

PAHs in Asphalt



ESITC – France: New regulations across Europe are requiring laboratory analysis for PAH content in asphalt. Researchers at ESITC’s lab are using the Sitalab TD-500D analyzer to monitor PAH levels in new, reclaimed and recycled asphalt. Maximum PAH limit for reuse is 50 ppm.

In this study, three asphalt samples were ground down to different particle sizes and sent to four certified laboratories for comparison. Correlation to the TD-500D was good, making this a reliable field screening tool.



In France, laboratories use U.S. EPA Method 8270 by GC/MS to measure 16 polycyclic aromatic compounds. This includes Phenanthrene, Benzo[a]Pyrene and other PAHs abundant in coal tars and heavy fuel oils used to make asphalt and road sealers.

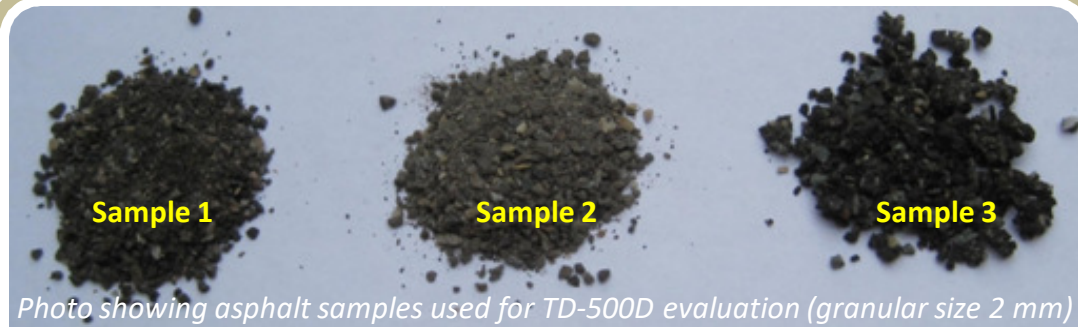


Photo showing asphalt samples used for TD-500D evaluation (granular size 2 mm)

Laboratory PAH results by EPA Method 8270 testing different particle sized sub-samples **TD-500D PAH results**

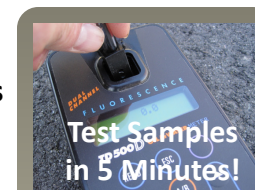
<u>Sample 1</u>	<u>10 mm</u>	<u>0.5 mm</u>	<u>2 mm</u>	TD-500D PAH results
LAB 1: ESITC	600	270	349	➔ 356
LAB 2	340	424	426	
LAB 3	555	367	356	
LAB 4	246	282	220	

<u>Sample 2</u>				TD-500D PAH results
LAB 1: ESITC	290	129	182	➔ 228
LAB 2	172	212	243	
LAB 3	215	195	162	
LAB 4	109	141	84	

<u>Sample 3</u>				TD-500D PAH results
LAB 1: ESITC	2,033	747	1,531	➔ 1,177
LAB 2	1,685	1,347	1,773	
LAB 3	1,310	1,231	1,967	
LAB 4	729	958	1,139	

Concentrations above are in ppm units (mg/Kg)

ESITC carefully split and homogenized each sample. Despite this effort, the four laboratories exhibited a wide range in concentrations. This is common with environmental testing.



The TD-500D is a portable field tool highly sensitive to PAHs in asphalt.



Samples are extracted in methanol solvent using Sitalab test kits.



Sitalab PAH calibration kit CAL-061 is used for TD-500D analysis.