Update of TS 2b Activities

Committee on Materials & Pavements

ETG Binder Meeting Bozeman, MT
September 19, 2017

New Proposed Practice

- Removal of the Elastic Recovery graph from M 332 Multiple Stress Creep Recovery Specification.
- Big Debate
  - Didn’t see the need.
  - Didn’t want to have to specify another standard.
  - Some would have to amend their current specifications.
- Was there a Champion for this move?
- Will possibly have to consider keeping in M 332
  - What would be the best way to do so?

Proposed New Task Forces

- Task Force 17-01:
  - Re-write T 228 which is currently a “C” standard.
  - Members are:
    - Leslie White (Montana), Maria Knake (AASHTO), and Georgene Geary (AASHTO Consultant).
- Task Force 17-02:
  - Looking at developing a new standard for long term aging, the determination of ΔT_c and a practice explaining how to use ΔT_c.
  - Members are:
    - Lyndi Blackburn (AL), Chris Peoples (NC), Anne Holt (ON), Tim Ruelke (FL), Rick Bradbury (ME), Brett Haggerty (TX), Bob Horan (Asphalt Institute), Denis Boisvert (NH), Jack Youtchef (FHWA), and Matt Corrigan (ETG liaison).

Precision & Bias

- This need was raised at the last ETG meeting.
- Task Force was already in place to look at T 350 – MSCR test.
- AASHTO RE:source provided data for the following standards:
  - T 313 – Bending Beam Rheometer
  - T 315 – Dynamic Shear Rheometer
  - T 316 – Rotational Viscosity
  - T 350

T 313 - BBR

- **Proposed**

Creep Stiffness	1s%	d2s%
Single Operator	2.149	6.08167
Multi-laboratory	5.0025	14.15708

- **Current**

Condition	Coefficient of Variation (1s%)[a]	Acceptable Range of Two Test Results (d2s%)[a]
Creep Stiffness (MPa)		
Single-Operator Precision:	2.5	7.2
Multilaboratory Precision:	6.3	17.8

T 313- BBR

Proposed

Slope (m- value)	1s%	d2s%
Single Operator	0.9298	2.631334
Multi-laboratory	2.054	5.81282

Current

Condition	Coefficient of Variation (1s%)[a]	Acceptable Range of Two Test Results (d2s%)[a]
Slope (*m*-value)		
Single-Operator Precision:	1.0	2.9
Multilaboratory Precision	2.4	6.8

T 315 – DSR Original

- Proposed

	1s%	d2s%
Single Operator	1.6405	4.642615
Multi-laboratory	3.618	10.23894

- Current

Condition	Coefficient of Variation (1s%)[a]	Acceptable Range of Two Test Results (d2s%)[a]
DSR - ORIGINAL		
Single-Operator Precision:	2.3	6.4
Multilaboratory Precision	6.0	17.0

T 315 – DSR RTFO

- Proposed

	1s%	d2s%
Single Operator	2.549	7.21367
Multi-laboratory	5.95455	16.85138

- Current

Condition	Coefficient of Variation (1s%)[a]	Acceptable Range of Two Test Results (d2s%)[a]
DSR - RTFO		
Single-Operator Precision:	3.2	9.0
Multilaboratory Precision	7.8	22.2

T 315 – DSR PAV

- Proposed

	1s%	d2s%
Single Operator	3.9495	11.17709
Multi-laboratory	9.6975	27.44393

- Current

Condition	Coefficient of Variation (1s%)[a]	Acceptable Range of Two Test Results (d2s%)[a]
DSR - PAV		
Single-Operator Precision:	4.9	13.8
Multilaboratory Precision	14.2	40.2

T 316- Rotational Viscosity

- Proposed

	1s%	d2s%
Single Operator	0.95185	2.693736
Multi-laboratory	3.7155	10.51487

- Current

Condition	Coefficient of Variation (1s%)[a]	Acceptable Range of Two Test Results (d2s%)[a]
Rotational Viscosity (Avg.)		
Single-Operator Precision:	4.9	13.8
Multilaboratory Precision	14.2	40.2

T 350 Multiple Stress Creep Recovery

- AASHTO RE:source

Recovery @ 0.1 kPa	1s	d2s
Single Operator	1.167127	3.302971
Multi-laboratory	3.561974	10.08039

- TS 2b Task Force

Recovery @ 0.1 kPa	1s	d2s
Single Operator		5.5
Multi-laboratory		10.2

T 350 Multiple Stress Creep Recovery

- AASHTO RE:source

Recovery @ 3.2 kPa	1s	d2s
Single Operator	1.423699	4.029069
Multi-laboratory	3.067984	8.682394

- TS 2b Task Force

Recovery @ 3.2 kPa	1s	d2s
Single Operator		6
Multi-laboratory		14.5

T 350

- Percent Difference in Recovery

	1s	d2s
Single Operator	1.481639	4.193037
Multi-laboratory	4.489717	12.7059

T 350 Multiple Stress Creep Recovery

- AASHTO RE:source

Jnr @ 0.1 kPa	1s	d2s
Single Operator	4.035	11.41905
Multi-laboratory	10.436	29.53388

- TS 2b Task Force

Jnr @ 0.1 kPa	1s	d2s
Single Operator		14.7
Multi-laboratory		31.7

T 350 Multiple Stress Creep Recovery

- AASHTO RE:source

Jnr @ 3.2 kPa	1s	d2s
Single Operator	0.073446	0.207853
Multi-laboratory	0.698131	1.975711

- TS 2b Task Force

Jnr @ 3.2 kPa	1s	d2s
Single Operator		14.5
Multi-laboratory		34.2

T 350 Multiple Stress Creep Recovery

- AASHTO RE:source

Percent Diff in Jnr	1s%	d2s%
Single Operator	4.55	12.8765
Multi-laboratory	21.6375	61.23413

- TS 2b Task Force

Percent Diff in Jnr	1s	d2s
Single Operator		29.1
Multi-laboratory		48.4

Other Minor Business

- Adding T 240 - RTFO to the P&B
- T 48 –Cleveland Cup - Updating the figures.
- R 15 – Additives, etc. - Comments were addressed after having made the editorial changes received through the ballot.
- TP 102 – Release Agents -Moving forward with changes received through TS ballot.
- M 332 MSCR Specification - Moving forward with changes to terminology that addressed NV's concerns.
- R XX - This will move forward after having found the PA negative non-persuasive.
- MP XX - Performance Graded Surface Treatments

Comments and Suggestions

- Lyndi D. Blackburn, P.E.

  Assistant State Materials & Tests Engineer

  - blackburnl@dot.state.al.us