THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

RELIABLE ANALYSIS INC.
Troy, MI

for technical competence in the field of

Acoustics and Vibration Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing.

Presented this 26th day of September 2003.

American Association for Laboratory Accreditation
Corporate SEAL 1978 District of Columbia
A2LA

President
For the Accreditation Council
Certificate Number 0386-02
Valid to May 31, 2005

For tests or types of tests to which this accreditation applies,
please refer to the laboratory's Acoustics and Vibration Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025-1999

RELIABLE ANALYSIS INC.
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ACOUSTICS AND VIBRATION

Valid To: May 31, 2005 Certificate Number: 0386-02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on adhesives, coatings (paints), deadeners, elastomers, foams, foundation board, metal, moldings, automotive paperboard, plastics, rubber, sealers, tapes, automotive textiles, body components and assemblies:

Environment Exposure:
- Temperature -65 ºC to 177 ºC with humidity 20 to 95% up to 85 ºC
- Chamber size (max.) to 26 ft. deep by 16 ft. wide by 10 ft. high (full vehicles)

Structure: hoods, decklids, fenders, other automotive components
- Torsion 50,000 in-lbf max.
- Deflection and set ± 3 in. displacement, 10,000 lbf
- Impact 9.8 m/s^2 max., 500 lbf
- Slam – Durability 1Hz max.
- Dimensional stability, including the use of LVDTs, load cells and pressure transducers

Pneumatic Cycling Durability: (ambient or -40 ºC to 120 ºC)
- Sunshade assemblies
- Hood systems
- Rear compartment systems
- Consoles
- Ashtrays
- Glove boxes
- Armrests
- Seat jounce
- Door handles
- Trim panels (interior and exterior)
- Latches
- Mirrors
- Fuel tanks

Vibration: single axis; horizontal, lateral and vertical
- Up to 6000 force lbs
- 5 to 2000 Hz
- Temperature range: -100 ºC to 177 ºC
- Sine or random, with 1 in. stroke max.

Classic Mechanical Shock:
- ½ sine, square, trapezoid, sawtooth, both positive and negative
- 1 in. stroke max.

Servo Hydraulic Fatigue Test for Load or Displacement:
- 2.5 to 11 KIP
- Up to 6.0 inches travel
- 30 GPM pump
- 3000 psi pressure
- 10 Hz max. frequency

Environmental Chambers Up To:
- 10.8 ft. wide by 26 ft. long by 9 ft. high
- -65 ºC to 177 °C temperature range
- 20 to 95% RH from 10 ºC to 85 ºC

Thermal Shock:
- -100 ºC to 177 ºC
- 8 ft^3 basket

Sound Measurement:
- 10 kHz to 20 kHz
- 146 maximum dB or dBa

Voltage Measurement to 1000 VAC DC:
- Resistance: Megohms
- Current measurement as required

Airbag Deployment:
- High speed imaging to 2000 frames/sec.
- Deployment testing performed, inside conditioning chamber
- Three (3) high speed cameras

Pressure Testing of Containers and Hoses for:
- Burst, ambient and at temperature 20,000 psi max. and 400 ºF max. temp.
- Fatigue, variable pressure, time -30 ºC to 120 ºC max. temps., 2 GPM, 66 psi
- Coolant proof (leakage)
- Creep (movement)