

Procedure Checklist AASHTO T-90 Plastic Limit and Plasticity Index of Soils

		P	F	N/A
Sample Preparation				
1.	Soil obtained from the thoroughly mixed portion of the material passing the No 40 (0.425 mm) sieve.			
	20 g of air-dried soil placed in a mixing dish and mix with distilled or demineralized water until shaped into a ball. Portion of this ball with a mass of about 10 g removed for the test sample. OR Sample of about 10 g obtained from the thoroughly wet and mixed portion of the soil prepared in accordance with AASHTO T89.			
Procedure				
2.	The 10 g fraction sample selected in pieces that are 1.5-2.0 g in size.			
3.	For each 1.5-2.0 g sample, formed the mass into an ellipsoid then rolled into a uniform 3 mm diameter thread at a rate of 80 to 90 strokes per minute between the palm or fingers and a ground-glass plate or paper laying on a smooth surface within 2 minutes.			
4.	If rolling device is used, soil mass placed on bottom plate then top plate placed in contact with soil mass and rolled back and forth with a simultaneous slight downward force. Top plate should contact side rails within 2 minutes.			
5.	When the thread reaches 3 mm in diameter, soil thread squeezed together between the thumbs and fingers back into a uniform mass roughly ellipsoidal in shape.			
6.	Repeated Steps 3 through 5 until the thread crumbles under the pressure required for rolling and can no longer be formed into a thread. Note: <i>Crumbling may occur when the thread diameter is greater than 3 mm.</i>			
7.	No attempt to produce failure at exactly 3 mm.			
8.	Portions of the crumbled soil gathered and placed in a suitable weighed container with the lid immediately replace to prevent moisture loss.			
9.	Container weighted.			
10.	Repeated the operations described in steps 2 thru 9, until the whole 10 g specimen is completely tested.			
11.	Determined the moisture content of the sample in accordance with AASHTO t 265.			
12.	Calculated the plastic limit of the soil to the nearest whole percent as follows: $\text{Plastic Limit} = \frac{\text{mass of water}}{\text{mass of oven dried soil}} \times 100$			
13.	Calculated and reported the plasticity index as follows: $\text{Plasticity} = \text{Liquid Limit} - \text{Plastic Limit}$ Reported the plasticity index as NP (Non-Plastic) when the liquid limit or plastic limit cannot be determined, or when the plastic limit is equal to or greater than the liquid limit.			

Remarks: Comparison Criteria: Maximum Difference = 18% of the Mean of Two Plastic Limit Tests

Date: _____ Technician: _____ IA Observer: _____

Technician's E-mail address: _____

Employer's/ Supervisor's E-mail Address: _____