

Glossary of Terms

Abrasion Resistance

The ability of a compound to resist mechanical wear

Brittleness

Tendency to crack when deformed

Compression Set

The amount by which a rubber specimen fails to return to original shape after release of a compressive load

Durometer

A generic term referring to the instrument and the scale used to measure the relative hardness of various elastomers (Shore A and Shore D scales)

The higher the durometer rating the higher the resistance to an indenter point penetrating into the surface of the rubber material

Dynamic Seal

A sealing device used between mating surfaces that have relative motion

Elastomer

A synthetic or natural material having the capacity for large deformation and rapid, complete recovery from the deforming force

Elongation

The percent increase in the original length of a specimen when it breaks

Extrusion

Distortion or flow, under pressure, of a portion of the seal into clearance between mating metal parts

Filler

Chemically inert, finely divided material added to the elastomer to aid in processing & improve the physical properties, i.e. temperature or abrasion resistance, strength or to give it varying degrees of hardness

Flash

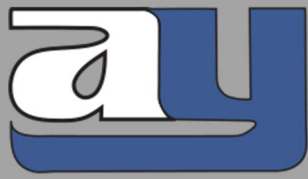
Excessive rubber left around the part after molding due to space between mating mold surfaces; typically removed by trimming

Friction

Resistance to motion due to the contact of surfaces

Gland

A groove or open area machined into the head or piston that houses the sealing device



Hardness

Resistance to a distorting force

Measured by the relative resistance of the material to an indentor point of any one of a number of standard hardness testing instruments

Hardness SHORE A

The rubber durometer hardness as measured on a Shore "A" gauge. Higher numbers indicate harder material. 35 Shore "A" durometer reading is considered soft. 90 is considered hard

Memory

Tendency of a material to return to original shape after deformation

Modulus

Tensile stress at a specified elongation (Usually 100% elongation for elastomers)

Nominal Dimension

Nearest fractional equivalent to actual dimensions

Oxidation

The reaction of oxygen on a compound usually detected by a change in the physical properties, appearance or feel of the surface

Permanent Set

The deformation remaining after a specimen has been stressed in tension for a definite period and released for a definite period

Permeability

The rate at which a liquid or gas under pressure passes through a solid material by diffusion and solution

In rubber terminology, it is the rate of gas flow expressed in atmospheric cubic centimeters per second through an elastomer material one centimeter square and one centimeter thick (atm cc/cm²/cm/cm/sec).

Resilient

Capable of returning to original size and shape after deformation

Static Seal

A sealing device used between mating surfaces that have no relative motion

Squeeze

Diametrical compression of O-Ring between surface of the groove bottom and surface of other mating metal part in the gland assembly

Swell

Increased volume of a specimen caused by immersion in a fluid (usually a liquid)

Tear Resistance

Resistance to growth of a cut or nick when tension is applied to the specimen. Commonly expressed as pounds per inch thickness

Tensile Strength

Force in pounds per square inch required to cause a rupture of a specimen of a rubber material

Thermal Expansion

Expansion caused by increase in temperature. May be linear or volumetric

Viscosity

The property of fluids and plastic solids by which they resist an instantaneous change of shape, i.e., resistance to flow