



ADVANCED PAVEMENTS TESTING SYSTEMS

DSR

Dynamic Shear Rheometer

Rheological properties of asphalt binders

Standards AASHTO T315, T316, T350, M320, M332, R29, ASTM D7175, D4402, D7405, EN 13302, EN 13702-1, EN 13702-2, EN 14770, EN 14896

Dynamic Shear Rheometers (DSR) performs the critical rheological characterization analysis required for SuperPave Performance Grade (PG) classification of asphalt binders.

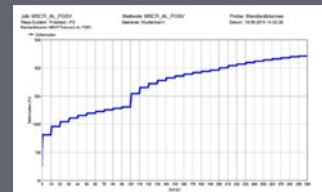
The behavior of the binder under various temperature and loading conditions is measured to predict the performance of binders at anticipated climatic conditions.

The DSR test uses a thin asphalt binder sample sandwiched between two circular plates. The lower plate is fixed while the upper plate oscillates back and forth across the sample to create a shearing action. DSR tests are conducted on unaged, RTFO aged and PAV aged asphalt binder samples. The test is largely software controlled.

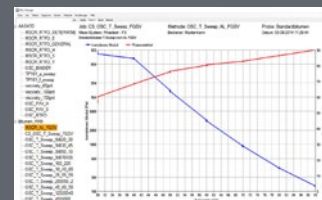
81-PV6102 is able to perform SuperPave performance grading according to AASHTO T315 and ASTM D7175, Viscosity determination of asphalt binder in according to AASHTO T316 and ASTM D4402 and determine Multi Stress Creep Recovery (MSCR) according to AASHTO T350 and ASTM D7405.

Main Features

- > Performance Grade (PG) determination test.
- > Determination of deformation properties of bitumen with Multiple Stress Creep Recovery test (MSCR – Test).



- > Determination of complex shear modulus G^* and phase angle δ of road bitumen at different temperatures.



- > Precise and stable temperature control unit (Peltier unit).
- > Excellent temperature stability and accuracy.
- > Meet and exceed AASHTO, ASTM and EN Standards.
- > Simple to use.



Technical Specification

RHEOMETER

Torque range	0,1 to 150 mNm
Torque resolution	0,002 mNm
Speed range	0 to 1000 rpm
Speed resolution	0,015 rpm
Rotation angle range	-50° to 300°
Angle resolution	0.001°
Frequency	0.001 to 10 Hz
Viscosity range	0.1 to 7x10 ⁷ Pas
Complex shear modulus	0.1 to 4x10 ⁶ kPas
Phase angle range	0 to 90°

TEMPERATURE CONTROL UNIT (PELTIER UNIT)

Maximum temperature	150°C
Minimum temperature	-10°C
Temperature accuracy	$\leq 0.1 K$, range 5°C to 90°C
Interface	USB 2.0

SOFTWARE MANAGER

Prepared jobs for automatic and fast execution of all bitumen tests

Automated evaluation and analysis of measuring results in accordance with AASHTO

With estimation of Performance Grade

Different test types for original binders, RTFO and PAV

Grade Determination and PASS/FAIL conditions

Bitumen Wizard

Ordering Information

81-PV6102

DSR Dynamic Shear Rheometer.
110-230V/50-60Hz/1Ph.

Configuration

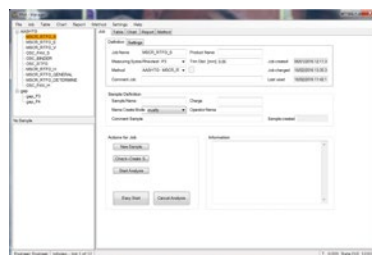
- 1 Basic instrument Rheometer: measuring head, stand, control unit



- 2 Peltier unit: Peltier control unit, peltier tempered basic plate, basic plate support, adapter, exchange grip, exchangeable plate (ø 25mm), measuring plate P3 (ø 25mm), measuring plate P4 (ø 8mm)



- 3 Software Manager for Bitumen tests



- 4 Set of trimming tools, set of rubber moulds, 20 ml calibration liquid NF 5000000, interface cables, USB adapter, user manual



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