

Binder Task Group - 2012

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Multiple Stress Creep Recovery (MSCR) Task Force Overview and Recommendations

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MSCR Task Force Report

- **Overview**

- What is Multiple Stress Creep Recovery (MSCR) test?
- Purpose of MSCR Task Force activities
- Task Force WebEx meetings and topics

- **MSCR Recovery Study**

- **Recommendations**

- Adopt MSCR Recovery as PG Plus test (TXDOT)
- Adopt MP 19 (LA DOT)



What is MSCR?

- MSCR (*pronounced massacre*)
- The MSCR test is a laboratory test for measuring high temperature properties of an asphalt binder which:
 - can replace the existing high temp. test for short term aged binder in M 320 ($G^*/\sin\delta$)
 - can better relate predicted laboratory polymer-modified binders' high temp properties to actual rutting performance of in-service pavements



MSCR Advantages

- J_{nr} is better correlated with rutting potential than $G^*/\sin\delta$
 - Lab research
 - Field Studies
- May eliminate the need for “PG Plus” tests for modified binders
 - Elastic Recovery, Phase Angle, etc.



Barriers to Implementation?

- AI believes that MSCR is an advancement in technology that can replace the existing high temp. test in M 320 ($G^*/\sin\delta$)
- However, barriers exist to implementation
 - Lack of manpower to do necessary transitional testing to validate MSCR test and specifications
 - Lack of suitable DSR equipment and software
 - Concern about how MSCR will affect binder supply and polymer modification
 - Lack of guidance from regional partners/ suppliers



MSCR Task Force

- Purpose?
 - To move evaluation of MSCR test and specification forward
 - To provide a resource and information for all SEAUPG states
 - To identify and address any barriers to implementation
 - To conduct MSCR ILS (Round Robin)
 - To consider possible implementation of MSCR in the future



WebEx Meetings

- MSCR TF has met 12 times using WebEx
- Meetings are well attended and interest is good
- Early WebEx meetings provided background
- Later WebEx meetings included more technical presentations, interpretation of data; ILS analysis; MSCR Recovery study; discussion of implementation



AI Website: MSCR Information

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asphaltinstitute.org/public/engineering/mscr-information.dot



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Free [Webinar](#):

- [Understanding the MSCR Test and its Use in the PG Asphalt Binder Specification](#)

Guidance Documents

- [AI's Guidance Document on MSCR Implementation](#) (PDF 419 kb)
- [AI's Guidance Document on using MSCR with AASHTO M320](#) (PDF 344 kb)
- [FHWA Tech Brief on the MSCR Procedure](#) (PDF 771 kb)
- [SEAUPG - Use of MSCR to Replace PG Plus Tests](#) (PDF 44 kb)
- [SEAUPG - Guidance for Evaluation of MSCR Recovery to Replace PG Plus Tests](#) (PDF 83 kb)

Research Papers

- [NEAUPG MSCR ILS Final Report with Appendix](#) (PDF 1.1 mb)
- [SEAUPG MSCR ILS Final Report with Appendix](#) (PDF 476 kb)

Presentations

- [Why We Need MSCR](#) (PDF 1.89 mb)

Research & Lab

Engineering

Education

- Some barriers to implementation have been addressed
 - Several states have purchased new DSRs
 - States are becoming more familiar with performing the MSCR testing (ILS, MSCR Recovery study, AMRL proficiency, etc)
 - Suppliers have been performing MSCR testing of their products
 - AI Guidance documents have been developed and provided



Recent Activities

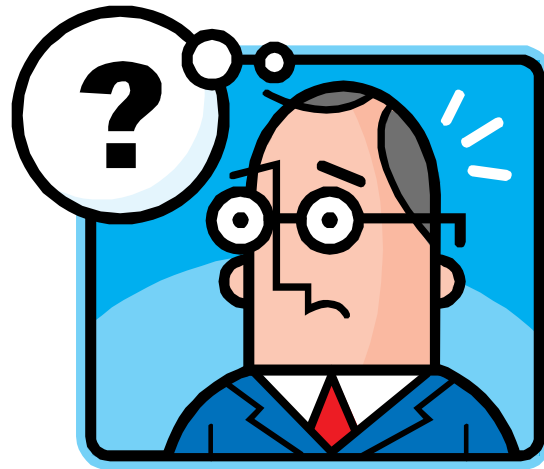
- Florida DOT announced their decision to adopt MP 19 on July 2013
- LA DOT – Recommended that SEAUPG Adopt MP 19
- TX DOT – Recommended that SEAUPG Adopt MSCR Recovery as a replacement for PG Plus tests



Summary – MSCR Task Force

- Significant progress has been made since MSCR Task Force was formed two years ago
- All 14 SEAUPG states are now participating
- WebEx meetings continue to be well attended by suppliers/ states
- Latest activity: MSCR Recovery study
- States are starting to propose implementation





Questions? Discussion?



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