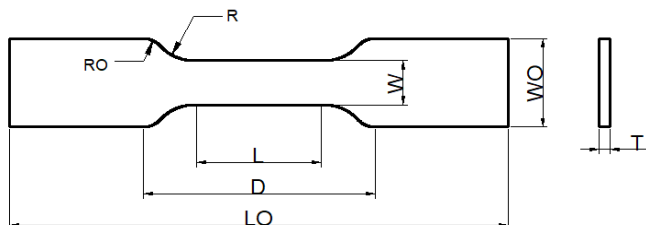


## ■ Tensile, Elongation Test ( ASTM D3574, D638)

- ◆ Specimen Dimension : Dumbbell type (See below drawing)
- ◆ # of Specimens : Three specimens per sample shall be tested. The value reported shall be the mean value of those observed.
- ◆ Test speed : 500 ± 50 mm/min,



Std.	Type	LO	D	L	R	RO	W	WO	T
ASTM D638	4	115	65	33	14	25	6	19	3.2
ASTM D3574		139.7	63.49	34.93	12.7	6.4	12.7	25.4	-

### ◆ Calculation

- ◎ **Tensile Strength (TS)** : by dividing the maximum breaking force by the original cross-sectional area of the specimen.

$$TS = F/A$$

Where :

F : dividing the maximum breaking force(MN or lbf),

A : original cross-sectional area of the specimen(m<sup>2</sup> or in<sup>2</sup>)

\* ( 1MPa = 1,000,000Pa = 1N/m<sup>2</sup>, 1Psi = 6894.757188 Pa )

- ◎ **Elongation (A<sub>g</sub>%)** :by subtracting the original distance between the bench marks from the total distance between the bench marks at the time of rupture and expressing the difference as a percentage of the original distance, as follows, or use the grip separations in a similar calculation

$$A_g\% = [(d_f - d_o)/d_o] \times 100$$

Where :

**d<sub>f</sub>** : distance between bench marks at the break point, and

**d<sub>o</sub>** : original distance between bench marks.

