



## HIGH STRAIN RATE MECHANICAL PROPERTIES TEST DESCRIPTION AND SERVICE COST

1. High strain rate ( $>10^2$ /sec) mechanical property test mainly provides the graphical record of the material under the strain rate, stress, compressive (tensile) stress and the stress-strain curve. Our company provides a high strain rate test range of about 200~9000 strain/sec. Actual test strain rate depends upon material properties and application conditions.
2. When high strain rate mechanical properties test is applied, each strain rate group is tested with a **basic of at least 5 test pieces**, and each group is analyzed by **at least 3 sets of effective data** for the high strain rate mechanical properties of the material.
3. **There is no standard specification in making high strain rate mechanical property test piece.** Careful planning, multiple equipment adjustment and fixture design according to the material properties, test conditions and equipment capacity, etc. is the fundamental before the test can be carried out and completed. **So, the test service includes: Design and production costs for test pieces and fixtures.**
4. High strain rate mechanical property test does not include the material elastic modulus and Poisson ratio test at high strain rates. These are additional paid test items.
5. Each material type test takes 45 to 70 days to complete a test cycle.
6. When commissioning the test, clients need to provide the Quasi-static strain rate ( $10^{-3}$  to  $10^{-4}$ /sec) stress and strain test report of the material. Or client may choose to entrust us to carry out such strain rate stress and strain test of the material at additional service cost.

Note: Our Company also provides high strain rate mechanical properties test at high temperature and quasi-static strain rate stress and strain test at high temperature. The high temperature rates are at 300 °C, 700 °C, 1050 °C, respectively. While elastic modulus and Poisson ratio can only reaches 850 °C. For slow rate mechanical properties, creep and fatigue test services, please contact sales department for more informations.

High Strain Rate Test Items and Cost (Per Material Type), (At Room Temperature to 80 °C):		
Test Item	Strain Stress Test per Group	
	First group	2nd and above group
Compression	US\$ SHB_C1	US\$ SHB_C2
Tension	US\$ SHB_T1	US\$ SHB_T2
Note:		

Quasi-static Strain Rate Test Items and Cost (Per Material Type), (At Room Temperature to 80 °C):			
	Strain Stress Test	Optional Test Group	
Constant Strain Rate Test Item	Strain Stress Test	Elastic modulus test	Poisson's ratio test
Compression	US\$ QS_C	US\$ QS_CE	US\$ QS_CP
Tension	US\$ QS_T	US\$ QS_TE	US\$ QS_TP
Note:	Quasi-static strain rate test cost includes test piece and fixtures designing and production.		

Ex1: AL-5083, High strain rate strain-stress **tension test** (500, 1500, 3500 strain/sec)

High strain rate cost: (US\$ SHB\_T1 x1+ US\$ SHB\_T x2) = US\$ x,xxx

Ex2: AL-5083, Quasi-static strain-stress tension test + elastic modulus/strain rate

Quasi-static rate cost: (US\$ QS\_T) + (US\$ QS\_T E) = US\$ x,xxx