MATC
MOBILE ASPHALT TECHNOLOGY CENTER

U.S. Department of Transportation
Federal Highway Administration

TECHNOLOGY DEPLOYED IN MATC

ILLINOIS FLEXIBILITY INDEX TEST (I-FIT)

Determine the flexibility of your asphalt mixture

HOW IT WORKS

The I-FIT uses semi-circular bending geometry in a loading frame capable of measuring load and displacement over time at room temperature in order to determine the cracking potential of asphalt mixtures. The test is run at a displacement rate of 50 mm/minute to produce a fracture mechanics-based parameter calculated from the fracture energy and the post-peak slope. In the end, this test will generate the parameter's flexibility index (FI). Specimens are fabricated to 150 mm in diameter and 50 mm in height, notched to a depth of 15mm and to a width of ≤ 2.25 mm to force the failure location, with 7.0±1.0 percent air voids, and conditioned at the test temperature (25°C) for at least two hours before testing.

The larger the FI, the better the cracking resistance.

Image Source: FHWA
I-FIT specimen in jig

I-FIT FEATURES

Quick **OPERATION**

Generate a FI for each specimen in **<5 MINUTES**

New load frame and equipment costs **~$12,000**

Retrofit for load frame and equipment costs **~$4,000**

SPECIMENS require cutting and notching

Tests at least **THREE REPLICATES** for each sample

Meets **AASHTO TP124** standards and specifications*

Current use of I-FIT in specifications in: California, Illinois

Current performance testing program evaluations of I-FIT in: Minnesota, Utah, Vermont, Wisconsin

LEARN MORE AT HTTPS://WWW.FHWA.DOT.GOV/PAVEMENT/ASPHALT/TRAILER/TESTING.CFM

* These standards and specifications are not FHWA requirements