

# SUDAS Revision Submittal Form

Status Date: As of 5/12/2026 Topic: Concrete updates  
Manual: Specifications Manual Location: Section 7010

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## Requested Revision:

### 1.08 MEASUREMENT AND PAYMENT

#### A. PCC Pavement:

Change also applies to E, F, G, & K

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- 3. Includes:** Unit price includes, but is not limited to, final trimming of subgrade or subbase, integral curb, bars and reinforcement, joints and **sealing filling**, surface curing and pavement protection (excluding cold weather protection; see Section 7010, 1.08, N), safety fencing, concrete for rigid headers, boxouts for fixtures, pavement smoothness testing, and quality control for stringless paving.

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### 2.01 MATERIALS

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#### L. Joint Fillers ~~and Sealers~~:

- 1. Joint Sealers ~~Fillers~~:** Comply with [Iowa DOT Article 4136.02](#).

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- M. Liquid Curing Compound:** Comply with [Iowa DOT Section 4105](#) and furnish from an approved supplier listed in [Iowa DOT Materials I.M. 405](#), Appendix A ([MAPLE](#)).

### 2.02 CONCRETE MIXES

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#### B. Consistency and Workability:

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- 2. Air Content:** Use an approved air entraining agent.
  - For machine-placed pavement, use a target air content of 8% with a tolerance of plus or minus 2% when measured on the grade just prior to consolidation, as determined by [Iowa DOT Materials I.M. 318](#). The target air content may be adjusted by the Engineer based on random tests of the consolidated concrete behind the paving machine. **When random testing is performed, test a minimum of twice per day (the first load and midway through the placement)**. These additional tests will be used to consider the need for a target value change and will not be used in the acceptance decision.
  - For hand-placed pavement, use a target content for hand finish of 7% with a tolerance of plus or minus 1.5% when measured on the grade and just prior to consolidation, as determined by [Iowa DOT Materials I.M. 318](#).

#### C. Use of Fly Ash and Ground Granulated Blast Furnace Slag (GGBFS) as Supplementary Cementitious Materials:

- Mix proportions for the various mixes using fly ash and GGBFS are included in [Iowa DOT Materials I.M. 529](#). The maximum allowable fly ash substitution rate is 20%. Do not use a GGBFS substitution rate of more than 35% by weight (mass). The total supplementary cementitious material substitution rate is not to exceed ~~40%~~ **50%**.
- If C-SUD or CV-SUD mixes are specified, the maximum allowable Class F fly ash substitution rate is 25% and the maximum Class C fly ash substitution rate is 35%. The maximum combination rate is 20% Class C fly ash and 20% GGBFS.
- When Type IP, IT, or IS cement is used in the concrete mixture, only fly ash substitution will be allowed. Between October 16 and March 15, use of Type IL cement with fly ash and

GGBFS or Type IP, IS, or IT cement with fly ash will be allowed only when maturity method is used to determine time of opening. Transport, store, haul, and batch fly ash and GGBFS in such a manner to keep it dry.

### 3.01 EQUIPMENT

#### A. Batching and Mixing Equipment:

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#### 3. Mixing:

##### a. Construction ~~or Stationary~~ Mixer:

- 1) Ensure the concrete is uniform in composition and consistency. If this condition is not produced because of the size of the batch, the size of the batch may be reduced or the mixing time increased, or both, until this result is obtained. If non-uniform, corrective action must be taken.
- 2) Ensure the methods of delivering and handling the concrete are such that objectionable segregation or damage to the concrete will not occur, and they will facilitate placing with a minimum of handling.

##### b. Central or Stationary On-site Mixed Concrete:

- 1) Ensure central or stationary mixer has all required Iowa DOT certifications and calibration reports. The certified plant inspector will monitor the plant.
- 2) Ensure the concrete is uniform in composition and consistency. If non-uniform, concrete producers must take corrective action.
- 3) Central or stationary on-site mixed concrete is defined as concrete proportioned in a central plant set-up to service a single project and mixed in a stationary mixer for transportation in trucks without agitation, proportioned at a central plant, and only partially mixed in a stationary mixer for transportation and finish mixing in a transit mixer, or proportioned at a central plant, and then mixed in a transit mixer prior to or during transit.
- 4) Ensure each delivery vehicle is capable of discharging concrete having a slump not over 2 inches at an overall rate for its entire load of not less than 1.25 cubic yards per minute. Ensure the concrete is delivered at a rate sufficient to maintain a sustained rate of progress of not less than 100 feet per hour for the width and depth of pavement to be placed.

##### ~~bc.~~ Ready Mixed Concrete:

- 1) Ensure the concrete is uniform in composition and consistency. If non-uniform, concrete producers must take corrective action.
- 2) ~~Ready mixed concrete is defined as concrete proportioned in a central plant and mixed in a stationary mixer for transportation in trucks without agitation, proportioned at a central plant, and only partially mixed in a stationary mixer for transportation and finish mixing in a transit mixer, or proportioned at a central plant, and then mixed in a transit mixer prior to or during transit.~~ Ready mixed concrete is defined as concrete proportioned in a plant set up to service multiple projects with different mix requirements, and mixed in a stationary mixer for transportation in trucks without agitation. The concrete can either be proportioned at a wet batch plant, only partially mixed in a stationary mixer for transportation and finishing in a transit mixer, or proportioned at a dry batch plant, and then mixed in a transit mixer prior to or during transit.
- 3) When necessary to add additional mixing water at the site of placement, mix the batch at least an additional 30 revolutions of the drum at mixing speed.
- 4) Ensure each vehicle in which concrete will be delivered is capable of discharging concrete having a slump not over 2 inches at an overall rate for its entire load of not less than 1.25 cubic yards per minute. Ensure the concrete is delivered at a rate sufficient to maintain a sustained rate of progress of not less than 100 feet per hour for the width and depth of pavement to be placed.

- ed. **All Methods:** Identify each truck load by a plant charge ticket showing plant name, contractor, project data, quantity, class, time batched, and water added at site.

**C. Concrete Placement Equipment:**

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- 8. **Joint Sealing Filling Equipment:** Use equipment capable of cleaning the joint and heating and installing sealant filler in joints according to manufacturer's recommendations.

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**3.02 PAVEMENT CONSTRUCTION**

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**I. Finishing:**

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**5. Surface Treatment:**

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- b. **Longitudinal Surface Tining:** ~~When surface tining is specified, use a longitudinal tining. Under special circumstances, when specified in the contract documents, transverse tining may be required.~~

**1) Longitudinal:**

- a1) Complete longitudinal surface tining using a machine with a wire broom or comb. For small or irregular areas, or during equipment breakdown, hand methods may be used. Use a broom or comb with a single row of tines 1/8 inch (+/- 1/64 inch) in width and uniformly spaced at 3/4 inch intervals. The depth of the grooves must be a minimum of 1/8 inch to a maximum of 3/16 inch in the plastic concrete.
- b2) Use equipment with horizontal and vertical string line controls to ensure straight grooves.
- e3) Conduct this operation at such time and in such manner that the desired surface texture will be achieved while minimizing displacement of the larger aggregate particles and before the surface permanently sets.
- e4) At longitudinal joints, leave a 2 to 3 inch wide strip of pavement surface (centered along the joint) that is not grooved for the length of the joint.

**2) Transverse:**

- a) ~~If transverse surface tining is required or allowed, use a machine with a wire broom or comb. For small or irregular areas, or during equipment breakdown, hand methods may be used. Use a broom or comb with a single row of tines 1/8 inch (+/- 1/64 inch) in width and randomly spaced from 3/8 inch to 1 5/8 inch with no more than 50% of the spacing exceeding 1 inch. The depth of the grooves must be a minimum of 1/8 inch to a maximum of approximately 3/16 inch in the plastic concrete.~~
- b) ~~Conduct this operation at such time and in such manner that the desired surface texture will be achieved while minimizing displacement of the larger aggregate particles and before the surface permanently sets.~~
- e) ~~Where abutting pavement is to be placed, the tining should extend as close to the edge as possible without damaging the edge.~~
- d) ~~If abutting pavement is not to be placed, do not tine the 6 inch area nearest the edge or 1 foot from the face of the curb.~~

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**J. Surface Curing:**

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- 6. If, due to other operations, the coating is damaged within 72 hours after being applied, immediately re-coat the affected areas. Coating of the sawed surface with curing compound will not be allowed on joints that are to be sealed filled. When pavement is opened to traffic prior to 72 hours after application of the curing coating, a re-coating will not be required.

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## L. Joint Sealing Filling:

### 1. Timing:

- a. Unless otherwise allowed or approved by the Engineer, before any portion of the pavement is opened to the Contractor's equipment or to general traffic, clean ~~and seal~~ joints that require ~~sealing~~ filling.
- b. The Engineer may limit the wheel loads and axle loads of equipment operating on the pavement during this operation, if prior to the age and strength specified in Section 7010, 3.05. Additional tests to determine the pavement strength may be required.

### 2. Cleaning:

- a. For those joints that are not to be ~~sealed~~ filled, cleaning is not required.
- b. Within 3 hours after a joint has been wet sawed to the finished dimension, flush the wet sawing residue away from the sawed faces using a high pressure water blast operating with a minimum pressure of 1,000 pounds per square inch. Within 3 hours after a joint has been dry sawed to the finished dimension, blow the dry sawing residue from the joint using air compressors that provide moisture and oil free compressed air.
- c. Immediately prior to installation of ~~sealant~~ filler, clean joints with an air blast. Do not perform ~~sealing~~ filling until visual examination verifies the joint surfaces appear dry, in addition to being clear of dust and contamination.

### 3. Sealing Filling:

- a. Prepare and install joint ~~sealer~~ filler in the joint and to the proper level specified in the contract documents and as recommended by the manufacturer.
- b. Heat hot-poured ~~sealers~~ filler in a thermostatically controlled heating kettle; heat the material to the temperature required for use, but not above that recommended by the manufacturer. After ~~sealing~~ filling, remove excess ~~sealer~~ filler from the pavement surface.
- c. ~~Seal Fill~~ joints the same day they are cleaned. Apply ~~sealant~~ filler only when the joint surfaces appear dry by visual examination.
- d. Place joint ~~sealer~~ filler only when the pavement and ambient air temperatures are 40°F or above. When near this minimum, additional air blasting or drying time, or both, may be necessary to ensure a satisfactory bond to the joint faces. When this ~~sealer~~ filler cannot be properly placed due to late fall work, submit a joint construction plan and ~~sealing~~ filling details to the Engineer for approval before commencing paving. Delay the cleaning, ~~sealing~~ filling, and, if required, resawing of joints until the following spring. This delay requires the Engineer's approval.
- e. When surface correction is required, repair ~~seals~~ filler damaged from the corrective work. Joint preparation, cleaning, and ~~sealing~~ filling may be delayed until after corrective work, provided the pavement is not opened to traffic before corrective work is performed.

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## 3.04 PAVEMENT PROTECTION

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### 2. Hot Weather:

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- c. If the evaporation rate exceeds 0.1 pounds per square foot per hour but is less than 0.3 pounds per square foot per hour, provide the following concrete evaporation protection.
  - 1) ~~Immediately apply an approved evaporation retarder to the concrete pavement and curbs or~~ Increase the surface cure application to 1.5 times the standard specified rate. ~~After initial floating, immediately apply an approved evaporation retarder to the concrete pavement and curb.~~

### 3.05 USE OF PAVEMENT

Time for opening pavement for use is determined by maturity method complying with [Iowa DOT Materials I.M. 383](#) or age and test results. The minimum age and test results needed for opening are shown in Table 7010.01.

**Table 7010.01: Minimum Age and Tested Strength of Pavement Before Opening**

Class of Mix	Type of Cement	Minimum Age For Opening <sup>1</sup>	Minimum Compressive Strength (psi)	Minimum Flexural Strength Center Point (psi)
C	Type I	7 Days <sup>2</sup>	3,000	500
M	Type I	48 Hours	3,000	500

<sup>1</sup> Opening without testing only allowed upon approval of Engineer

<sup>2</sup> Five calendar days for concrete 9 inches thick or more. If maturity testing is used to determine opening, minimum flexural strength may be lowered to 350 psi if approved by the Engineer.

### 3.07 QUALITY CONTROL

**Table 7010.02: Material Certifications and Testing**

Material or Construction Item	Tests	Applicable Standard <sup>1</sup>	Methods of Acceptance of Sampling and Testing	Field Sampling and Testing	
				Frequency (minimum)	Responsible Party
Fine Aggregates	Gradation	<a href="#">I.M. 302, 306, 336</a>	Cert. Plant Insp. <sup>2</sup>	1/250 CY or min 1/day	Supplier/ Contractor
	Moisture	<a href="#">I.M. 308, 527</a>	Cert. Plant Insp. <sup>2</sup>	1 per 1/2 day	
	Specific Gravity	<a href="#">I.M. 307</a>	Cert. Plant Insp. <sup>2</sup>	1/250 CY or min 1/day	
	Quality	<a href="#">I.M. 209</a>	Approved Source	Prior to use	
Coarse Aggregates	Gradation	<a href="#">I.M. 302, 306, 336</a>	Cert. Plant Insp. <sup>2</sup>	1/250 CY or min 1/day	
	Moisture	<a href="#">I.M. 308, 527</a>	Cert. Plant Insp. <sup>2</sup>	1 per 1/2 day	
	Specific Gravity	<a href="#">I.M. 307</a>	Cert. Plant Insp. <sup>2</sup>	1/250 CY or min 1/day	
	Quality	<a href="#">I.M. 209</a>	Approved Source	Prior to use	
Portland Cement	Quality	<a href="#">I.M. 401</a>	Approved Source	Prior to use	
Fly Ash	Quality	<a href="#">I.M. 491.17</a>	Approved Source	Prior to use	
GGBFS	Quality	<a href="#">I.M. 491.14</a>	Approved Source	Prior to use	
Curing Compound	Quality	<a href="#">Iowa DOT Section 4105</a>	Approved Source	Prior to use	
Joint Sealer Filler	Quality	<a href="#">I.M. 436.01</a>	Approved Source	Prior to use	
Epoxy Dowel Bars and Assemblies	Quality	<a href="#">I.M. 451.03B</a>	Approved Source	Prior to use	
Tie Bars	Quality	<a href="#">I.M. 451</a>	Approved Source	Prior to use	
Plastic Concrete	Air Content <sup>4</sup>	<a href="#">I.M. 318, 327</a>	Field Test	1/200 CY or min. 1/day	Engineer
	Slump <sup>5</sup>	<a href="#">I.M. 317</a>	Field Test	1/200 CY or min. 1/day	
	Cylinders	<a href="#">I.M. 315</a>	Field Test	Set of 3/500 CY or two sets/day	
	Beams	<a href="#">I.M. 316, 327, 328</a>	Field Test	Set of 3/500 CY or two sets/day	
	Thickness	-----	Field Test	1/200 CY	
Hardened Concrete	Smoothness	SUDAS 7010, 3.07	Field Test - Straightedge	Project length	Contractor
	Smoothness	SUDAS 7010, 3.07	Field Test - Inertial Profiler	Project length	
	Thickness	SUDAS 7010, 3.07	Field Test	1 core/1000 SY or 3 cores/project	
	Strength	<a href="#">I.M. 383</a>	Maturity Tests <sup>3</sup>	Prior to placement	

<sup>1</sup> Refers to the Iowa DOT Materials I.M.s, Iowa DOT Standard Specifications, or SUDAS Standard Specifications.

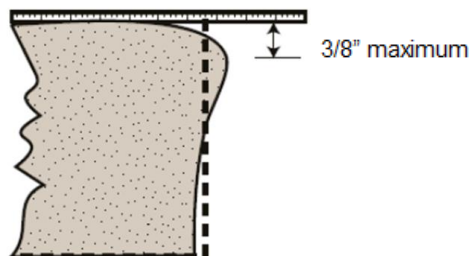
<sup>2</sup> Certified plant inspection per [Iowa DOT Materials I.M. 527](#).

<sup>3</sup> The Contractor is responsible for developing the maturity curve for the specified mix, taking maturity readings, and delivering a copy of the results to the Engineer.

<sup>4</sup> If central or stationary on-site mixed concrete is being used and air content and consistency are being monitored as required at the mixing site, field testing can be reduced to 1/500 CY or minimum 1 per day.

<sup>5</sup> Slump testing is not required for slipform paving operations. Edge slump of the pavement behind the paver will be monitored by the Contractor and the Inspector.

**C. Edge Slump:** Edge slump behind the paver will be observed to ensure proper stiffness of the concrete mix. If the Engineer notes the pavement is slumping, it will be measured to verify. For pavement without a curb, edge slump must be less than 3/8 inch as measured below. For curbed profiles, ensure the horizontal deviation measured from a point equal to the proposed curb height plus 4 inches does not exceed 1/2 inch from a vertical level placed at the top edge of the back of curb. In cases of the edge slump exceeding the maximum allowable, immediately adjust the concrete stiffness.



**Reason for Revision:** Requested revisions from the concrete industry.

**Comments:** None.

**Region:**  Central  East  West **2/19/2026 Webinar**

- Comments:**
- Delete #4 under the central plant item. *Note - done.*
  - One request to leave transverse tining in.
  - Not sure about the parking lot smoothness sentence. *Note - removed per April meetings.*
  - Availability of contractors who can perform high speed profilameters. *Note - no longer included in the proposal per April meetings.*
  - Liked having the straightedge requirement for those area where smoothness is not required but they notice an issue. *Note - no longer included per April meetings.*

**Region:**  Central  East  West

- Comments:**
- No heartburn about removing transverse tining
  - Edge slump (C) - could measure height of the curb. *Note - revised per red strikethrough/green highlighting above.*
  - Parking lot smoothness statement - DELETE. Come back with new language in the future. *Note - done.*
  - Pavement smoothness irregularities - go back to the original language for letter D.

**Action:**  Deferred  Not Approved  Approved

**Region:**  Central  East  West

- Comments:**
- 3/8 inch seems too tough
  - Approved through letter C.

**Action:**  Deferred  Not Approved  Approved

**Region:**  Central  East  West

- Comments:**
- Smoothness - is a timeline needed? 5 days is too tight; 14 days too tight for city projects with multiple phases.
  - Approved through letter C.

**Action:**  Deferred  Not Approved  Approved

**Final Regional Action Summary:** All 3 regions approved; see comments above.

**Board of Directors Action:** Approved