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DATA SHEET

Dynamic Shear Rheometer (DSR)

81-PV6102 Manual Dynamic Shear Rheometer

General description

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

The **81-PV6102** and **81-PV6202** DSR models 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.

- 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.

Affordable, robust and accurate, the new DSR offers the following benefits:

- **Great value —** ideal for asphalt and bitumen QC laboratories at very competitive price
- **Reliable and long lasting —** sturdy stainless steel construction
- **Simple to use** with intuitive software guiding the user through the various test phases
- **Fully compliant,** exceeding AASHTO, ASTM and EN Standards.
- **Robust** with excellent temperature stability and accuracy

DSR tests are conducted on unaged, RTFO aged and PAV aged asphalt binder samples. The binder behavior under various temperature and loading conditions is analyzed to predict its performance at anticipated climatic conditions.

Standards

DATA SHEET

- AASHTO M320
- ASTM D4402
- AASHTO T316
- EN 13302
- AASHTO T315
- ASTM D7175
- ASTM D7405
- EN 14770

Specifications

RHEOMETER	***81-PV6102***	***81-PV6202***
Torque Range	0,1 to 150 mNm	0,1 to 150 mNm
Torque resolution	0,001 mNm	0,001 mNm
Speed Range	0 to 2000 rpm	0 to 2000 rpm
Speed Resolution	0,015 rpm	0,015 rpm
Viscosity Range, RN general	1 to 1 x 10^{10} mPas	1 to 1 x 10^{10} mPas
Viscosity Range, plate P3	1 x 10^{2} to 1 x 10^{8} mPas	1 x 10^{2} to 1 x 10^{8} mPas
Viscosity Range, plate P4	5 x 10^{3} to 1 x 10^{10} mPas	5 x 10^{3} to 1 x 10^{10} mPas
Complex Shear Modulus, plate P3	0,1 to 2 x 10^{4} kPa	0,1 to 2 x 10^{4} kPa
Complex Shear Modulus, plate P4	20 to 4 x 10^{6} kPa	20 to 4 x 10^{6} kPa
Phase Angle Range	0 to 90°	0 to 90°
Frequency	0,001 to 100 Hz	0,001 to 100 Hz
Normal Force Range	-	-30 to 30 N
Normal Force Resolution	-	0,01 N
Automatic Gap Setting	No	Yes
Gap Resolution	-	1 µm
TEMPERATURE CONTROL UNIT		
Maximum Temperature	150°C	180°C
Minimum Temperature	-10°C	-15°C
Temperature Accuracy	⩽ 0,1 K Range 5°C to 90°C	⩽ 0,1 K Range 5°C to 90°C
Interface	USB 2.0	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

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81-PV6202 Automatic Dynamic Shear Rheometer

Basic instrument Rheometer: measuring head, stand, control unit

Peltier control unit

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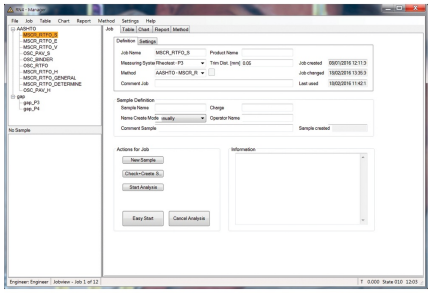
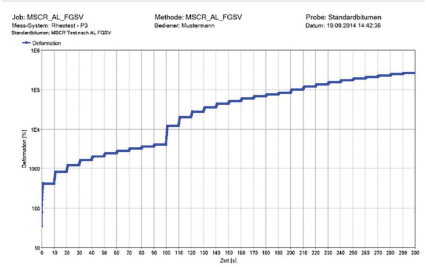


Software Manager for Bitumen tests



Determination of deformation properties of bitumen with Multiple Stress Creep Recovery test (MSCR Test)

Products

81-PV6102

Dynamic Shear Rheometer (DSR), standard model, conforming to EN 14770, ASTM D7175, ASTM D 4402, D7405, AASHTO TP70, T350, M332, T315, M320.110-230V/50-60Hz/1ph

81-PV6202

Dynamic Shear Rheometer (DSR), advanced model, conforming to EN 14770, ASTM D7175, ASTM D 4402, D7405, AASHTO TP70, T350, M332, T315, M320.110-230V/50-60Hz/1ph