

Soils Resilient Modulus Test Software

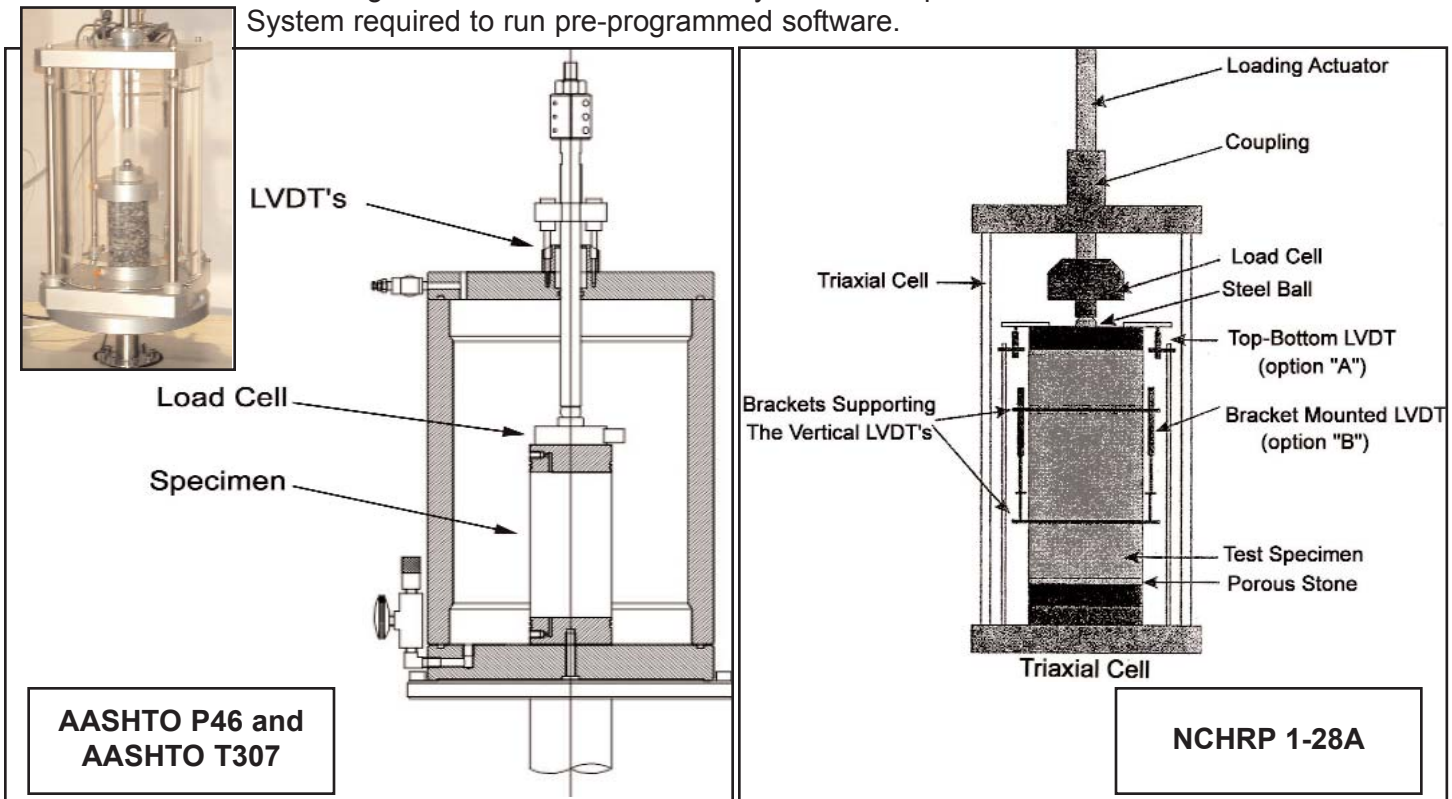
Procedures Covered

AASHTO P46, AASHTO T307
NCHRP 1-28A

System Configurations:

AASHTO P46 and T307, a dynamic testing frame, a triaxial cell, an external load cell and two external LVDT's measuring the relative motion of the loading rod and the top of the triaxial cell. Interlaken's UniTest Control System required to run pre-programmed software.

NCHRP 1-28A, a dynamic testing frame a triaxial cell, an internal load cell and two internal LVDT's measuring the relative motion of two layers on the specimen. Interlaken's UniTest Control System required to run pre-programmed software.

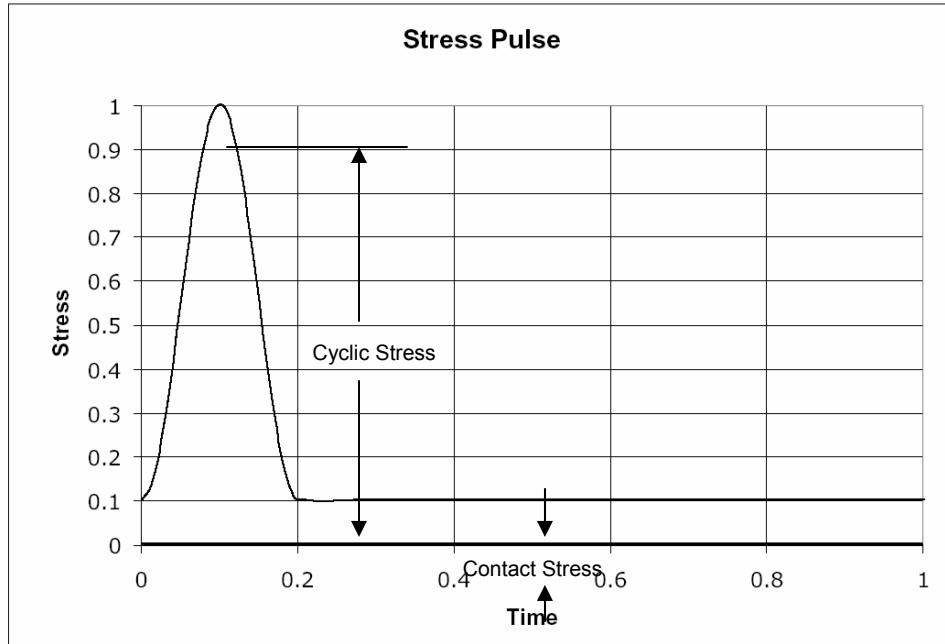


Background:

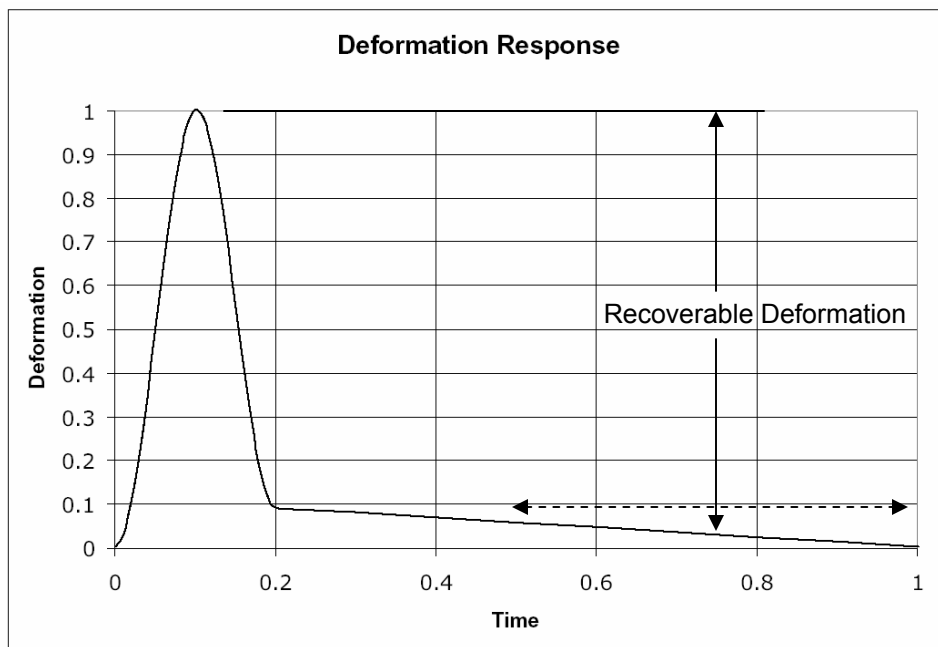
This application will support both the procedures specified in AASHTO P46, T307 and NCHRP 1-28A. The difference is in the transducers and loading sequences.

The loading waveform is a haversine pulse followed by a dwell. The load levels are specified by a contact load and cyclic load.

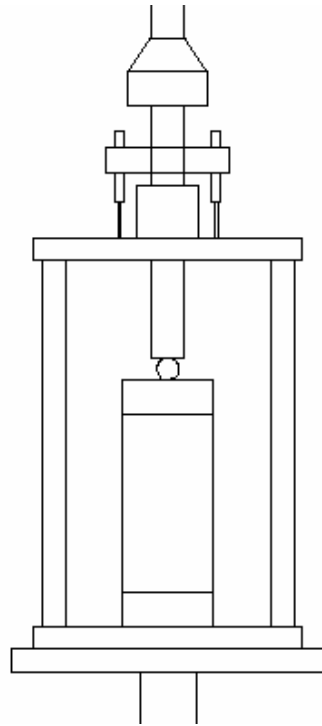
This method contains procedures for testing of base and subbase soils, gravel and aggregate materials for the determination of resilient modulus under the simulated physical conditions and stress of materials that are found beneath flexible pavements and are subject to the moving wheel loads of vehicles.



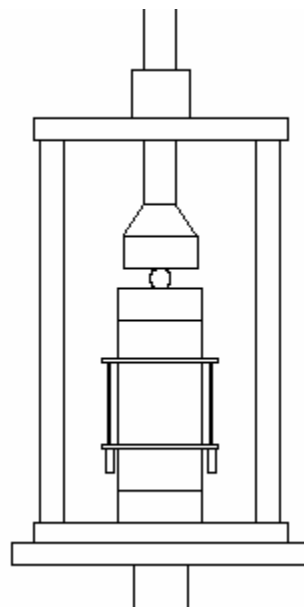
Applied stress pulse. The contact stress, cyclic stress and pulse duration are specified in the pulse file.



The recoverable deformation is based on the difference between the peak and the average of the last 50 %.



External load cell and deformation transducers as described in P 46.



Internal load cell And deformation transducers as described in the NCRP 1-28A harmonized procedure.

Reports

To open a report go to **Resilient Modulus-Soil** on the **Test** pull down menu. Then select the **Report** option. When the report form opens select **Load** to open the selection window.

Reports have an extension of .rm2 for tests with external transducers (P46) and .rm3 for reports with internal transducers (1-28A). The report forms follow the format defined in the procedures P 46 and 1-28A. The data is in a text format which can be imported into Excel or other analysis tools.

Parameter	Chamber Confining Pressure	Nominal Maximum Axial Stress	#	Actual Applied Max. Axial Load	Actual Applied Cyclic Load	Actual Applied Contact Load	Actual Applied Max. Axial Stress	Actual Applied Cyclic Stress	Actual Applied Contact Stress	Recov. Def. LVDT #1 Reading	Recov. Def. LVDT #2 Reading	Recov. Def. LVDT #3 Reading	Average Recov. Def. LVDTs	Resilient Strain	Resilient Modulus
Sequence 1	8.0	4.0	1	69.	50.	19.	5.6	4.0	1.6	2353.	2140.	n/a	2247.	0.00028	14246.
			2	69.	49.	19.	5.5	3.9	1.6	2323.	2118.	n/a	2221.	0.00028	14138.
			3	68.	49.	20.	5.4	3.9	1.6	2310.	2091.	n/a	2200.	0.00028	14114.
			4	68.	49.	20.	5.5	3.9	1.6	2314.	2090.	n/a	2202.	0.00028	14132.
			5	69.	49.	19.	5.5	3.9	1.6	2343.	2116.	n/a	2230.	0.00028	14126.
	Column Standard	Average Deviation		69.	49.	19.	5.5	3.9	1.6	2329.	2111.	n/a	2220.	0.00028	14151.
				1.	1.	0.	0.0	0.0	0.0	19.	21.	n/a	19.	0.00000	54.
Sequence 2	6.0	4.0	1	66.	51.	15.	5.2	4.1	1.2	2560.	2327.	n/a	2443.	0.00031	13316.
			2	65.	51.	15.	5.2	4.1	1.2	2563.	2320.	n/a	2442.	0.00031	13292.
			3	66.	51.	15.	5.3	4.1	1.2	2578.	2326.	n/a	2452.	0.00031	13323.
			4	65.	51.	15.	5.2	4.0	1.2	2553.	2301.	n/a	2427.	0.00030	13323.
			5	65.	50.	15.	5.2	4.0	1.2	2526.	2275.	n/a	2400.	0.00030	13328.
	Column Standard	Average Deviation		65.	51.	15.	5.2	4.0	1.2	2556.	2310.	n/a	2433.	0.00030	13317.
				0.	0.	0.	0.0	0.0	0.0	19.	22.	n/a	20.	0.00000	14.
Sequence 3	4.0	4.0	1	61.	51.	10.	4.9	4.1	0.8	2788.	2560.	n/a	2674.	0.00033	12213.
			2	61.	51.	10.	4.9	4.1	0.8	2803.	2557.	n/a	2680.	0.00033	12279.
			3	61.	51.	10.	4.8	4.1	0.8	2772.	2545.	n/a	2658.	0.00033	12214.
			4	60.	50.	10.	4.8	4.0	0.8	2754.	2523.	n/a	2638.	0.00033	12175.
			5	60.	50.	10.	4.8	4.0	0.8	2749.	2522.	n/a	2635.	0.00033	12226.
	Column Standard	Average Deviation		61.	51.	10.	4.8	4.1	0.8	2773.	2541.	n/a	2657.	0.00033	12222.
				0.	0.	0.	0.0	0.0	0.0	23.	18.	n/a	20.	0.00000	37.
Sequence 4	2.0	4.0	1	55.	50.	5.	4.4	4.0	0.4	3069.	2835.	n/a	2952.	0.00037	10916.
			2	55.	50.	5.	4.4	4.0	0.4	3067.	2831.	n/a	2949.	0.00037	10910.
Unit	psi	psi	---	lbs	lbs	lbs	psi	psi	psi	in	in	in	in	in/in	psi

An example of the file format is shown on the next page.

