

# Wiper Blade Testing

## For Engineers & Manufacturers of Wiper Blades

Consumers have higher levels of confidence in products backed up with independent test lab results. In addition to the following standardized tests, ARDL also offers many additional wiper blade services including testing to custom specifications. ARDL's wealth of experience, expertise and resources sets it apart as your single-source windshield wiper blade testing laboratory.

### Coefficient of Friction

The frictional coefficients obtained are used to predict wear, chatter, squeal and energy consumption, as well as to compare various surface treatments.

### Durability Testing

Durability testing to 1,500,000 cycles helps define the life prediction of your wiper blade, your wiper blade's wipe quality, and your super structure.

### Hinge Testing

Two of the most common problems with wiper blades are squealing and chattering of the blade in the flexed position. ARDL provides Hinge Flex Force testing which measures the elastic modulus of the wiper blade hinge.

### Initial Wipe Grade

To test the initial wipe grade, wiper blades are tested on a specially constructed wiper test buck. A new glass windshield is used and is painted black on the inside to help enhance the viewing of any surface defects caused by a poor performing wiper blade.

### Mini DeMattia Testing

The Mini DeMattia flex-life test determines the durability of a wiper blade and can be used to measure the change in durability as a function of age. A major benefit of ARDL's newly developed procedure is the ability to perform the traditional DeMattia test on scaled down samples as thin as 0.020" that are prepared from new or aged field samples.

### Ozone Testing

Ozone testing is done not only to prove a product passes ozone standards, but to provide a time line of rubber deterioration and determine if premature rubber cracking will occur.



Windshield Wiper Blade Test Bucks

### Did You Know?

ARDL can supply any make or model test vehicle for your wiper blades.

# Wiper Blade Testing (cont.)

## Permanent Set Testing

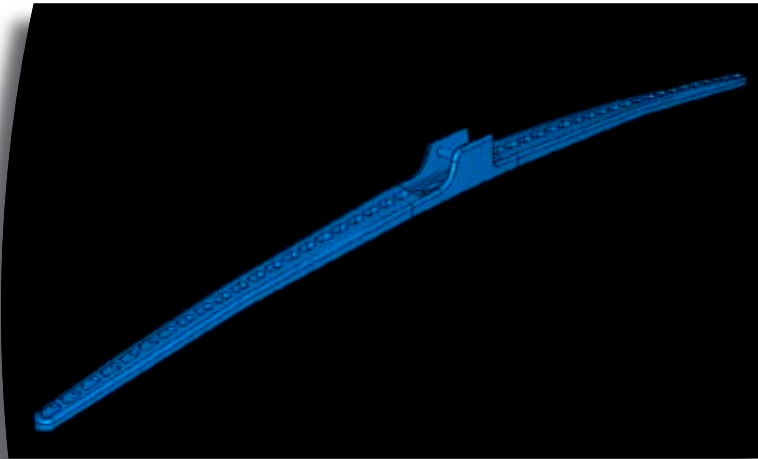
Permanent set is the first test a manufactured wiper blade must pass and is the most critical. When sitting on a windshield for an extended period of time, wiper blades can form a permanent set. Wiper blades must have a low permanent set to guarantee proper blade flipping over the life of the blade.

## Salt Spray Testing

Salt spray testing is an advanced corrosion test that evaluates the durability of coatings on super structures, fastener/clip integrity, paint and rubber integrity.

## Super Structure Testing

Complete wiper blade super structures can be tested at temperatures from -30°F to 130°F. ARDL's super structure testing can include simulated snow and ice slap testing, specular gloss measuring on surfaces and continuous pressure pattern testing.



Computer Generated 3D FEA Design Model

## 3D FEA Design

ARDL is experienced in the design and analysis of wiper blade structures for optimum distribution of wiping pressure on the windshield surface. ARDL uses state-of-the-art experimental and computational mechanics tools to evaluate the best designs for our Tier 1 and OEM customers. Computerized product design and development are used to aid in decision making prior to manufacturing.

ARDL can test to your custom specifications or to the following:

### SAE J903

#### *Passenger Car Windshield Wiper System*

- Wiper System Durability & Frequency Test
- Wiper System Stall Test
- Wiper System Temperature Operation Capability
  - Hot: 130°F
  - Cold: -30°F
- Wind Lift 0-100 mph
- Ozone Testing
- Chemical Resistance

### SAE J198

#### *Trucks, Busses and Multipurpose Vehicles*

- Wiper System Durability & Frequency Test
- Wiper System Stall Test
- Wiper System Temperature Operation Capability
- Ozone Testing

