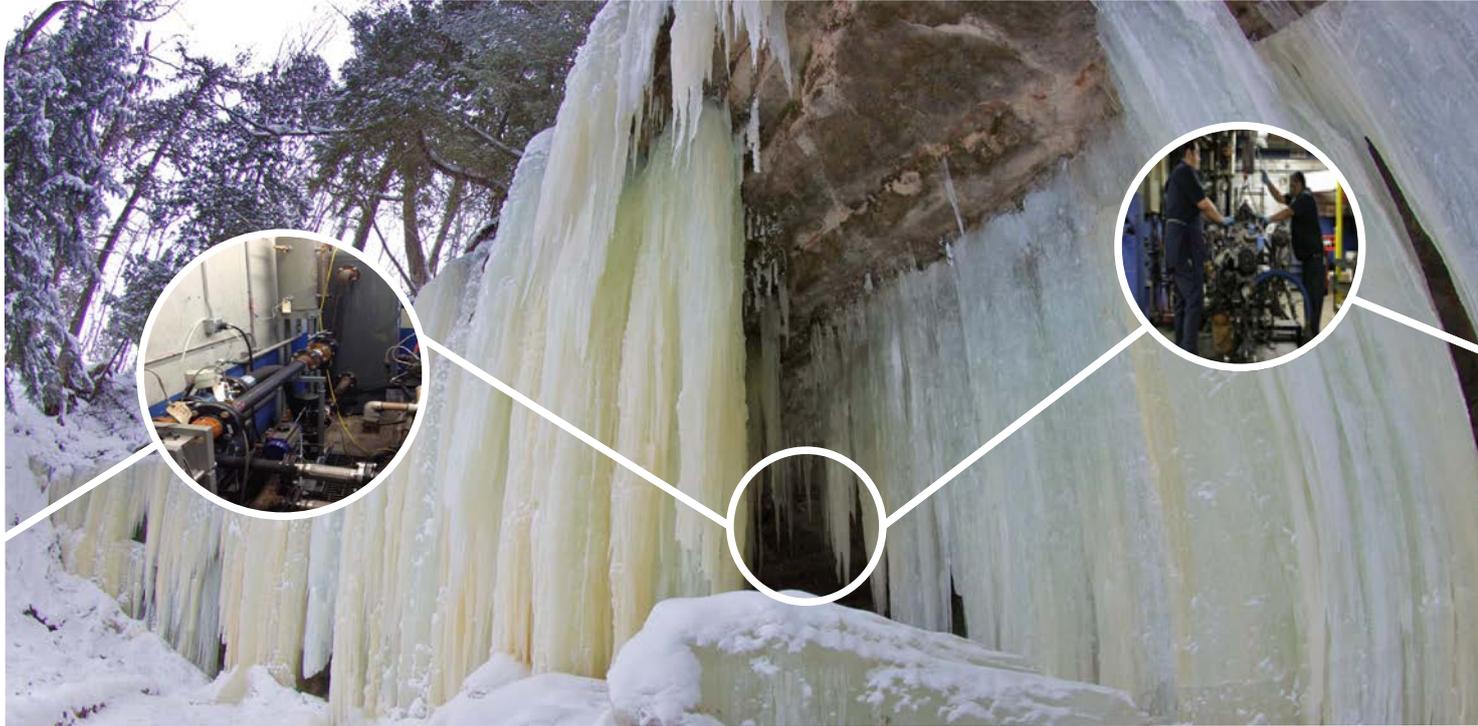


Chilled Fluids Engine Testing



Valued Quality. Delivered.



Engine (and engine component) durability testing typically involves operating the engine at “standard” conditions; however, there are also a variety of non-standard condition test protocols. To keep pace with these requirements, Intertek has the capability to artificially cool various engine fluids (primarily coolant and oil) for testing against most “thermal cycle” standards.

Our system is capable of generating fluid temperatures as low as 25 DegF with storage for hundreds of gallons of coolant allowing thermal gradients in excess of 10 DegF/second. The system incorporates several modular components which can be interchanged based on the test program. In combination with our highly flexible test cell data acquisition and control system as well as dynamometers ranging from 50 to 1500 hp – Intertek can cover a wide range of specialized testing requirements.

Program Details:

- Minimum working fluid temperature of 25 DegF (-4 DegC) with flow up to 130 GPM
- Chilled system working fluid volume of 600 gallons
- 200 gallon coolant tank within the test cell to support rapid system flushing
- Capable of supporting thermal testing in two test cells
- Coolant temperature ramp rates of 10 DegF/second
- Suitable for rapid cool-down of coolant, oil and air
- Custom test cycles including thermal shock and artificially low coolant/oil settings
- Available fuels include Gasoline, Diesel and Compressed Natural Gas (CNG)
- Modular chiller system capacity of 110 tons of more as needed
- Engine coolant system also capable of full coolant by-pass for rapid re-heat of coolant / engine
- Air blending system allows for rapid changes in charge air cooler outlet temperatures in the range of 100 to 180 DegF

Quick Intertek Facts

- Intertek test experts are able to design, develop and fabricate specialty, one-of-a-kind test stands
- Elevation testing is available with emissions up to 900 hp
- We provide a variety of testing available for both standard and accelerated engine aging studies



Valued Quality. Delivered.

Our Solution

Our customers include many of the automotive and heavy duty engine manufacturers, along with their suppliers. Intertek Automotive Research has expertise in testing a variety of engine configurations ranging from a single cylinder to multi-cylinder research, prototype and production engines. A variety of fuels are used, including gasoline/gasoline blends, diesel, and alternative fuels.

Engines, and engine components, are constantly evolving to meet the governmental regulations and consumer demands. They are becoming more sophisticated and developed at a greater pace and lower cost than ever before. Our facilities in San Antonio allow our customers to meet these challenges.

Engine Test Facilities:

- 22 engine development test cells
- Compressed Natural Gas up to 250 psi

- Dynamometers down to 5 hp
- Transient dynamometers up to 900 hp
- Eddy current dynamometers up to 1200 hp
- EPA Part 1065 CVS Emissions
- Combustion air control (temp & humidity)
- Exhaust back pressure control
- Chilled fluids system for thermal shock testing
- Altitude simulation up to 15,000 feet
- Oil consumption measurement (manual and automatic)
- Engine Fluids (fuel, coolant and oil) temperature control
- Cooling water is available in each cell at a mean temperature of 27C (80F)
- Chilled water is available in each cell at a temperature of 10C (50F)
- Automated data acquisition and control (various systems and speeds)
- Flight recorder monitoring
- OEM diagnostic equipment utilized
- Various test fuels used (i.e. gasoline/ gasoline blends, diesel, alt fuels)
- Hybrid-electric powertrain test facility



Testing Experience:

- Complete engine durability
- Emissions certification
- OBD functionality
- Diesel aftertreatment
- CNG engine endurance
- Combustion performance
- Fuel economy studies
- Engine power uprate
- Oil consumption evaluations
- Aftertreatment endurance
- Engine lubricant development
- Marine engine programs
- Engine deposit evaluations
- Fuel, lubricant evaluations
- Octane requirement increase evaluations
- Crankcase ventilation evaluations
- Emissions
- Failure analysis
- Test development
- OEM specific tests
- Industry standard tests
- Test Cycles (Industry specified, proprietary or custom designed cycles)
- Test facility evaluations

The Intertek Advantage

Intertek Automotive Research is one of the largest independent automotive testing organizations in the world and has provided quality services since 1953 to the transportation and petrochemical industries. Based in San Antonio, Texas, our customer-focused staff has a proved record of being responsive to our client's needs and special testing requirements. Our customer base is worldwide and consists of the automotive OEMs, the heavy-duty engine OEMs, the OEM suppliers, and the fuel and lubricant companies.

Intertek is a leading quality solutions provider to industries worldwide. From auditing and inspection, to testing, training, advisory, quality assurance and certification, Intertek adds value for its customers by helping improve the quality and safety of their products, assets and processes. With a network of more than 1,000 laboratories and offices and over 35,000 plus people in more than 100 countries, Intertek supports companies' success in the global marketplace, by helping customers to meet end users' expectations for safety, sustainability, performance, integrity and desirability in virtually any market worldwide.

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