



Gandini Technology Center

Applications – Test types – Scope
Facilities – Quality – Advantages

June, 2021

Applications

- Vehicle emissions certification for Brazil (PROCONVE) and Mercosur
- COP – Conformity of Production
- Emissions assessment for future legislations and or different markets
- Development
 - Systems calibration
 - Parts approval
 - Technologies comparisons
 - Other development activities that require emission tests and/or dynamometer hours
- Support for AMA, RDE and road tests
- All tests can be run for OTTO, DIESEL, HYBRID and ELECTRIC vehicles

Test types






- Exhaust gas and evaporative emissions
- Sampling and post test analysis of
 - Aldehydes
 - Unburnt ethanol
 - Particulate matter (soot) with gravimetric and particulate counter
- Opacity
- Energy efficiency and fuel consumption (combustion and hybrid/electric)
- All tests can be run for OTTO, DIESEL, HYBRID and ELECTRIC vehicles
- All NBR tests CETESB / IBAMA approved

Tests – detailed scope

TEST TYPE	STANDARD
EPA 75 + CO Idle (Otto or Diesel)	NBR6601
Particulate measurement during EPA75	
Aldehydes measurement during EPA75	NBR12026
Unburnt ethanol measurement during EPA75	NBR15598
Opacity	NBR13037
Evaporatives determination (SHED)	NBR11481
Evaporatives determination (SHED) 48 hours	CFR/New NBR
Fuel consumption (HFET)	NBR7024
Particulate measurement with particulate counter during EPA75	NA
UDDS HYBRID det SOC and NEC	NBR16567
HW HYBRID det SOC and NEC	
Type I – Emissions Otto or Diesel	UN ECE R-83
Type II - CO Idle	
Type III – Carter emissions	
Type IV - Evaporatives determination (SHED) 24 hours	
Multi cycle test (MCT) – Electric Vehicles	SAE J1634

Tests – Compliance with Proconve L6 and L7

Availability schedule for equipment/resources

- L6
 - All tests from current scope – 100% AVAILABLE 
- L7
 - SHED 48hs – AVAILABLE 
 - ORVR – AVAILABLE 
 - NH3 – December 2021 
 - RDE – AVAILABLE via partnership with AVL 

Facilities – Vehicle test cell and SHED

- Dynamometer
 - AVL RoadSimm 48 inches
 - AWD / 4X4 capable – axis distance adjustable from 2m to 4,6m
- SHED
 - NAPRO Variable temperature SHED for evaporative measurement according to Brazilian, Euro and North American standards
- Analysis systems
 - AVL AMA series for Otto and Diesel fueled vehicles
 - Embedded data acquisition Hioki for hybrid vehicles test



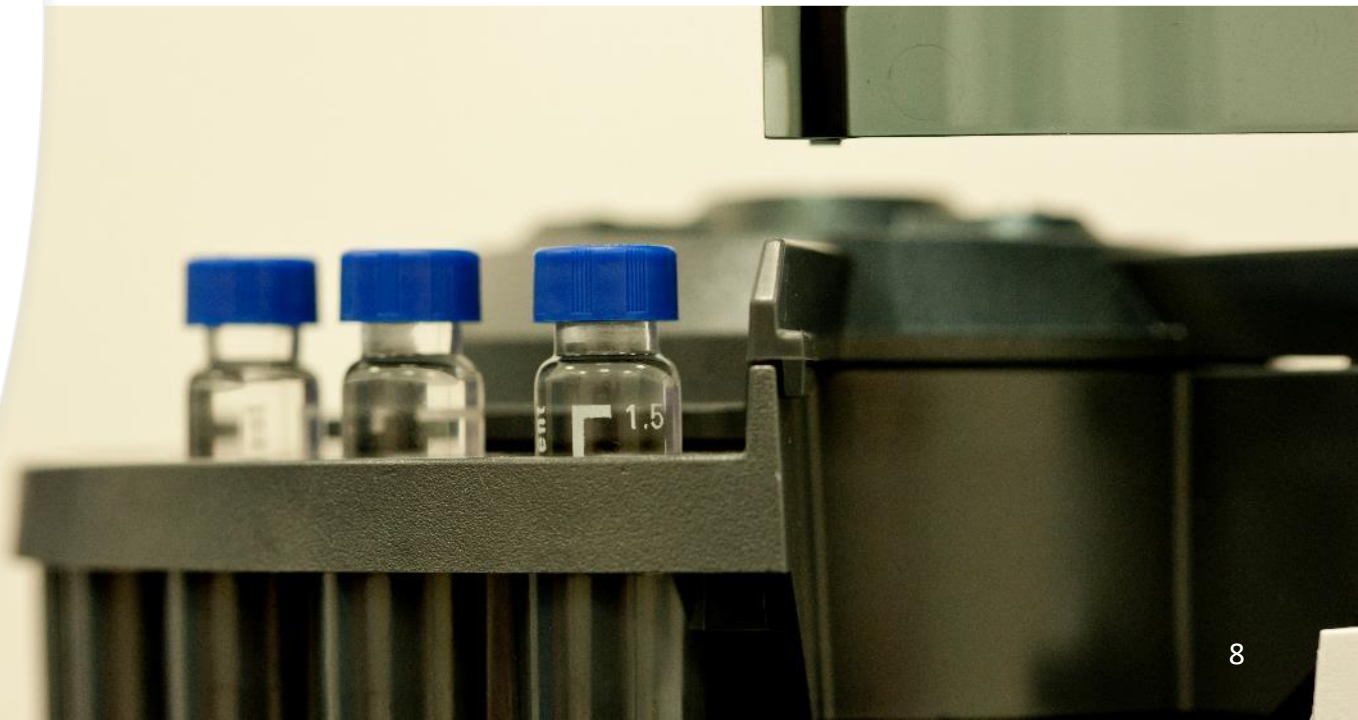
Facilities – Soak room and Garage

- Fully equipped garage for vehicle preparation and instrumentation
- Room floor
 - Soak: 400m² (approx. 20 to 30 vehicles)
 - Garage: 700m²
- Positive pressure on Soak area avoiding contamination
- Electric charger for charging up to 2 vehicles simultaneously



Facilities – Chemical Laboratory

- Agilent liquid and gas chromatographs for aldehydes and unburnt ethanol analysis
- EPA compliant chamber for particulate measurement (gravimetric)
- Mettler scales down to 0,1mg for particulate measurement



Facilities – infrastructure

- Power support (generator and no-break systems for all analytic equipment)
- Fuel area for drums storage, vehicle refueling and fuel blending
- Green approach
 - Modular air conditioning systems
 - Natural light and 100% LED
 - Reutilization of condensed water on toilets and garden
 - Intelligent compressor and fan coils



Quality

- All tests assessed and validated by IBAMA/CETESB
- Quality management system in place based on ISO IEC 17025
- International accreditation process already submitted to INMETRO
- All equipment calibrated with RBC laboratories (Brazilian Calibration Network)
- Several interlab correlations performed with excellent results, including INMETRO Proficiency Tests Rounds



Advantages

- 30-minute drive from Campinas – easy access from main roads (SP75 and others)
- Customer-oriented structure designed for maximum reliability and productivity
- Agile structure, no unwanted bureaucracy
- Offices & support areas designed for providing the best experience to the customer. Fast wi-fi, dedicated desks, cafeteria and more
- Digital access control aiming confidentiality and security



LOCATION

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