

**IA Checklist
 T-90
 DETERMINING THE PLASTIC LIMIT AND
 PLASTICITY INDEX OF SOIL**

Procedure		P	F	NA
1	Determine and record the mass of the moisture content container.			
2	Take a quantity of soil with a mass of about 20 g from the thoroughly mixed portion of the material passing the 0.425-mm (No. 40) sieve, obtained in accordance with R 58. Place the air-dried soil in a mixing dish and thoroughly mix with distilled or demineralized water until the mass becomes plastic enough to be easily shaped into a ball.			
3	Take a portion of this ball with a mass of about 8 g for the test sample. Select a 1.5- to 2.0-g portion from the 8-g mass of soil prepared. Form the selected portion into an ellipsoidal mass. Use one of the following methods to roll the soil mass into a 3-mm-diameter thread at a rate of 80 to 90 strokes per minute, counting a stroke as one complete motion of the hand forward and back to the starting position again.			
4	Roll the mass between the palm or fingers and the ground-glass plate or unglazed paper with just sufficient pressure to roll the mass into a thread of uniform diameter throughout its length. Deform the thread further on each stroke until its diameter reaches 3 mm. Take no more than 2 min to roll the soil mass to the 3-mm diameter.			
5	When the diameter of the thread reaches 3 mm, squeeze the thread between the thumbs and fingers and form the mass back into a roughly ellipsoidal shape. Repeat the rolling process until the soil can no longer be rolled into a thread and begins to crumble. Reform the soil into an ellipsoidal mass after each rolling of the thread to a 3-mm diameter. The crumbling may occur when the thread has a diameter greater than 3 mm. This is considered a satisfactory end point, provided the solid has been previously rolled into a thread 3 mm in diameter. Do not attempt to produce failure at an exact 3-mm diameter by allowing the thread to reach 3 mm, then reducing the rate of rolling or the hand pressure, or both, and continuing the rolling without further deformation until the thread falls apart.			
6	Gather the portions of the crumbled soil together and place in the moisture content container. Immediately cover the container with a close-fitting lid to prevent additional loss of moisture. Repeat the operations until the entire 8-g specimen is tested. Place all of the crumbled portions into the same moisture content container. Determine the moisture content of the soil in the container in accordance with T 265, and record the results.			

Remarks: