

Software RHEOTEST® RN MANAGER

Programm for performing, displaying and evaluating CR tests (shear rate), CS tests (shear stress) and OSC Oscillation tests. International standards and test specifications are stored in the software as standard tests. For special applications, predefined jobs for standard test methods are programmed for automatic test execution.

operating system	Windows 10 and higher
languages	English, Spanish, Russian, German – further languages on demand
user administration	definition of user rights
measuring data analysis according to the following models:	Newton, Ostwald de Waele, De Haven, Carreau, Cross, Golub, Reiner-Phillippoff, Meter, Bingham, Herschel Bulkley, Casson, Casson allg., Tscheuschner allgm.
import/export function	of the measurement data e.g. in Excel import and export of jobs for archiving or exchange with other users (GMP, GLP, GCP and FDA 21 CFR Part 11 compliant)
further functions	parallel temperature control of supporting temperature control technology definition of stop criteria definition of parameters calculation (e.g.: average viscosity, limits, thixotropy, yield point, correlation, scatter) configurable display of data in table and graph generation of reports freely programmable jobs

Manufacture and made in Germany
WHY WE ARE DIFFERENT

Know-how and precision down to the smallest detail: At RHEOTEST®, ideas, high-tech and craftsmanship are converted to perfection. Near to Dresden creative engineers, experienced rheologists and practiced mechanics let arise rheological measuring instruments.

RHEOTEST® combines modern technology and manual work with the aim of producing a high quality product which is appreciated both by dealers and customers in our globalized world.

Viscometers and rheometers from Medingen have been a reliable constant in the test laboratory for decades: Precise test results, user-friendliness, robust design and cost effectiveness create real added value for our customers around the globe.

regionally manufactured – globally in demand
DISTRIBUTION WORLDWIDE

Around the globe, our customers appreciate German workmanship: A large number of our viscometers and rheometers are exported and used worldwide. Please contact RHEOTEST® directly or contact our sales partners at: www.rheotest.com



 **RESEARCH & DEVELOPMENT**

 **MANUFACTURING**

 **INSTALLATION & TRAINING**

 **ONLINE SUPPORT**

 **CALIBRATION**

 **SERVICE**

PRECISION
MADE IN GERMANY



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Viscometer from Medingen.
Since 1932.

www.rheotest.com

The first choice of laboratories for routine testing of bitumen.

DSR RHEOMETER
RHEOTEST® RN 5.3 advanced
RHEOTEST® RN 4.3 standard

BitumenRheometer
RHEOTEST® RN 5.1





DSR RHEOTEST® RN 5.3 advanced



DSR RHEOMETER RHEOTEST® RN 5.3 advanced
DSR RHEOMETER RHEOTEST® RN 4.3 standard

All tests from the rotation (CR-/CS-tests: shear rate and shear stress controlled tests) up to oscillation (OSC tests) are possible.

automatic gap adjustment
variably adjustable working range for filling, trimming and tempering of samples and cleaning the measuring system

illuminated measuring chamber

routine measuring run
exchange system for comfortable sample loading and cleaning of the measuring system, accessories for standard-compliant sample preparation

fast and all-round temperature control of the sample
dry temperature control of the sample by integrated Peltier technology in the temperature range from:
DSR RN 5.3 advanced -15°C ... +180°C
DSR RN 4.3 standard -10°C ... +180°C
depending on the temperature control medium

Normal force measurement
Normal force for automatic determination of zero point and measuring gap, limitation of the to prevent structural damage in the bitumen sample.

practical handling beyond clean room conditions
All rheometers of the RHEOTEST® RN series require neither clean room conditions nor technical requirements for stable and oil-free air pressure - thus eliminate additional operating costs.

RHEOTEST® DSR RN 5.3 advanced and DSR RN 4.3 standard are characterized by the high quality of use in daily and routine interaction of a laboratory; both are configured and delivered as a complete measuring place including accessories. For immediate use.

measuring precision made in Germany
Every rheometer of the series RHEOTEST® RN contains ball bearings from the world's best manufacturer. Thanks to powerful, high-precision and proven ball bearing drive, the RHEOTEST® RN is unbeatable in its robustness.

TECHNICAL SPECIFICATION

	DSR RHEOTEST® RN 5.3	DSR RHEOTEST® RN 4.3
torque	0,1 ... 150 mNm	0,1 ... 150 mNm
torque resolution	0,001 mNm	0,001 mNm
speed maximum	2000 rpm	2000 rpm
speed resolution	0,015 rpm	0,015 rpm
angle deflection	0 ... 5 x 10 ⁶ µrad	0 ... 5 x 10 ⁶ µrad
angle resolution	11,87 µrad	11,87 µrad
angle speed	0,001 rad/s ... 210 rad/s	0,001 rad/s ... 210 rad/s
frequency minimum	0,001 Hz 6,28·10 ³ rad/s	0,001 Hz 6,28·10 ³ rad/s
frequency maximum	100 Hz 628 rad/s	100 Hz 628 rad/s
normal force range	-30 ... 30 N	-
normal force resolution	0,01 N	-
autom. gap adjustment	yes, gap resolution... 0,1 µm	no
temperature range, total	-10°C ... +180°C	-15°C ... +180°C

EQUIPMENT

Both DSR rheometers require neither clean room conditions nor conditions for stable and oil-free air pressure.
Ready for immediate use:
We supply you with a complete measuring place including measuring systems, accessories for sample preparation, Peltier temperature control and software RN Manager.

STANDARDS & APPLICATION

meets bitumen and asphalt tests according to international binding standards such as:

DSR RHEOTEST® RN 5.3 advanced

DIN EN 13302 / 13702 /
DIN EN 14896 / 14770 / 16659
FGSV AL 723 / 722 / 721 / 720
BTSV (Bitumen typing Fast procedure)
AASHTO M320
ASHTO T350
AASHTO M332
AASHTO R29
ASTM D7405 / D4402 / D7175
AASHTO TP 101

with extended cylinder measuring systems:
DIN EN 13302
GOST 33137
ASTM D4402
ASTM D2493
AASHTO T316
AASHTO TP4

DSR RHEOTEST® RN 4.3 standard

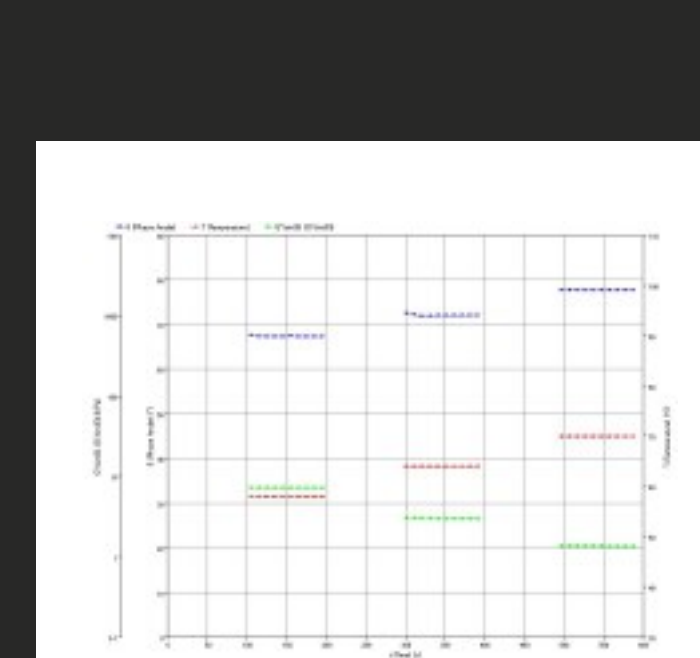
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-

with extended cylinder measuring systems:
DIN EN 13302
GOST 33137
ASTM D4402
ASTM D2493
AASHTO T316
AASHTO TP4



TAILOR-MADE
With the rotary rheometer BitumenRheometer RHEOTEST® RN 5.1, the measurements of the dynamic viscosity of bitumen according to all binding standards and norms such as ASTM, AASHTO, DIN EN and GOST can be carried out quickly and accurately.

Simple viscosity measurements can be carried out at various temperatures, but also defined test sequences with automatic evaluation and reporting as described in e.g. in GOST 33137.



Rotational Tests (CR-/CS-tests) feasible:
shear rate and shear stress controlled tests

flexible at any time by modular design
Optionally expandable with additional measuring systems and temperature control systems.

user-friendly software
Predefined jobs stored in the software RN Manager allows test execution and evaluation by settled conditions for selected bitumen types.

measuring precision made in Germany
Bitumen Rheometer RHEOTEST® RN 5.1 contains ball bearings from the world's best manufacturer. Thanks to powerful, high-precision and proven ball bearing drive, the RHEOTEST® RN is unbeatable in its robustness.

BitumenRheometer RHEOTEST® RN 5.1

TECHNICAL SPECIFICATION

torque	0,1 to 150 mNm
torque resolution	0,002 mNm
speed	0 to 2000 rpm
speed resolution	0,015 rpm
viscosity range	0,001 ... 5000 Pas
cylinder measuring systems	0,001 ... 5000 Pas
temperature range for Peltier (PCS) cylinder measurings systems	-15°C ... +180°C

EQUIPMENT

measuring place ready for immediate use including:
two cylinder measuring systems
Peltier temperature control for cylinder measuring systems
RHEOTEST® PCS

Software RHEOTEST® RN MANAGER
optionally including tablet / notebook

STANDARDS & APPLICATION

For the determination of the dynamic viscosity of bitumen according to international standards:

DIN EN 13302
GOST 33137
ASTM D4402
ASTM D2493
AASHTO TP4
AASHTO T316

For the determination of the dynamic viscosity of bitumen according to ASTM D4402, AASHTO T316 and DIN EN 13702, tests are carried out with the rotational rheometer at different temperatures and a specific constant shear rate. The measurement result is the dynamic viscosity in Pas with the corresponding shear rate and the test temperature.

Temperature control with the Peltier technique enables the temperature range from -15°C to +180°C (without additional technique). Thereby the temperature of bitumen is set quickly and precisely with an accuracy of 0.1°C.

THE FIRST CHOICE FOR TESTING LABORATORIES TO TEST BITUMEN ROUTINELY
Both DSR Rheometers RHEOTEST® RN 4.3 and 5.3 are suitable for testing asphalt binders according to SUPERPAVE, ASTM, AASHTO, DIN EN, GOST and GOST R standards.

The DSR rheometer is used both for scientific analysis and tests as well as for determining the quality and classification of bitumen binders.



DSR RHEOTEST® RN 4.3 standard

