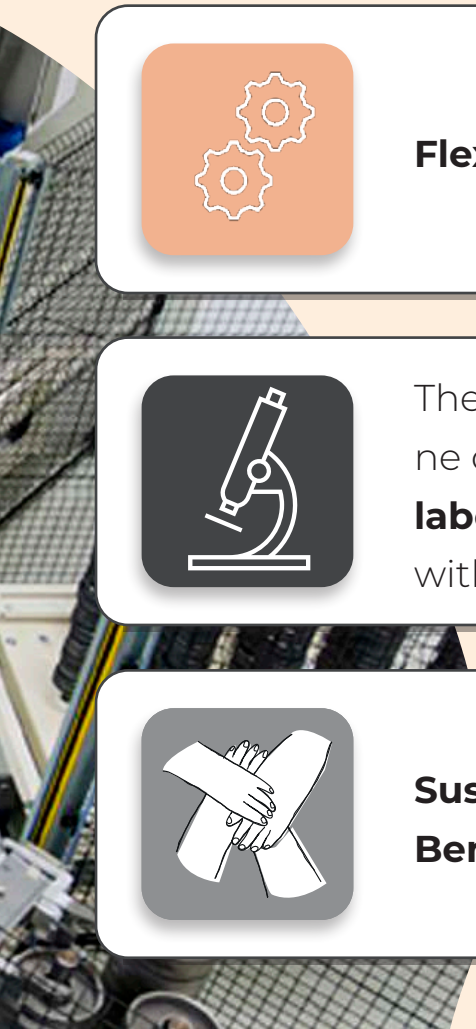
The **production of polyurethane wheels** is the company's **core business**.

Automated processes guarantee consistent **quality** and product **traceability**.

Flexible production (big and small batches).

The production, development and testing of polyurethane compounds have been carried out in the **in-house laboratory** for many years. The laboratory collabotares with **prestigious universities** on a regular basis.

Sustainable since the **beginning of our story, Benefit Corporation** since **2023**



POLYURETHANE

Forklift

Transpallet

AGV

APPLICATIONS

Automotive

ESD Enviroments

Trolleys

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