

# Hose Testing

ARDL's hose testing laboratory is capable of thermally cycling, vibrating, impulsing and bursting polymeric hoses while circulating a variety of service fluids through them. We can do everything from physically testing your hose to developing new hose compounds to meet specifications and ensure quality products with consistent performance.

## High Pressure Hose Burst Testing

ARDL can test the burst pressure of your hose, up to 44,000 psi, at ambient fluid temperatures to ensure desired performance. The air-driven SC plunger pump can test samples with a variety of fluid types.

## High Pressure Hose Impulse Testing

Impulse pressure on polymeric hoses continues to increase as field applications become ever more demanding. ARDL can build unique test stands based on your pressure, temperature and fluid requirements. Please contact us for more information. Common test fluids include EG solutions, automatic transmission fluids and water.

## Pressure Vibration Thermal Testing

Pressure vibration thermal testing simulates the automobile engine environment, is wave form programmable, can create vibrations measuring between 0 and 3,600 rpm at 9 G. ARDL is capable of testing up to 6 samples concurrently at chamber temperatures ranging from -40°F to 350°F and fluid temperatures varying from ambient to 300°F depending on fluid type. The equipment's 120 gpm pump can handle flow rates from 0 to 20 gpm per sample. ARDL's equipment also features fluid pressures up to 150 psi with a burst circuit up to 1,500 psi.



**Rubber. Plastic. Latex.**

# Belt Testing

You're in good hands at ARDL when you come for automotive PK-V ribbed belt evaluation. ARDL is capable of testing belts by means of thermal cycling, start-and-stop sequencing and variable speed tests. Custom test stand development, compound development and compound analysis are also available to help ensure your belts will perform at or above expectations.

## SAE J2432: Performance Testing of Belts

The purpose of this standard is to provide methods to evaluate the performance and quality of belt construction. In addition to dynamic testing on MTS load frames, ARDL has test stands available for the following:

- **Section 4**  
High Temperature Constant Tension Testing
- **Section 5**  
Hot & Cold Cycling Testing
- **Section 7**  
High Temperature Flex Testing and Low Temperature Cycling Testing

## SAE 5-Pulley Flex Testing

*Test Flex Durability of Material Under High-Temperature, High-Speed Conditions*

ARDL's 5-pulley setup offers constant tension at 3,900 rpm. Temperatures increase from 212°F to 239°F in 9°F intervals over a period of 200 hours. The belt weight and length change are measured every 50 hours at the end of each temperature interval.

## SAE 4-Pulley Hot & Cold Cycling Testing

This 4-pulley setup uses a Thermotron Chamber capable of temperatures ranging from -200°F to 350°F and allows for hot or cold start-and-stop sequencing. The constant tensioning fixture runs off of a 3 HP (6,000 rpm) Baldor Drive Unit. Cold cycling is performed at -43°C with 9 intermittent start-and-stop cycles for a total test time of 1 hr, 10 min and 25 sec. Hot cycling is performed at 121°C with a constant rpm for 48 hrs.

## Low Temperature Testing

ARDL's low temperature test setup utilizes a Thermotron Chamber with a constant tensioning fixture capable of start-and-stop sequencing down to -60°F. Belts are tested at a driver speed of 1,000 ± 100 rpm with a constant belt tension of 225 pounds. The chamber starts at -31°F and then drops in increments of 5°F resulting in a final temperature of -58°F.

Low temperature belt testing begins by soaking a belt for 8 hours prior to the start of the test. The belt is then cycled from 0-1,000 rpm in one second and held at 1,000 rpm for nine seconds. Each belt is cycled 100 times. If there are no visible defects after 100 cycles, the belt is soaked for 30 minutes and tested at a lower temperature.

## Belt Length Measuring

ARDL's belt length measuring fixture with variable measuring force can gauge a variety of initial belt lengths.

