Name of Test
High Temperature Indirect Tension (HT-IDT)

Developer(s)
Christensen and Bonaquist (adapted from classical indirect tension strength test)

Test Method(s)
N/A

Adoption by Agencies
Alabama

Description
This is a typical indirect tensile strength (ITS) test (conducted at 50 mm/min), with the exception that it is performed on specimens conditioned at a high test temperature. The resulting parameter is the high temperature ITS. It is being evaluated as potential quick test for estimating mixture rutting resistance.

Photographs/Illustrations

Test Results
Indirect Tensile Strength (ITS)

Test Temperature(s)
10°C below the LTPPBind v3.1 yearly 7-day average maximum pavement temperature 20°C below the pavement surface

Equipment & Approximate Cost
Load Frame

$10,000 to $20,000

Specimen Fabrication
Gyratory specimen

Number of Replicate Specimens
At least 3 specimens per mixture

Specimen Conditioning
Conditioning for 2 hours at the test temperature

Testing Time
1 minute per specimen

Data Analysis Complexity
Simple

Test Variability
Low (Less than 10% COV)

Field Validations
Not available. Good correlation with APA results (NJ).

Overall Practicality for Mix Design and QA
Good for Mix Design
Good for QA

Key References

- Advanced Asphalt Technologies, LLC. (2011). A Manual for Design of Hot Mix Asphalt with Commentary. Washington, D.C.: NCHRP Report 673.
- Bennert, T., Haas, E., & Wass, E. (2018). Indirect Tensile Test (IDT) to Determine Asphalt Mixture Performance Indicators during Quality Control Testing in New Jersey. *Transportation Research Record Vol. 2672(28)*, 394-403.
- Yin, F., Taylor, A. J., & Tran, N. (2020). Performance Testing for Quality Control and Acceptance of Balanced Mix Design. Auburn, AL: NCAT Report 20-02.