

ABSTRACT

Dr. Gilbert Y. Baladi of Michigan State University has developed a new device intended for reliable determination of asphalt concrete mechanical properties such as Poisson's ratio, resilient modulus, and indirect tensile strength. The device is the result of an effort to improve upon procedures and equipment currently available for evaluation of mechanical properties. A duplicate of this device was fabricated in the Iowa Department of Transportation, Materials Lab Machine Shop in 1989.

This report details the results of an evaluation of the effectiveness of the device in testing Marshall specimens for indirect tensile strength as compared to results obtained with standard equipment described in AASHTO T-283.

Conclusions of the report are:

1. Results obtained with the Baladi device average 6 to 8 percent higher than those obtained with the standard device.
2. The standard device exhibited a slightly greater degree of precision than did the Baladi device.
3. The Baladi device is easier and quicker to use than the standard apparatus.
4. It may be possible to estimate indirect tensile strength from the stability/flow ratio by dividing by factors of 1.8 and 1.5 for 50 blow and 75 blow mixes respectively.