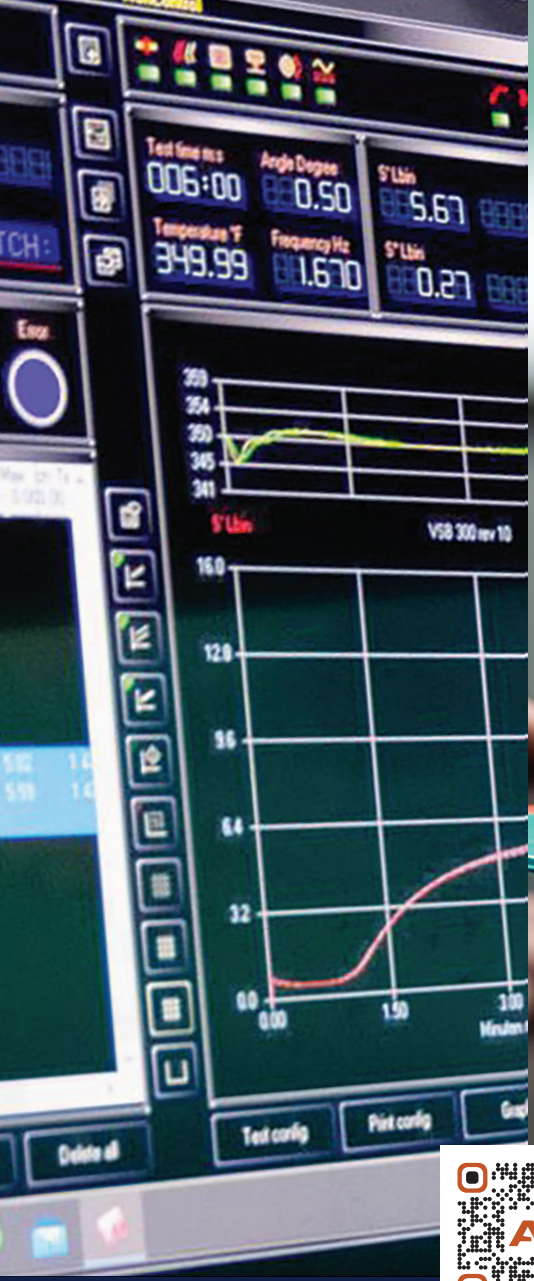

20 ATS 8

ALTTRAN TECHNICAL SERVICES

Testing You Can Trust

Delivering accurate results for rubber compounds and polymers – fast, reliable and backed by real world expertise.

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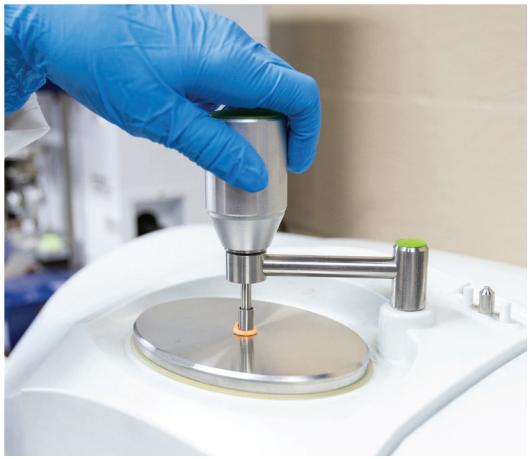

Our expert rubber testing is backed by industry experience.

ALTTRAN Technical Services (ATS) delivers precise, ASTM-certified rubber testing for standard and custom needs. Our lab analyzes tensile strength, tear resistance, brittleness, adhesion, conductivity, weathering, and more. We identify unknown materials, detect contaminants, quantify fillers, and assess degradation to verify performance. By removing formulation bottlenecks, ATS helps you accelerate development, maintain quality, and keep production running smoothly.

ALTTRAN Technical Services Test List

UNAGED PHYSICAL TESTING		
TEST	**DESCRIPTION**	**ASTM METHOD**
Lab Banbury Mixing	- Each lab batch yields 3 pounds of rubber. - One mixer dedicated to mixing carbon black compounds. - One mixer dedicated to mixing color compounds.	**D3182**
Moving Die Rheometer	- Determines the vulcanization characteristics of vulcanizable rubber compounds. - Reports out TS2, T90, S' min (ML) and S' max (MH).	**D5289**
Rubber Process Analyzer	- Measures flow properties of raw rubber and unvulcanized rubber compounds that relate to factory processing.	**D6204 / D6601**
Viscosity & Scorch	- Measures the processability of an unvulcanized rubber sample. - Viscosity is measured after the rubber sample preheats for 1 minute and runs for 4 minutes at 212°F. Reports out as ML(1+4). - Scorch reports T5 at 250°F.	**D1646**
Durometer	- Measures hardness of a vulcanized rubber compound using the Shore A hardness scale.	**D2240**
Tensile Strength	- Evaluates the tensile properties of vulcanized thermoset rubbers. - Tensile tests can be performed at elevated and low temperatures. - Reports out tensile strength, elongation and modulus values from 10% to 300%.	**D412**
Green Strength	- Determines strength of unvulcanized rubber.	**D6746**
Tear Strength	- A tearing strain is applied to a test specimen without interruption at a constant rate until the specimen is completely torn. - Tear Die B and Die C - Reports lbf/in	**D624**
Environmental Chamber	- Can be used to test tear strength or tensile strength at elevated or freezing temperatures.	

ALTTRAN Technical Services Test List

UNAGED PHYSICAL TESTING

TEST	DESCRIPTION	ASTM METHOD
Tension Set	- Measures the amount a sample is deformed after being held at a specified elongation.	**D412**
Electrical Properties	- Measures the volume resistivity or conductivity of a vulcanized rubber sample.	**D257**
Rebound / Resilience	- Determination of impact resilience of solid rubber from measurement of the vertical rebound of a dropped mass.	**D2632**
Specific Gravity	- Measures density of a vulcanized rubber sample.	**D297**
Extrusion	- Evaluates the extrudability of an unvulcanized rubber compound using a Garvey Die or Smile Die. - Capability to strain unvulcanized material through various screen sizes to identify contamination.	**D2230**
Flex Fatigue (DeMattia)	- Determines the crack growth of vulcanized rubber when subjected to repeated bending strain or flexing.	**D813**
DIN Abrasion	- Measures the abrasion resistance of vulcanized rubber that are subject to abrasive/frictional wear in actual service.	**D5963**
Taber Abrasion	- Determines the abrasion resistance of a vulcanized rubber sample using the Taber Abraser.	**D4060**
Compression Deflection	- A compression test in which the force required to cause a specified deflection is determined. - Reports results at 10%, 20%, 30%, 40%, and 50% deflection.	**D575**
Flex Stiffness	- Measures Bend Length and calculates flexural rigidity of a vulcanized rubber compound.	**D1388**
Ash Percent	- Determines the ash content in a rubber compound.	**D5667**
Spider Molding	- Used to test for flow and knitting properties of rubber compounds.	
Bladder Molding	- Inflates a bladder to form material against a mold.	

ALTTRAN Technical Services Test List

UNAGED PHYSICAL TESTING

TEST	DESCRIPTION	ASTM METHOD
Adhesion	- Determines the adhesional strength of rubber to other materials, typically metal or rubber.	**D429**
Percent Moisture	- Small sample of rubber or raw material is weighed and then placed in oven until the weight of the sample is constant. Volatile matter is calculated from the loss in mass.	**D5668**
QUV	- Determines UV resistance of a rubber sample. - Can be used to determine color change after being exposed to UV.	
UL 94 HB/VB	- Test horizontal or vertical specimens. - Samples are ignited with a methane gas burner. - Burn time and rate reported.	
Color Analysis	- Color of a sample is measured using a colorimeter and reported in L*a*b* color space values. - Can be used for comparison or to meet required color specifications.	
Melt Point Analysis	- Determines melt point of a raw material.	
Slow Rate Penetration	- Determine penetration resistance.	**F1306**

AGED PHYSICAL TESTING

TEST	DESCRIPTION	ASTM METHOD
Compression Sets	- Measures the ability of a rubber compound's ability to retain elastic properties after compressive stresses at a given time and temperature.	**D395**
Heat Aging	- Assesses the deterioration of physical properties with time caused by oxidative and thermal aging. - Durometer, tensile, and elongation are measured after a given temperature and time to determine the change.	**D573**
Fluid Aging	- Evaluates the ability of rubber to withstand liquids, including oil, water, fuel, etc.	**D471**

ALTTRAN Technical Services Test List

ANALYTICAL TESTING

TEST	DESCRIPTION	ASTM METHOD
FTIR-ATR	- Typically the first step to identify a material, especially for polymers. Often used for QA of raw materials and for analysis of surface contamination and bloom.	**E573**
FTIR-Microscopy	- For contamination analysis, especially for identifying embedded contaminants in polymers.	**E334**
TGA	- Measures the ratio of components in rubber materials such as the amount of oil, polymer, carbon black, and filler (ash).	**D6370**
TGA	- Used for compositional analysis or measuring thermal degradation of materials such as plastics, powders, or liquids.	**E1131**

LOW TEMPERATURE TESTING

TEST	DESCRIPTION	ASTM METHOD
Low Temperature Brittleness	- Determines the lowest temperature at which a vulcanized rubber sample will not exhibit fractures when subjected to specified impact conditions.	**D2137**
Gehman Low Temperature	- Determines the stiffening of flexible polymers at low temperatures. - Degree of twist measured at room temperature and at a lower specified temperature.	**D1053**
Lab Grade Freezer	- Temperature Range of -43°C to -4°C - Can be used to test durometer, tensile strength or compression set after requested time at a specified temperature.	

Rubber testing services for precision and performance.

Notes