

# Modular Compact Rheometer for the iCCL™ Method

UPTiM™

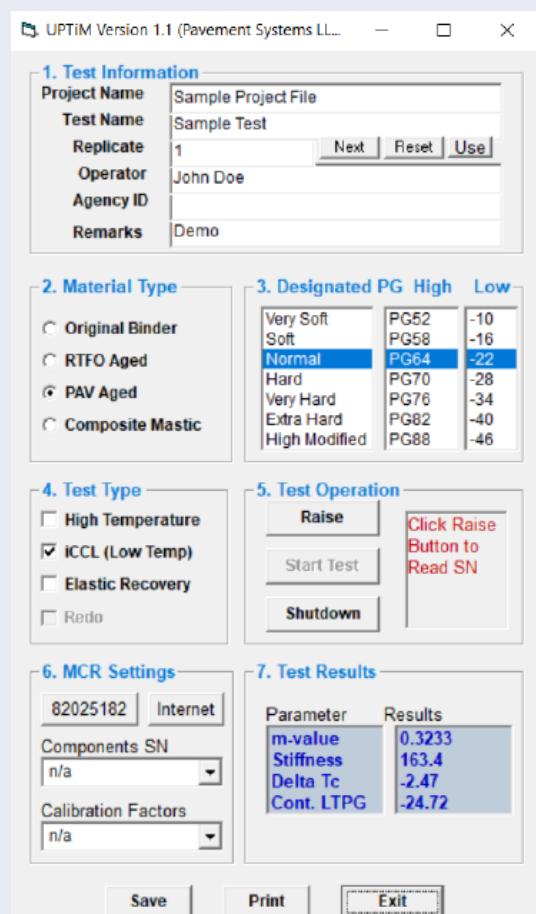


# Upgrade Your DSR

With a range of innovative technologies, our Modular Compact Rheometer series (MCR) guarantees accuracy, repeatability, convenience, and ease of use in asphalt and bitumen rheology.

Now you can benefit from our partnership with Pavement Systems: the innovators behind the UPTiM™ system and the minds who helped shape today's asphalt standards. Their track record includes developing the SUPERPAVE binder PG grade selection algorithms, the LTPPBind software, the AASHTO T 410 (iRLPD) standard, and the Pulsative DSR testing method for binders and mastic composites.

Working together, we'll ensure you get reliable rheological data on every asphalt binder you test.



## UPTiM™ – unified performance testing using incremental methodology by Pavement Systems, LLC

UPTiM™ is a breakthrough asphalt testing methodology that covers mixtures, binders, and composite mastics. The tests are fully automated with software developed and maintained by Pavement Systems LLC.

### iCCL™ testing system

The system consists of a Modular Compact Rheometer (e.g., MCR 53, MCR 73, MCR 303 or SmartPave) and the intuitive RheoCompass software combined with the unique iCCL™ software developed by Pavement Systems LLC. It provides quick, reliable measurements of the low-temperature PG of liquid binders – equivalent to a BBR.

### iCCL™ setup

→ Rheometer: MCR Modular Compact Rheometer  
→ Accessories: Peltier-controlled lower plate (e.g., P-PTD 220/AIR) plus active Peltier-controlled hood (e.g., H-PTD 200/AIR)  
→ Measuring geometry: parallel plate PP08 plus lower plate S-LP08 (Ø 8 mm)  
→ Temperature calibration set according to AASHTO T315  
→ RheoCompass software (from Anton Paar)  
→ iCCL™ software (from Pavement Systems, LLC)

### iCCL™ features

→ Software: all test calculations are performed by the unique iCCL™ software  
→ Auto-Trim sample mounting: The iCCL™ software uses patented AutoTrim technology to automatically shape and mount binder samples exactly to AASHTO T315 specifications – eliminating manual trimming entirely  
→ Minimal cleaning: easy cleaning – no organic solvent required  
→ iCCL™ is a green technology: it encourages use of recycled materials, and can be used for quick testing of small amounts of extracted binder to determine the effect of recycled materials

### Benefits of iCCL™

- Continuous low-temperature performance grading (PG) of asphalt binder
- Provides m-value and stiffness for PG+4, PG+10 temperatures, and  $\Delta T_c$
- Significant savings on testing time, effort, and cost
- Can test either PAV-aged or RTFO-aged binders for greater efficiency.
- Fully automated, user-friendly testing procedure
- Quick and reliable screening tool for QA/QC
- Minimal technician training required
- Reliable, affordable testing device
- Increased productivity
- Improved accuracy
- Enhanced safety

# iCCL™ – Incremental Creep for Cracking at Low Temperatures



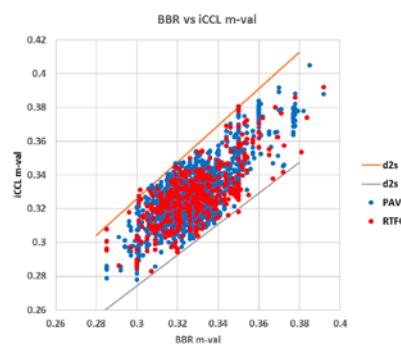
One of UPTiM™'s tests, iCCL™, is a low-temperature binder test procedure for determining continuous PG equivalent to the Bending Beam Rheometer (BBR).

In about 30 minutes, iCCL™ provides continuous low-temperature PG (LTPG), m-value (m), stiffness (S), and  $\Delta T_c$  equivalent to BBR (AASHTO T 313). iCCL™ is an alternative test method according to AASHTO PP 112 (2019), and it is significantly faster, safer, more reliable, and less costly than traditional BBR methods.



# Time To Compare

If you compare a traditional BBR to our new iCCL™ method, the difference is unmistakable: iCCL™ delivers dramatically higher precision. Our results are backed by an unprecedented data set: more than 2,211 binders tested across 24 independent laboratories.



	BBR	iCCL™
Sample prep and testing/sample	2 hours	30 minutes (using either PAV-aged or RTFO-aged binders)
Continuous grade	Requires 2 tests	Only 1 test needed
Technician time/sample	2 hours	5 minutes
Binder aging	PAV	RTFO, PAV
Continuous PG multi-laboratory d2s	2.1 °C	1.3 °C
Calibration check	Every day	Every 3 months
Use of hazardous liquids	Coolant	None
Testing original binder	N/A	Possible
Air pressure	Yes	None
Sample storage limit	2 hours	None
Molding/demolding	Required	None

Trademarks: SmartPave (16731556), RheoCompass (9177015)

## Reliable. Compliant. Qualified.



Our well-trained and certified technicians are ready to keep your instrument running smoothly.

Maximum uptime | Warranty program | Short response times | Global service network

