



Climatic Testing Facility

The Climatic Testing Facility evaluates the performance of rail vehicles, equipment and components under severe climatic conditions (-51°C to +55°C). The NRC Climatic Testing Facility is the largest in Canada and offers both railway and road access. The facility can accommodate the largest and heaviest single-unit railway vehicles, prototypes and components.

Features

- › Full range of North American climate simulations (-51°C to +55°C);
- › Full humidity control;
- › Snow, rain, fog, freezing rain, ice, freezing fog;
- › Full instrumentation and data facilities;
- › Chamber divisible into smaller chambers for economical testing;
- › Time shifting of weather conditions permits accurate and reproducible pre-testing for the next season.

Applications and benefits

- › Climatic evaluation of full-size rail vehicles and components to improve performance;
- › Performance evaluation for compliance to specification of heating, ventilating, and air-conditioning systems;
- › Miscellaneous evaluations: engine cold-starting aids; problems created by snow; icing, anti-icing and de-icing to improve product acceptance and reliability.

Specifications

- › **Chamber size:** 30m (100') long x 6m (20') wide x 6m (20') high;
- › **Rail access doorway:** 4.6m (15') wide x 6.0m (19'-10") high;
- › **Temperature range:** -51°C to +55°C (-60°F to +131°F);
- › **Electrical:** up to 2000 VAC and 2000 VDC;
- › **Services:** compressed air, refrigerated fresh air, water, steam, engine exhaust extraction, monitoring of hazardous gases;
- › **Data acquisition:** Up to 512 channels.

Recent/current uses

- › HVAC compliance testing of rail passenger cars;
- › Thermal performance of insulated rail cars;
- › Railway track switch hot-air blower performance;
- › Signal circuit shunt performance of railroad wheelsets in snow and ice;

- › Diesel fuel low-temperature filterability;
- › Radiator cooling fan performance evaluation on a locomotive at full load for export to the Middle East.



CONTACT

Jason Pierosara
Client Relationship Leader
Tel.: 613-998-9378
Jason.Pierosara@nrc-cnrc.gc.ca

www.nrc-cnrc.gc.ca/eng/rd/ast

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