

Administration and Inspection Activities for Hot Mix Asphalt Paving

(As Specified in OPSS 313)

313.01 SCOPE

This CAIS covers the construction administration and inspection requirements for the placement, compaction, and acceptance of Hot Mix Asphalt (HMA) and HMA produced using Warm Mix Asphalt (WMA) technology as specified in OPSS 313, April 2021.

313.02 REFERENCES

This CAIS refers to the following standards, specifications, or publications:

Ontario Provincial Standard Specifications, Construction:

OPSS 313 Hot Mix Asphalt - End Result

MTO Standard Special Provisions:

~~SSP 103F01 Amendment to OPSS 313 - Replacement Specification for Hot Mix Asphalt - End Result~~

~~SSP 103F02 Amendment to OPSS 313 - Submission and Production Requirements~~

SSP 103F03 Amendment to OPSS 313 - Paving in Echelon and Partial Paving of Full Pavement Width

Construction Administration and Inspection Specifications (CAIS):

CAIS 308 Construction Specification for Tack Coating and Joint Painting

CAIS 1101 Material Specification for Performance Graded Asphalt Cement

CAIS 1151 Material Specification for Superpave and Stone Mastic Asphalt Mixtures

MTO Forms:

PH-CC-139 Sample Identification

~~PH-CC-260 Payment Adjustment for Changes in the Price Index of Performance Graded Asphalt Cement~~

PH-CC-847 ~~Year-End Summary for Hot Mix~~ Hot Mix Summary Worksheets

PH-CC-859 Non-Conformance Report (NCR)

PH-CC-866 Application for Field Adjustment to JMF

PH-CC-868-D ERS - Hot Mix Asphalt Payment Calculation ~~(A, B, C & D, QA)~~

PH-CC-869 ERS - Thickness Payment Adjustment Calculation

PH-CC-870 Lift Thickness Measurement Recording Form

MTO Guidelines:

Field Guide for the Acceptance of Hot Mix Asphalt and Bridge Deck Waterproofing

313.03 DEFINITIONS

For this CAIS, the definitions shall be as specified in OPSS 313.

313.04 DESIGN AND SUBMISSION REQUIREMENTS

313.04.01 Submission Requirements

Administrative Activities:

1	M	Prior to the start of paving, Receive and Review the purchase price of AC, in the form of a purchase order or other document signed by the Contractor's senior financial officer.	-
2	-	Receive the production schedule if the Contractor intends to store hot mix production in a silo.	-
3	-	Prior to the start of paving on bridge decks, Receive and Review the mass of the rollers and the minimum compaction temperature for HMA or WMA recommended by the AC supplier. Check that Class V (vibratory) rollers are not used on a bridge deck.	-
4	-	Receive and Review a copy of the Technical Data Sheet and Safety Data Sheet for release agent(s) being used by the Contractor. Petroleum based release agents shall not be used.	-
6	-	Submit the mix design that conforms to the Contract Documents in a single PDF document. For non- WBCMSCMS Contracts, submit to the Regional Quality Assurance Section, the Contract Services Administrator, and bituminous@ontario.ca .	-

313.05 MATERIALS

313.05.01 Hot Mix Asphalt

Administrative Activities:

1	-	HMA material requirements (mix design, additives and mixture preparation) shall be administered according to CAIS 1151.	-
2	-	Complete PH-CC-847 for each approved mix design prior to the end of the calendar year, <u>or completion of the Work</u> . Record the forms on WBCMSCMS .	-

313.05.02 Tack Coat

Administrative Activities:

1	-	Tack coat placement shall be administered according to CAIS 308.	-
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313.05.03 Release Agents

Inspection Activities:

1	-	Check that petroleum-based release agents, excess water, or excess release agents are not used.	25%
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313.05.04 Warm Mix Asphalt

Inspection Activities:

1	-	Check the temperature of the WMA <u>mat</u> behind the paver.	25%
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Administrative Activities:

1	-	Administer WMA materials according to CAIS 1151.	-
2	-	Receive and Review all information for the proper preparation, handling, storage, and use of the WMA materials from the Contractor. Check that this information was obtained from the WMA technology supplier.	-

313.05.05 Grit for Stone Mastic Asphalt

Inspection Activities:

1	-	Check that grit material complies with the Contract Documents requirements.	100%
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313.06 EQUIPMENT**313.06.01 Rollers**

Inspection Activities:

1	-	Check that the rollers used for finish rolling of granular grade and compaction on bridge decks are as specified in OPSS 313 on a daily basis.	100%
2	-	Determine if the rollers need to be weighed prior to use on a bridge deck.	100%
	-	If the rollers need to be weighed, request that the Contractor weigh the rollers to be used on the bridge deck. Witness the operation.	100%

313.06.02 Diamond Grinding

Inspection Activities:

1	-	Check that the diamond grinder is as specified in OPSS 313 on a daily basis.	100%
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313.07 CONSTRUCTION

313.07.01 Quality Control

Inspection Activities:

1	-	Check that the Contractor's QC sampling complies with OPSS 313 or any agreement between the Contractor and the Contract Administrator for additional sampling.	50%
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Administrative Activities:

1	-	Review requests from the Contractor to take additional core samples for Quality Control (QC) purposes.	-
	-	Notify the Contractor of the decision.	-

313.07.02 Laboratory Correlations

Administrative Activities:

1	-	When a correlation of mix properties, or compaction, or both between the Quality Assurance (QA) and QC laboratories is requested by the Contractor prior to placement of HMA, coordinate the correlation process according to OPSS 313.	-
2	-	Receive all samples and information required to conduct the correlation testing from the Contractor.	-
3	-	Provide the QA test results to the Contractor on completion of the correlation testing.	-

313.07.03 Preparation of Foundation and Existing Pavement

Inspection Activities:

1	-	Check that the foundation preparation complies with OPSS 313.	50%
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313.07.04 Correction of Pavement Beneath Surface Courses

Inspection Activities:

1	-	Check that pavement corrections comply with the Contract Documents.	50%
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313.07.06 Transportation of Hot Mix Asphalt

Inspection Activities:

1	-	Check and Record, in the Bituminous Diary, the temperature of the mix delivered to the site.	100%
2	-	Check that the temperature of the mix delivered to the site does not fall below the minimum temperature recommended by the PGAC supplier.	100%

313.07.07 Placing Hot Mix Asphalt

Inspection Activities:

1	-	Check proper joint construction including location of longitudinal joints, preparation, tack coating and compaction.	100%
2	-	Check that paving is carried out full width to approximately the same station each day. Check that ramp downs are as specified in OPSS 313 and the Contract Documents.	100%
3	-	Check the condition of substrata (example: compaction) ahead of the paving operation. Confirm surface to be paved is unfrozen, clean, dry, and free of standing water.	100%
4	-	Check sequence of paving operations including: paving intersections, tapers, ramps, bridge decks and all staging plans.	100%
5	-	Check that paving in echelon is as specified in OPSS 313 and the amending special provision.	100%
6	M	Check placement of hot mix including alignment, crossfall, surface tolerance, surface appearance, width, smoothness, depth of asphalt mat using the area covered and applicable BRD for the mix (kg/m ²) or other applicable Contract related field checks (such as for the m ² payment method).	100%
	M	Ensure pictures are taken, documented and issued in accordance with the CAIS Management of Deliverables.	100%
7	M	Measure the width of the section to be paved.	100%
8	-	For paving on bridge decks, Check that a minimum of 4 hours has elapsed following completion of the waterproofing system.	50%
9	-	For multiple lifts of HMA, Check that the mat has sufficiently cooled, complying with OPSS 313, before the next course is placed.	100%

10	M	Check that the ambient air temperature complies with OPSS 313.	100%
11	-	Check that the WMA supplier's recommendations for placement are followed.	50%
12	-	Check that the public traffic is not permitted on freshly laid HMA until the temperature requirements of OPSS 313 are met.	100%
13	-	Check that the construction of the longitudinal and transverse joints comply with OPSS 313 and Contract Documents.	100%
14	M	Check that the HMA paving complies with OPSS 313 and Contract Documents.	100%
15	-	Check that partial paving of the full pavement width is as specified in OPSS 313 and the amending special provision.	100%

Administrative Activities:

1	-	If the Contractor fails to prevent continued medium or severe segregation, Notify the Contractor to cease paving until the problem is corrected.	-
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313.07.08 Field Adjustments to the Job Mix Formula

Administrative Activities:

1	-	Receive the application for field adjustment to JMF on PH-CC-866. Review the application for compliance with the requirements specified in OPSS 313.	-
2	-	Within 1 Business Day of receipt of the JMF adjustment, Notify the Contractor confirming conformance or advising of non-conformance.	-
3	-	Receive and Review the adjustments to the JMF according to OPSS 313.	-

313.07.09 Sampling

Inspection Activities:

1	M	Check that all required sampling is carried out according to the Contract Documents and maintain continuous possession of the samples until they are sealed and delivered to the Owner's designated laboratory.	100%
2	M	Check that all required samples are taken at correct (random) locations and tonnages. Complete and include PH-CC-139 with all samples.	100%
3	-	Check that each sample bag has the date, the security seal code, and all other relevant information written using a regular permanent magic marker.	100%
4	-	Check that the thickness cores include all lifts of measurement by square metre hot mix placed in the subplot, plus an underlying lift, if one exists.	100%

5	M	Check that holes resulting from the removal of compaction and thickness core samples are cleaned, dried and filled with the approved material to the same HMA and compaction requirements as the adjacent undisturbed pavement.	100%
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Administrative Activities:

1	-	Determine the AC sampling program according to CAIS 1101. If the WMA technology requires that additives be added to the AC, samples of the AC shall be taken after the additive has been added.	-
2	-	Establish the HMA aggregate sampling program for QA density testing according to OPSS 313.	-
3	-	The results of the most recent QA density tests should be used in the determination of Voids in Mineral Aggregate (VMA).	-
4	-	Receive, Review and reply to requests, from the Contractor, for adjusted aggregate sampling intervals for QA density testing.	-
5	-	Prior to paving, Determine the HMA loose mix sampling program for QA mix properties testing according to OPSS 313.	-
6	-	Determine the HMA core sampling program for QA compaction testing according to OPSS 313 and the amending special provision.	-
7	-	Upon completion of each subplot, Notify the Contractor of the random sample location for compaction cores to be taken.	-
8	-	For HMA tender items measured by square meters, Determine the HMA core sampling program according to OPSS 313.	-
9	-	Upon completion of each subplot, Notify the Contractor of the random sample location for compaction cores to be taken.	-
10	-	For SMA, Prior to the start of paving, Determine the loose mix sampling program for QA draindown testing according to OPSS 313.	-
11	-	For WMA, establish the loose mix sampling program for QA moisture sensitivity testing according to OPSS 313.	-
12	-	If the release agent is suspected of deleterious effect on the HMA, Notify the Contractor and take request a 1-liter sample <u>from the Contractor.</u>	-
13	-	Arrange for delivery of all samples to the Owner's designated laboratory, as specified in the Contract Documents.	-

313.07.10 Identification of Warm Mix Asphalt Paving Limits

Administrative Activities:

1	-	When WMA is used, receive and Review the GPS coordinates for the WMA paving limits from the Contractor.	-
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2	-	Report the GPS coordinates of the WMA paving limits in the Year-End Summary for Hot Mix Worksheets Summary PH-CC-847.	-
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313.08 QUALITY ASSURANCE

313.08.01 Acceptance Criteria

Inspection Activities:

1	-	Test all observable irregularities in the pavement surface for compliance with the surface tolerance requirements of OPSS 313.	100%
2	M	Check the mix placed for all observable deficiencies including: flushing, bleeding, segregation, fat spots, surface damage, cracking, chatter, dragging or surface contamination. Prior to covering with another lift and/or stage changes. Notify the Contractor to remove and replace or repair visibly deficient work. Otherwise, assess a payment reduction according to OPSS 313.	100%
3	-	Once segregation is noticed, assess the severity according to OPSS 313. Notify the Contractor according to OPSS 313.	100%
4	-	Check that equipment does not impact or damage areas beyond the shoulder.	50%
5	-	Conduct random spot checks of the width of each binder and surface course HMA lift for acceptance according to OPSS 313.	50%

Administrative Activities:

1	-	Determine the acceptability of the HMA based on the criteria and requirements specified in OPSS 313.	-
2	-	After discussion with the Contractor and before HMA production for the tender item starts, Determine that the size and location of the lots and sublots for mix properties and compaction testing comply with OPSS 313.	-
3	-	Determine lots and sublots for bridge decks as specified in OPSS 313.	-
4	-	When a delay of more than 20 Business Days occurs in placing the complete lot, receive and Check the Contractor's written request to resume paving the remaining lot. Notify the Contractor if the request is acceptable in accordance with OPSS 313.	-
5	-	Receive the Contractor's notification in writing, if the Contractor elects to place an optional surface trial. Review the notification for compliance with the requirements of OPSS 313.	-
6	-	If the Contractor requests that an allowance be made for the impact of the WMA and AST on a PGAC grade for the QA or referee purposes, receive, Review and Reject or Accept such a request depending on compliance with the requirements of OPSS 313.	-

7	M	Receive and Review all test results from the QA laboratory for acceptance based on the requirements in OPSS 313. Complete PH-CC-870 and record it on WBCMSCMS .	-
8	M	Determine QA payment factors for each lot or subplot using the requirements in OPSS 313 as well as the appropriate End Result Specification sheets. Record Bituminous ERS Sheets on WBCMS in Excel format.	-
9	M	Notify the Contractor of acceptance at full price, acceptance with a payment adjustment or rejected lots/sublots.	-
10	M	Receive, Review and accept or reject requests from the Contractor for referee testing for a given lot depending on compliance with OPSS 313.	-
11	M	Receive and Review requests from the Contractor for an individual value for any attribute of a subplot's test result to be considered an outlier. Accept or reject the request, depending on compliance with OPSS 313.	-
12	-	Notify the Contractor of mid-lane segregation as specified in OPSS 313.	-
13	-	Receive and Review a Contractor's challenge of severity of segregation complies with OPSS 313 for resolving the Contractor's challenge.	-
14	-	Notify the Contractor of unacceptable pavement width as specified in OPSS 313. Receive and Review a written proposal for corrective action from the Contractor.	-

313.08.02 Repairs

Inspection Activities:

1		Check that HMA repairs are as specified in OPSS 313	100%
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Administrative Activities:

1	-	Receive and Review Contractor's Non-Conformance Report (PH-CC-859) including a proposal for repair for conformance to the requirements of OPSS 313. Determine if the repair proposal is acceptable and Notify the Contractor.	-
2	-	Conduct QA testing of the repaired areas and evaluate for acceptance according to OPSS 313.	-

313.09 MEASUREMENT FOR PAYMENT

Administrative Activities:

1	-	Measurement for payment shall be as specified.	-
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313.10

BASIS OF PAYMENT

Administrative Activities:

1	-	Basis of payment shall be as specified.	-
2	-	Complete PH-CC-869 – <u>ERS for thickness pay factor calculation</u> .	-
3	-	<p>Complete the applicable version of PH-CC-868-D – <u>ERS for HMA payment calculation</u>. The version of PH-CC-868 selected must correspond to the Special Provision issued with the Contract as identified below:</p> <p>PH-CC-868-A shall be used for Contracts with SSP 103F01. PH-CC-868-B shall be used for Contracts with SSP 103F02. PH-CC-868-C shall be used for Contracts with SSP 103F03 and a tender opening date in 2017. PH-CC-868-D shall be used for Contracts with SSP 103F03 and a tender opening date in 2018 or later.</p> <p>Contracts with other special provisions (or non-standard special provisions) that amend or modify OPSS 313 require the forms <u>as downloaded from MTO Technical Publication website</u>. provided by the Bituminous Section of MTO.</p>	-
4	=	<u>Complete PH-CC-260 – Payment Adjustment for Changes in the Price Index of Performance Graded Asphalt Cement</u>	=

WARRANT: Always with OPSS 313, Construction Specification for Hot Mix Asphalt - End Result.