



SUBCOMMITTEE ON MATERIALS
100th Annual Meeting – Minneapolis, Minnesota
Monday July 28, 2014
3:15 pm – 5:00 pm CST

TECHNICAL SECTION 5c
Quality Assurance, Data Evaluation and Acceptance Plans

- I. **Call to Order and Opening Remarks**
 - A. **Meet the new Vice Chair, Tim Aschenbrener**

- II. **Roll Call**

- III. **Approval of Technical Section Minutes**
 - A. **The Mid-Year Webinar Meeting Minutes were distributed. Limited copies available at the meeting or displayed on the screen.**
 - i. **Motion to approve by OK (Seider). Seconded by TX (Haslett). Motion passes.**

- IV. **Old Business**
 - A. **Previous Year SOM Ballot Items**
 - i. **PP80 Provisional Practice for Continuous Thermal Profile of Asphalt Mixture Construction**
 1. **Comments from the Mid-Year Webinar were included in the final to-be-published version**
 2. **Presentation by Greg Johnson, MnDOT Assistant Bituminous Engineer**

MOBA Pave-IR. Only maker of this product in the United States. Scans thermal profiles at the screed of the paver. The infrared bar is located at 12-inch intervals behind the paver on the screed and reads every 6 inches during paving. Produces a thermal image profile. There is also a scanner that obtains a continuous thermal profile. The Minnesota DOT requirement is to evaluate the thermal profile segments every 150 feet. It is classified as “good” if the range is <25F, “moderate” if the range is 25 to 50F and “severe” if the range is >50F. Also equipped with GPS and can use VEDA for geospatial software plotting. Gives the paver operator real-time temperature readings. Examples were shown of various projects and the thermal imaging that was the result. Results are sensitive to paver speed, paver stoppage, type of haul unit (end dump vs. belly dump), and the use of a material transfer vehicle or elevating loader. There was also an explanation of the incentive structure for using this technology. Each “good” segment receives a \$20 incentive and each “severe” segment receives a \$20 disincentive. Discussions about failure triggers in other states. Questions about targeted coring to check the densities in severe areas. MN will be looking at this in the coming year. It is pointed out that this provisional standard is only intended to help collect the data. A

specification has not been included. A question is asked about seeing differences in thicker layers. MN only puts down 1 ½ and 2 inch layers.

- ii. PP 81 Provisional Practice for Intelligent Compaction for Embankment and Asphalt Applications
 - 1. Negative vote by Virginia was addressed prior to preparing final version for publication
 - 2. Presentation by Rebecca Embacher, MnDOT Advanced Materials and Technology Engineer
 - a. To date they have had 35 projects. They now select projects that are longer than 8 miles. Intelligent compaction offers several advantages. Three of these were discussed. First, this is a visualization tool to promote uniformity. It is a GPS attached to a paver that uses software to visualize what sections of the pavement have been rolled and how many times. Roller operators tend to lose track of how many times they have rolled a section. This allows operators to see exactly where they have rolled. Before IC and after IC charts are shown to demonstrate how the operator can make mistakes when rolling. Can make sure the pavement is not over-rolled and can make sure the coverage is overlapped. Examples are shown from different job sites. Second, this is a tool to optimize compaction. Roller operators do not spend too much time on areas that have already achieved the appropriate stiffness and can spend more time on areas that are under compacted. Third, it has been very helpful for the start and end of paving. These areas typically don't receive enough attention and are now getting more focus. This is only a QC specification with a goal of uniformity. MNDOT has no plans to use this to measure compaction for acceptance. This standard does not include information about the interpretation of data. A question was asked about whether the uniformity translates to more uniform density. MN plans to look at that this aspect this year. Question about what kinds of materials were analyzed. MN has been using this from earthwork up. A short explanation of Veda is given. Agency resources had to be increased for the design of plans, construction field survey, construction inspection with rovers, etc. It is a way to import data into mapping software. MN is preparing a pooled fund study to complete the software. Interested parties should contact Curt Turgeon (MN).

B. Previous Year TS letter ballots

- i. Recap from Mid-Year Webinar
 - 1. R38-10, R25-00 and R9-05 were all reconfirmed

C. Task Force Reports

- i. Tech Section 4a Standard Practice for the Evaluation Acceptance of Precast Concrete Products update
 - 1. No update is given. This is currently in 4a, but may eventually end up in 5c.

V. New Business

A. Research Proposals

- i. None given. 20-7 task 349 awarded to Diversified Engineering Services, Inc. Cecil Jones, P.I. Research began on May 1, 2014. NCHRP 10-92 was awarded to Hill International. Sid Scott, P.I. This is to optimize risk and acceptance. One of the recommendations may be for a risk-based materials testing frequency plan. Literature review and national survey of QA practices have been completed. Follow up interviews with selected agencies are underway.

B. AMRL/CCRL Issues

- i. None

- C. NCHRP Issues
 - i. NCHRP Project 20-7(349) Synthesis Topic – Materials Acceptance for Non-Traditional contracts
 - 1. Proposals have been ranked, awaiting contract initiation
- D. Correspondence, calls, meetings/ Presentation by Industry
 - i. None
- E. Proposed New Standards
 - i. None
- F. Proposed New Task Forces
 - i. None
- G. Standards Requiring Reconfirmation
 - i. None
- H. SOM Ballot Items (including any ASTM changes)
 - i. None

VI. Open Discussion

- A. None**

VII. Adjourn

Motion to adjourn by (CA) Stolarski. Seconded by (FL) Ruelke. Motion passes. Meeting adjourned.

Technical Section 5c

Quality Assurance, Data Evaluation, and Acceptance Plans

Scope: It shall be the responsibility of Technical Section 5c to develop or promote the development of standards for control and acceptance of materials used in the construction of highway facilities, to serve as the focal point for metrication of SOM standards, and to assist the other technical sections of SOM in addressing statistical issues. (Steward)

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|----------------|---|
| R 9-05 (2014) | Acceptance Sampling Plans for Highway Construction (Dvorak, FHWA) |
| R 10-06 (2011) | Definition of Terms for Related to Quality and Statistics As Used in Highway Construction

(Old Title: Definition of Terms for Specifications and Procedures) |
| R 25-00 (2014) | Technician Training and Qualification Programs |
| R 38-04 (2014) | Quality Assurance of Standard Manufactured Materials |
| R 42-06 (2011) | Developing a Quality Assurance Plan for Hot-Mix Asphalt (HMA) (Gallivan, FHWA) |
| R 44-07 (2012) | Independent Assurance (IA) Programs (Krieder, KS) |
| R 61-12 | Establishing Requirements for Equipment Calibrations, Standardizations and Checks (Sheehy, NJ) |
| PP 80 | Continuous Thermal Profile of Asphalt Mixture Construction (Turgeon, MN) |
| PP 81 | Intelligent Compaction Technology for Embankment and Asphalt Pavement Applications (Turgeon, MN) |

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Attendance Sheet

Name	Employer	Email Address	Phone Number	Member of TS?	Would you like to join this TS?
<input checked="" type="checkbox"/> Turgeon, Curt	Minnesota Department of Transportation	curt.turgeon@state.mn.us	651 274 6887	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Aschenbrenner, Tim	Federal Highway Administration	timothy.aschenbrenner@dot.gov	720 963-3247	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Rothblatt, Evan	American Association of State Highway and Transportation Officials	erothblatt@aaashto.org	702-624-3648	<input type="checkbox"/>	<input type="checkbox"/>
Johnson, Brian	AASHTO Material Reference Laboratory	bjohnson@amrl.net		<input type="checkbox"/>	<input type="checkbox"/>
Lenker, Steven E.	AASHTO Material Reference Laboratory	slenker@amrl.net		<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Rutz, Robert	AASHTO Material Reference Laboratory	rlutz@amrl.net		<input type="checkbox"/>	<input type="checkbox"/>
Knake, Maria	AASHTO Material Reference Laboratory	mknake@amrl.net		<input type="checkbox"/>	<input type="checkbox"/>
San Angelo, Michael	Alaska Department of Transportation and Public Facilities	michael.sanangelo@alaska.gov		<input type="checkbox"/>	<input type="checkbox"/>
Hurguy, Bill	Arizona Department of Transportation	bhurguy@azdot.gov	602 722 9799	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Benson, Michael	Arkansas State Highway and Transportation Department	michael.benson@arkansashighways.com	501-569-2185	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stolarski, Phil J	California Department of Transportation	phil.stolarski@dot.ca.gov	916-227-7016	<input checked="" type="checkbox"/>	<input type="checkbox"/>
R, Schiebel Bill	Colorado Department of Transportation	bill.schiebel@state.co.us	303-398-6501	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Connelly, James P. James P. Connelly	Connecticut Department of Transportation	James.Connelly@ct.gov		<input type="checkbox"/>	<input type="checkbox"/>

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Name	Employer	Email Address	Phone Number	Member of TS?	Would you like to join this TS?
<i>RF</i> Lauzon, Robert G	Connecticut Department of Transportation	robert.lauzon@ct.gov	860 258 0312	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>MC</i> Corrigan, Matthew	Federal Highway Administration ✓	matthew.corrigan@dot.gov ✓	202.366.1549	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Gallivan, Victor (Lee)	Federal Highway Administration	victor.gallivan@dot.gov		<input type="checkbox"/>	<input type="checkbox"/>
Smith, Michael	Federal Highway Administration	michael.smith@dot.gov		<input type="checkbox"/>	<input type="checkbox"/>
Arasteh, Michael	Federal Highway Administration	michael.arasteh@dot.gov		<input type="checkbox"/>	<input type="checkbox"/>
Dvorak, Dennis V	Federal Highway Administration	dennis.dvorak@dot.gov		<input type="checkbox"/>	<input type="checkbox"/>
Doyle, Gregory	Federal Highway Administration	gregory.j.doyle@dot.gov		<input type="checkbox"/>	<input type="checkbox"/>
Ruelke, Timothy J.	Florida Department of Transportation	timothy.ruelke@dot.myflorida.com	(352) 955-6620	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Georgene M. JT Rabun Nakamura, JoAnne	Georgia Department of Transportation	ggearney@dot.ga.gov jrabun@dot.ga.gov	404.608.4740	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Walker, Ronald P.	Hawaii Department of Transportation	joanne.nakamura@hawaii.gov		<input type="checkbox"/>	<input type="checkbox"/>
Kreider, Richard E.	Indiana Department of Transportation	rwalker@indot.in.gov		<input type="checkbox"/>	<input type="checkbox"/>
Abadie, Christopher David	Kansas Department of Transportation	richard.kreider@ksdot.org		<input type="checkbox"/>	<input type="checkbox"/>
Alley, Mark D	Louisiana Department of Transportation and Development	Chris.Abadie@la.gov	225-248-4131	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bradbury, Richard L	Maine Department of Transportation	mark.alley@maine.gov		<input type="checkbox"/>	<input type="checkbox"/>
Hood, Woodrow L.	Maine Department of Transportation	Richard.Bradbury@maine.gov		<input type="checkbox"/>	<input type="checkbox"/>
	Maryland Department of Transportation	whood@sha.state.md.us		<input type="checkbox"/>	<input type="checkbox"/>

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For Strzich, Matt AM OAK METCALFE Syslo, Mick	Montana Department of Transportation Nebraska Department of Roads	mstrzich@mt.gov Mick.Syslo@nebraska.gov	406-444-6297	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sheehy, Eileen	New Jersey Department of Transportation	eileen.sheehy@dot.state.nj.us		<input type="checkbox"/>	<input type="checkbox"/>
Burnett, Robert A.	New York State Department of Transportation	bburnett@dot.state.ny.us		<input type="checkbox"/>	<input type="checkbox"/>
Cowsert, Jack E.	North Carolina Department of Transportation	jcowser@ncdot.gov		<input type="checkbox"/>	<input type="checkbox"/>
Seiter, Scott	Oklahoma Department of Transportation	sseiter@odot.org	405-521-2186	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stellmach, Greg Frank	Oregon Department of Transportation	greg.f.stellmach@odot.state.or.us		<input type="checkbox"/>	<input type="checkbox"/>
Mullis, Cole F.	Oregon Department of Transportation	cole.f.mullis@odot.state.or.us	6-3115	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Felag, Mark E	Rhode Island Department of Transportation	mark.felag@dot.ri.gov		<input type="checkbox"/>	<input type="checkbox"/>
Lane, Danny L.	Tennessee Department of Transportation	danny.lane@tn.gov	615-350-4175	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hazlett, Darren	Texas Department of Transportation	darren.hazlett@txdot.gov	512-416-2456	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Andrus, Scott	Utah Department of Transportation	scottandrus@utah.gov		<input type="checkbox"/>	<input type="checkbox"/>
Babish, Charles A.	Virginia Department of Transportation	andy.babish@vdot.virginia.gov		<input type="checkbox"/>	<input type="checkbox"/>
Gillispie, Aaron C.	West Virginia Department of Transportation	aaron.c.gillispie@wv.gov		<input type="checkbox"/>	<input type="checkbox"/>

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Name	Employer	Email Address	Phone Number	Member of TS?	Would you like to join this TS?
Lane, Becca	Ontario Ministry Of Transportation	Becca.Lane@ontario.ca		<input type="checkbox"/>	<input type="checkbox"/>
Russell Dabbs	AASHTO	rdabbs@aashto.org	202-624-7743	<input type="checkbox"/>	<input type="checkbox"/>
TIM SMITH	MARYLAND DOT	TSMITH2@SHA.STATE.MD.US	443-572-5037	<input type="checkbox"/>	<input type="checkbox"/>
David Ahlvers	MO DOT	david.ahlvers@modot.mo.gov		<input type="checkbox"/>	<input checked="" type="checkbox"/>
TIM RAMIREZ	PENNSYLVANIA DOT	tramirez@pa.gov	717-783-6602	<input checked="" type="checkbox"/>	<input type="checkbox"/>
BILL BAILEY	VIRGINIA DOT	BILL.BAILEY@VDOT.VIRGINIA.GOV	804-328-3102	<input type="checkbox"/>	<input type="checkbox"/>
Steve Krebs	Wisconsin DOT	Steven.Krebs@dot.wi.gov	608 296-1932	<input type="checkbox"/>	<input type="checkbox"/>
Judith Corley-Lay	NC DOT	jlay@ncdot.gov	919 835 8201	<input type="checkbox"/>	<input type="checkbox"/>
Chris Kufner	MUDOT	Chris.Kufner@state.ma.us		<input type="checkbox"/>	<input type="checkbox"/>
JACK SPRINGER	FHWA-LTRP	Jack.Springer@dot.gov	202-493-3144	<input type="checkbox"/>	<input type="checkbox"/>
JEFFSONERS	RKT	jseiders@rkt.com	5129079171	<input type="checkbox"/>	<input checked="" type="checkbox"/>
JACK YOUTZ-HUFF	FHWA	JACK.YOUTZ.HUFF@DOT.DOV	202 493-3090	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BOB HORAN	ASPHALT INSTITUTE	bhoran@asphaltinstitute.org	531-3036	<input type="checkbox"/>	<input type="checkbox"/>
Panabaker, Hal	DuPont	hal.j.panabaker@dupont.com		<input type="checkbox"/>	<input type="checkbox"/>
Robert Dingels	GTMA	rdingels@usgtma.com	540 752 9800	<input type="checkbox"/>	<input type="checkbox"/>
PAUL FARLEY	WV DOH	PAUL.M.FARLEY@wv.gov	304-558-7491	<input checked="" type="checkbox"/>	<input type="checkbox"/>

PROXY FOR ANDY BRADISH



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Name	Employer	Email Address	Phone Number	Member of TS?	Would you like to join this TS?
Kevin Kliewer	FHWA	Kevin.Kliewer@dot.gov	651 291 4123	<input type="checkbox"/>	<input type="checkbox"/>
John Bukowski	FHWA	john.bukowski@dot.gov	202-364 1287	<input type="checkbox"/>	<input type="checkbox"/>
DELMAR SALOMON, PAVEMENT PRESERVATION SYSTEMS, LLC		delmar@technpane.com	208 672.1977	<input type="checkbox"/>	<input type="checkbox"/>
David Shelstad	Moba	dsbelstad@moba.de	770 490 8358	<input type="checkbox"/>	<input type="checkbox"/>
Paul Angerhofer	Moba	pangerwater@moba.de	770 634.0058	<input type="checkbox"/>	<input type="checkbox"/>
JOHN GABRY	MnDOT	JOHN.GABRY@STATE.MN.US	651 366.5577	<input type="checkbox"/>	<input type="checkbox"/>
Greg Schiebet	Kansas DOT	gregs@ksdot.org	785-291-3856	<input type="checkbox"/>	<input type="checkbox"/>
Greg Uherek	AASHTO/AMRL	gurek@amrl.net	240-436-4840	<input type="checkbox"/>	<input type="checkbox"/>
DICK REAVES	TROXLER	dreaves@troxlerlabs.com	919-819-4551	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Emeka Ezeke	FHWA	nnaemeka.ezeke@dot.gov	651 291 6108	<input type="checkbox"/>	<input type="checkbox"/>
Andy Mergenmeier	FHWA	andy.mergenmeier@dot.gov	410 962.0091	<input type="checkbox"/>	<input type="checkbox"/>
Glenn Engstrom	MnDOT	glenn.engstrom@state.mn.us	651-366 5531	<input type="checkbox"/>	<input type="checkbox"/>
Pennis Dvorak	FHWA	dennis.dvorak@dot.gov	708 203-3542	<input type="checkbox"/>	<input type="checkbox"/>
DAVE SAVAGE	CMEC	davesavage@cmecc.org	407 756 8105	<input type="checkbox"/>	<input type="checkbox"/>
CHUCK PAUGH	ESC Inc	chuck.paugh@dot.gov	202-366 6640	<input type="checkbox"/>	<input type="checkbox"/>

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 Lisa Zigmund@dot.state.oh.us
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