

# Wisconsin Department of Transportation

## 2019 Materials Training Concrete Updates

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draft

# Optimized Aggregate Gradation and Mixtures

- **Currently a Wis.DOT STSP**

- Should be inserted into all contracts that require slip-form paving.

- **2018 Construction**

- Very few questions on its use and application.
- Positive feedback from contractors that used it.
- Good results when reduced cementitious of 520 lbs/c.y. was used. Didn't seem to affect opening strengths.

- **The future of OAG**

- Pavements: Remaining as a STSP for 2019 Construction. Optional to the contractor with incentives
- Structures: BTS is considering applying the shadow specification to structures also. Committee pending.

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# Flexural Strength Beams

- Used on some interstate and large projects in 2018.
- SPV available for use and recommended on projects:
  - With gravel aggregate sources.
  - $\geq 20,000$  s.y of slip-formed pavement on an Interstate or USH.
- Contact BTS to discuss prior to including on a project.
- Statewide implementation is still being vetted within the department. No date set for full implementation.

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# Stringless Paving

- Was used on multiple projects in 2018.
- Inserted into contracts via ASP6 beginning with December 2018 LET's.
- Could be in 2020 standard specifications.

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# MIT-SCAN-T2

- **Common questions:**

- **Allowable difference between multiple measurements at the same location by the same user with 1 device?**
  - 0.8%. 12" Pavement would be 2mm.
- **Allowable difference between 2 gauges and/or 2 users?**
  - 1.3%. 12" Pavement would be 4mm.

- **Temps**

- **Operating range: 23° to 122°**
- **Storage range: 14° to 122°**

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# 2018 CONCRETE UPDATES MIT-SCAN-T2

## •Repairs

### ▪Batteries.

- Ni-Mh. Can be overcharged or over-discharged. Try and charge once per month when needed.
- Devices have to be shipped to VA or Germany.
- Broken knuckle at the head of the lower unit repair cost is \$1,400.

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# SAM – Super Air Meter

- WHRP project currently under way which will be completed in 2019.
- Shadow specification used during the 2018 construction season.
- Wis.DOT currently owns 8 SAM's. 6 Additional units will be purchased in FY2019.
- No concrete timeline set for standard specification implementation.
- The department is going to discuss moving the shadow specification into structure contracts beginning with the Dec 2019 LETs.
- 2019 – one test required per lot.

# 2019 CONCRETE SPEC UPDATES

- **415.3.20(2) – UrbanJoints required to be filled**
  - Construction joints to be sawed at least  $\frac{3}{4}$ " before filling.
- **501.2.5.4.2(1) – Chert vs. Lightweight pieces**
  - Chert language replaced with Lightweight.
  - Must perform and enter test results from AASHTO T113 to be listed for concrete use.
- **502.3.10.1.3.3(3) – Maturity Probes**
  - Probe represents all concrete prior to its placement.

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# 2019 CONCRETE SPEC UPDATES

- **504.2 – Cast in place vs precast structures**
  - Concrete for cast in place structures remains the same.
  - Concrete for precast structures must conform to ASTM C1577 and be manufactured in a plant on the departments APL.
- **505.2.6 – Dowel Bars**
  - Tubular dowels and alternative HP dowels added starting with March ASP-6.

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# Part 7 - QMP

## • Section 701 – General

- **Must obtain engineer approval before making process or material changes that differ from approved QC plan.**
- **QC plan must include unique aggregate identifier.**
- **Documentation submittals:**
  - Same-Day submittals not required.
  - Electronic requirement removed.

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## Part 7 - QMP

- **Section 715 – Concrete Pavement and Structures**

- **SAM shadow testing add to standard specifications.**
- **QV testing updated to 1 per 5 QC tests.**
- **Report QV test results to the contractor within 2 days.**

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# Part 7 - QMP

- **Section 716 – Ancillary Concrete**

- **Base Patching testing frequency changed to every 100cy for air and slump and every 200cy for cylinders.**

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# Questions

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