



ElectroForce® Testing Solutions For **Tire & Rubber**

Every instrument is like having several test systems built into a single test frame.

Welcome to **Above & Beyond™** Support
Industry-leading assistance from applications specialists.

Powered by **ElectroForce®** Technology



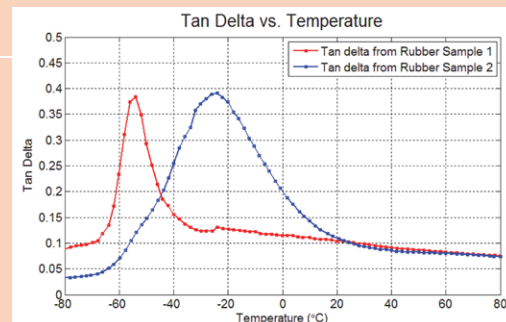
Your success. Our mission.™



TA ElectroForce provides highly versatile testing instruments to support the most demanding tire and rubber research and product development. The extensive capabilities available in each ElectroForce® rubber and tire test instrument is like having several test systems built into a single test frame.

DMA

- E^* , E' , E'' , $\tan \delta$
- Feed modeling predictions
 - Rolling resistance
 - Wet traction
- Time-temperature superposition



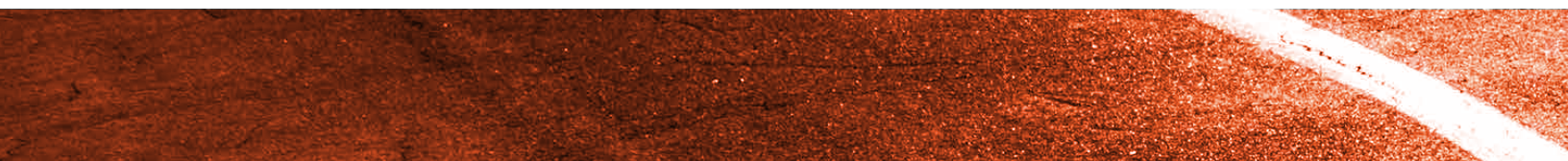
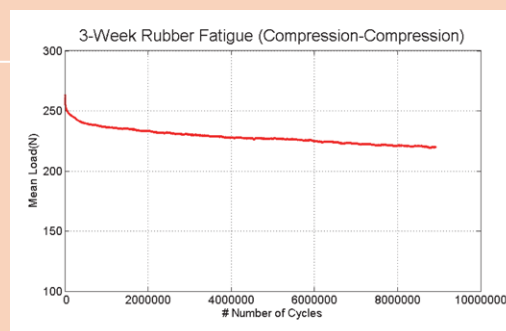
Blowout/Burst

- Dynamic fatigue
- Speed rating (prevent heat build-up and fatigue)
- ASTM D623



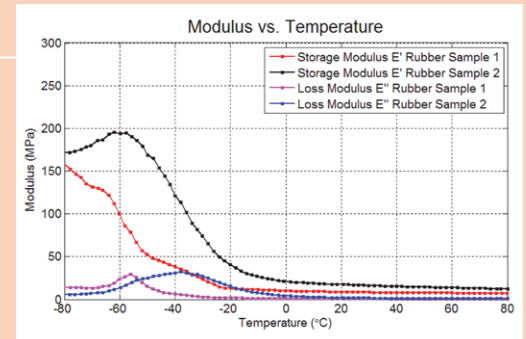
Fatigue

- Dynamic stiffness/modulus degradation
- Crack growth modeling (tensile - ASTM D4482)
 - Relaxation compensation to account for specimen creep
 - Real-time strain control for elongating specimens
 - Pulse waveform
- Speed rating characterization
- Flex (bend) testing (de Mattia - ASTM D430)
- Crack growth (bend) testing (de Mattia - ASTM D813)



Environmental Control

- Heating/cooling
- Humidity and temperature control
 - Portable version of system may be placed inside temperature-humidity conditioner

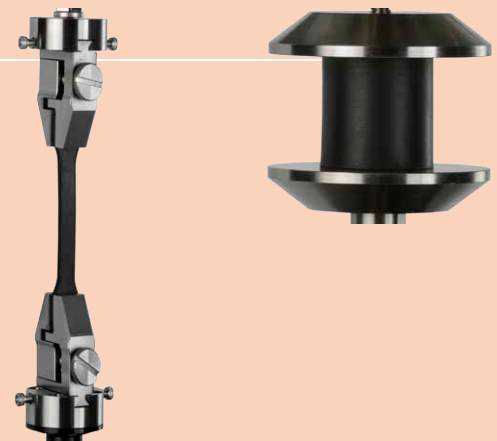


General

- Tensile (ASTM D412; ISO 37)
- Compression (ASTM D395, D575; ISO 815)
- Creep (ISO 8013, ISO 2285)
- Stress relaxation (ASTM D6147; ISO 3384; ISO 2285)

Advanced/Other

- Tire cord testing (ASTM D2285)
- Fast strain rate for investigating strain-induced crystallization (SIC)
 - Dual motor specimen centering for in-situ monitoring
- Multi-specimen testing
- User-definable test protocols with logic and conditional testing
- Configurations may include bi-axial, multi-axial, torsion, etc.



ElectroForce® has a wide range of test instruments to ensure the best fit for your applications. Find out more at electroforce.tainstruments.com

3100



3200



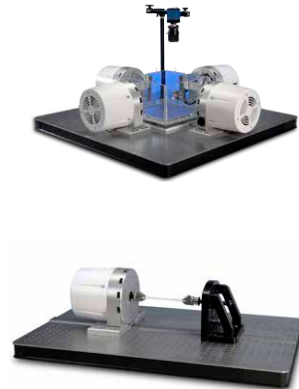
3330



3500



TestBench



22 N

5 mm (± 2.5 mm)

100 Hz max

75 Hz DMA

225 N or 450 N

13 mm (± 6.5 mm)

300 Hz max

200 Hz DMA

-150° to +315° C*

3,000 N

25 mm (± 12.5 mm)

100 Hz max

75 Hz DMA

-150° to +350° C*

7.5 kN or 15 kN

50 mm (± 25 mm)

100 Hz max

40 Hz DMA

-150° to +350° C*

200 N or 3 kN

13 mm or 25 mm

100 Hz max

*Indicates temperature range of standard temperature chamber. Additional temperature ranges are available. Specifications subject to change.

The ElectroForce friction-free moving-magnet linear motor provides high performance across a wide force and displacement range, and offers the only 10-year warranty in the industry. With the capability to perform DMA, creep and stress-relaxation testing, monotonic tensile and compression testing, high-cycle fatigue and durability testing, multi-sample and multi-axis testing, and custom materials and component testing, ElectroForce test instruments may be the most versatile instruments in the lab.

Ask your TA ElectroForce representative for technical information on ElectroForce test instruments and software.

Testing Solutions for
Engineered Materials · Medical Devices · Biomaterials



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