

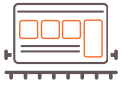
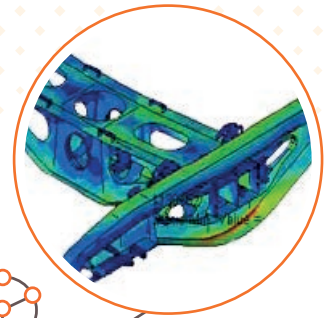


# RAILWAY

Your Testing Center and  
Certification Partner



# Structures, Components & Materials Testing



## ASSEMBLIES

Evaluation of strength and safety through stress, deformation and stability testing for car bodies and substructure structures.

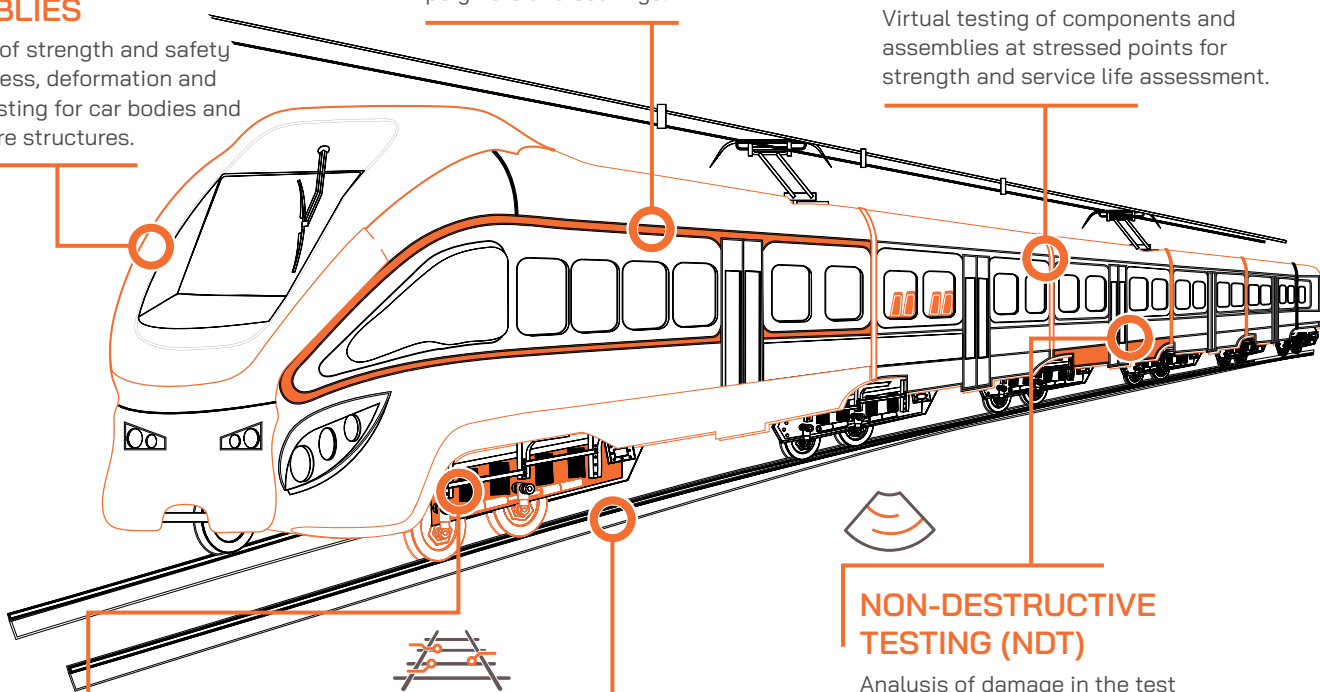
## MATERIALS

Characterization, R&D and quality assurance for metals, composites, polymers and coatings.



## SIMULATION & STRENGTH ASSESSMENT

Virtual testing of components and assemblies at stressed points for strength and service life assessment.



## NON-DESTRUCTIVE TESTING (NDT)

Analysis of damage in the test phase and in real use. When and where damage arises. Cracks or material damage are made visible.

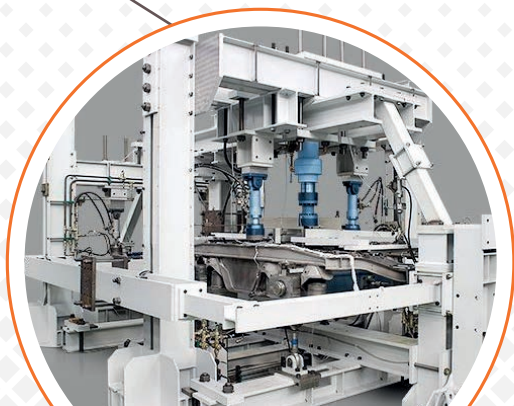


## STRUCTURES & COMPONENTS

Product and operational safety by means of endurance and fatigue tests for bogie frames, axle bearing housings, vehicle components, seats ...

## MOBILE MEASUREMENT, STRESS MEASUREMENT

Loading in real use for approval tests, measurement runs, calculation and simulation, structural optimization in problematic cases and structural monitoring.



## Environmental Testing



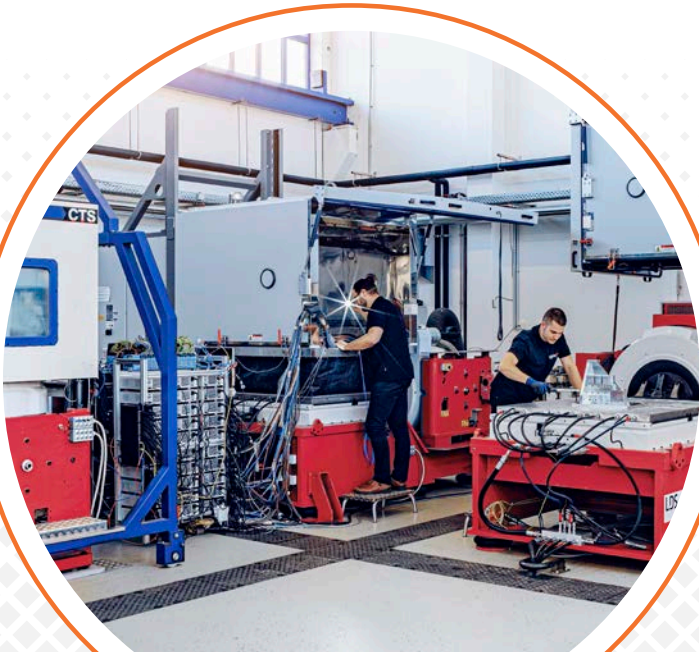
### Fire Testing

- Global offer to material and structural certification as well R&D: flammability, heat resistance, flame spread, fire behaviour, heat release, smoke gas development and smoke gas toxicity
- Fire simulation and full-scale fire testing in tunnels (Size 1:1) under real conditions
- Testing according to EN 45545-2



### Vibration and shock test

- Multi-axial vibration test optionally superimposed with climate
- Functional tests before, during and after vibration tests



### Climate and IP protection test

- Temperature-humidity test
- Temperature shock
- IP protection in dust chambers, with salt spray, in immersion basin, IP water protection



### Electrical testing

- Function test
- Switch-on and switch-off capacity
- Short-circuit tests, heating test and insulation test



### Electromagnetic compatibility (EMC)

- Testing and certifying electrical and electronic products and devices

## ABOUT US

As a globally recognised and accredited testing partner, we support manufacturers and suppliers in the development process as well as transport companies in damage analysis and product optimization.

From bogies and complete train carriages to interior electronics, seats and partitions, Applus+ Laboratories tests everything from materials to complete structures and components to validate our customers' products and prototypes.

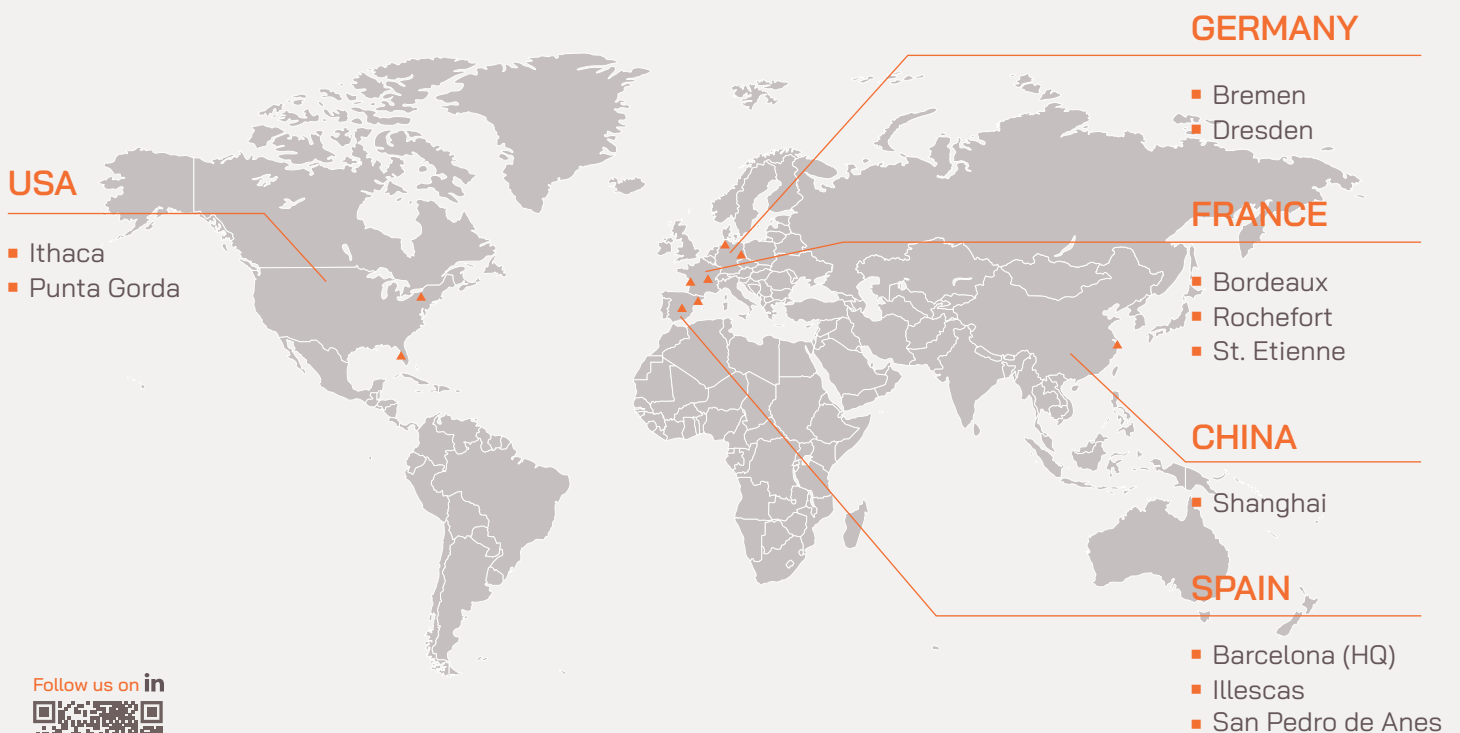
Thanks to our full scope of accreditations, cross disciplinary expertise and state-of-the-art facilities, we offer support throughout the entire product development cycle so you can optimize your products and prove compliance with regulations.

As a partner to industry, business and research, we contribute to making the products of tomorrow reliable, efficient and safe.

## FULLY ACCREDITED & CERTIFIED LABS

- ✓ Accredited acc. to ISO/IEC 17025
- ✓ Certified acc. to AS/EN 9100
- ✓ Test methods: EN 12663-1, EN 13749, EN 12082
- ✓ Certifer\*\*\* for fire test lab
- ✓ Qualified by major railway companies

## OUR GLOBAL NETWORK OF LABORATORIES



Follow us on **in**



## CONTACT YOUR GLOBAL TESTING PARTNER

[info@appluslaboratories.com](mailto:info@appluslaboratories.com) | [www.appluslaboratories.com](http://www.appluslaboratories.com)