



# Hydro-Québec testing laboratories

The solution for your mechanical and environmental testing needs

Hydro-Québec operates specialized facilities for conducting mechanical and environmental tests to meet industry needs. These facilities include climate chambers used to test various types of equipment under a wide range of conditions.



## Services offered: Environmental tests

- > Low- and high-temperature tests
- > Thermal cycling tests
- > Thermal cycling and controlled humidity tests
- > Thermal shock tests
- > Tests under rain, freezing rain, ice and humidity
- > Accelerated aging tests
- > Salt spray tests
- > Climatic tests with dynamometer
- > Water immersion tests
- > Solar radiation exposure tests
- > Mechanical and electrical tests combined with environmental tests (e.g., switch opening under ice loading)

## Test chamber specifications

Chamber N°	1	2	6 (Thermotron)	8 ("César")	10 (Envirotronic)	12 (VA-1 Saline)
Width (m)	4.8	3.3	0.95	2.1	1.2	3.1
Depth (m)	6.5	7.5	0.95	3.4	1.2	2.4
Height (m)	8.3	2.6	0.95	1.7	1.2	1.9
Temperature (°C)	-55 to +65	-65 to +80	-30 to +93	-120 to +20	-73 to +180	+20 to +40
Other	Test voltage at up to 72 kV					Injection: 2ml/h for 6h at 100% humidity



### Services offered: Mechanical tests

- > Tensile tests
- > Compression tests
- > Bending tests
- > Torsion tests
- > Rupture tests
- > Fatigue tests
- > Creep tests
- > Electromechanical tests
- > Impact tests
- > Vibration tests

### Test bench specifications

Type of test	Static tests	Dynamic tests	Maximum capacity	Maximum length of specimen
Electromechanical	√	√	450 kN and 100 kV	3 m
Tensile / Creep	√	–	800 kN	3 m
Tensile	√	√	3,600 kN	30 m
Tensile / Compression	√	√	500 kN	1.5 m
Tensile / Aeolian vibration / Pulley passage / Creep	√	√	800 kN	60 m
Compression	√	√	3,500 kN	0.5 m
Bending	√	√	100 kN	7 m
Torsion	√	√	2.3 kN-m at ±50°	3 m
Vibration	–	√	30 kN	–

### Equipment tested

- > Various types of industrial equipment
- > Transmission and distribution switchgear (circuit breakers, transformers, switches, busways, surge arresters, etc.)
- > Transmission and distribution line hardware (conductors, insulators, optical ground wires, bushings, sleeves, clamps, sockets, grounding cables, control and communications boxes, etc.)
- > Structural components (towers, turrets, beams, plates, anchors, latticework, etc.)
- > Equipment for transportation electrification (vehicles, charging stations, batteries, etc.)

- High-voltage testing
- Electrical testing
- **Mechanical and environmental testing**
- Underground cable testing
- Testing on a full-scale overhead line
- Calibration and repair services

### To reach us

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 Comprehensive solutions to meet your specific needs