

MATERIAL TEST **i94**

Tension – Compression Major Deformation Test of Rubber Vibration Isolator by Shimadzu Autograph Series



The Autograph Series features the ability to freely change test conditions while testing in addition to the reciprocating function (tension – compression).

Shown below is an example of a tension – compression major deformation test, a test popular for evaluating the dynamic characteristics of rubber vibration isolators, executed by the Autograph.

Measurement was taken to record changes in energy loss (absorbed energy) on a hysteresis loop. Load and deformation were applied to an anti-vibration rubber developed for use in the architecture and civil engineering fields, load and deformation were then increased at return point per cycle.

Test conditions

1) Cycle test by means of load control

Test mode	Cycle	Tens/comp. (Tens.)
Minimum	Load	-50 kgf
Maximum	Load	50 kgf
Test speed	2	mm/min
Load cell	10000	kgf
F/S load	500	kgf
Recording mode	X-P	
Input on axis X	Load	
Chart mag.	25	

The above were load conditions at first cycle (+/- 50 kgf).

+/- 100kgf, +/- 200kgf, +/- 300kgf and +/-400kgf were applied successively thereafter.

Test mode	Cycle	Tens/comp (Tens.)
Minimum	Stroke	-1 mm
Maximum	Stroke	1 mm
Test speed	2	mm/min
Load cell	10000	kgf
F/S load	500	kgf
Recording mode	X-P	
Input on axis X	Load	
Chart mag.	25	

The above were displacement conditions at first cycle (± 1 mm).
 ± 2 mm, ± 3 mm, ± 4 mm and ± 5 mm were applied successively thereafter.

Test results

1) Cycle test by means of load control

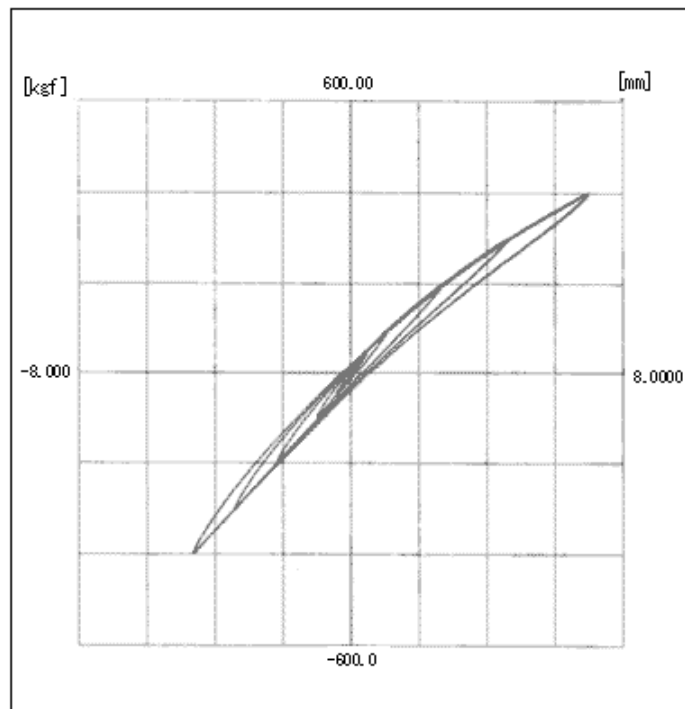


Fig. 1:
 Load versus Displacement Curve of Rubber Vibration Isolator
 (cycle test by load control)

2) Cycle test by means of displacement control

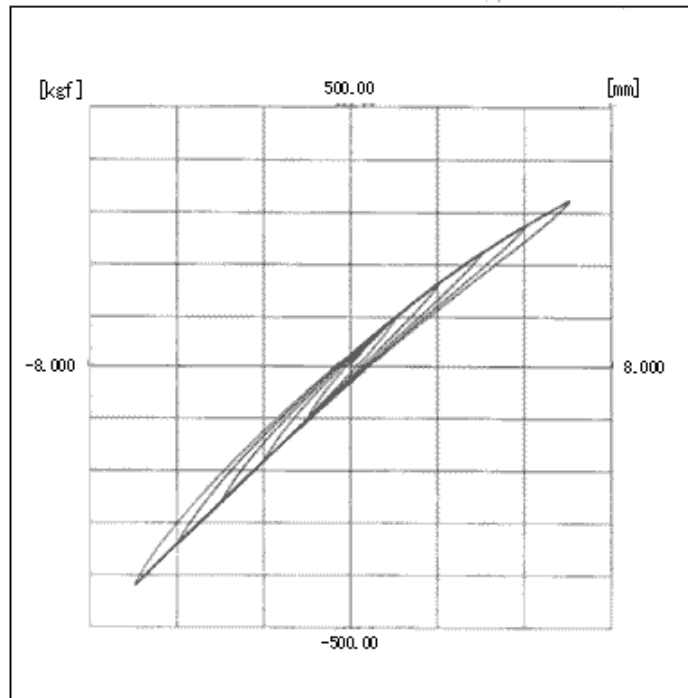


Fig. 2:
Load versus Displacement Curve of Rubber Vibration Isolator
(cycle test by displacement control)

* Please be advised that data obtained before the implementation of the current Weights and Measures Law may be presented in terms of gravimetric unit.



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