Administration and Inspection Activities for Repairing Concrete Pavement and Concrete Base with Precast Concrete Slabs

(As Specified in OPSS 363)

363.01 SCOPE

This CAIS covers the construction administration and inspection requirements for repairing concrete pavement and concrete base with precast concrete slabs as specified in OPSS 363, November 2025.

363.02 REFERENCES

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

Ontario Provincial Standard Specifications, Construction:

OPSS 363 Repairing Concrete Pavement and Concrete Base with Precast Concrete Slabs

Ontario Provincial Standard Specifications, Material:

OPSS 1350 Concrete – Materials and Production
OPSS 1355 Precast Concrete – Materials and Production

Construction Administration and Inspection Specifications (CAIS):

CAIS 366 Repairing Concrete Pavement and Concrete Base
CAIS 369 Sealing or Resealing of Joints and Cracks in Concrete Pavement and Concrete Base
CAIS 510 Removal
CAIS 929 Abrasive Blast Cleaning - Concrete Construction
CAIS 1355 Precast Concrete – Materials and Production

MTO Forms:

PH-CC-322 Concrete Construction Report
PH-CC-885 Concrete Referee Testing Request

363.03 DEFINITIONS

For the purposes of this CAIS, the definitions shall be as specified in OPSS 363.

363.04 DESIGN AND SUBMISSION REQUIREMENTS

363.04.01 Design Requirements

Administrative Activities:

1	-	Check that the design of the precast concrete slabs and other materials is as specified in OPSS 363.	-

363.04.02 Submission Requirements

363.04.02.01 Precast Concrete Slab Repair Plan

Administrative Activities:

1	-	Check the precast concrete slab repair plan is received as specified prior to the start of the trial or start of the work if the trial is not required.	-
2	-	Review the details and Check for compliance as specified.	-

363.04.02.02 Flowable Fill Mix Design - Michigan Method

Administrative Activities:

1	-	When flowable fill is used as a levelling material, Check that flowable fill mix design is received as specified prior the trial or start of work if the trial is not required.	-
2	-	Review the mix design and Check for compliance as specified.	-

363.04.02.03 Proprietary Patching Materials - Product Details

Administrative Activities:

1	-	Check that the product details and information for proprietary patching material (PPM) are received as specified prior to the trial or start of work if a trial is not required.	-
2	-	Review the product details and information and Check for compliance and acceptance as specified.	-

363.04.02.04 Bedding Grout Mix Design – Fort Miller Super-Slab® Method

Administrative Activities:

1	-	When bedding grout is used, Check that the bedding grout mix design is received as specified prior the trial or start of work if the trial is not required.	-
2	-	Review the mix design and Check for compliance and acceptance as specified.	-

363.04.02.05 Chipping Hammaer

Administrative Activities:

1	-	Receive and Review the specifications for the chipping hammer, and Check that it is as specified in the Equipment section of OPSS 363.	-

363.04.02.06 Test Results for the Trial Precast Concrete Slab Repair

Administrative Activities:

1	-	Receive and Review the test results for the trial precast concrete slab repair, and Check that the results are as specified in OPSS 363.	-

363.05 MATERIALS

Administrative Activities:

1	-	Check that materials are as specified in OPSS 363.	-
2	-	Check that precast concrete slabs are as specified in OPSS 1355 in its entirety. For precast concrete slabs, additional inspection and administrative activities shall be as specified in CAIS 1355.	-

363.06 EQUIPMENT

Inspection Activities:

1	M	Check that equipment is as specified in OPSS 363.	25%

363.07 CONSTRUCTION

363.07.01 General

Inspection Activities:

1	M	Check that construction is as specified in OPSS 363 and the Contract Documents.	100%

363.07.02 Trials

Inspection Activities:

1	-	Check that the trial slab repair is conducted for both the intermittent slab and continuous slab, if applicable.	100%
2	M	Based on a visual assessment of the trial, Check that the Contractor has demonstrated the ability to conduct the slab repair. If acceptable, Notify the Contractor to proceed with the slab repair work. If rejectable, Notify the Contractor that additional trial slab shall be performed until the slab repair meets the requirement.	100%
3	M	Check unacceptable trial repair slabs are repaired, removed, or reinstated as required.	100%

Administrative Activities:

1	-	Check that the strength gain charts for PPM are developed.	-
2	M	Check that a notice from the Contractor specifying the location of trial slab repair is received as specified and the location is within the contract limits.	-
3	M	In lieu of a trial slab repair, the Contract Administrator may allow the Contractor to submit information demonstrating the ability to successfully conduct the slab repair using the same equipment, placing personnel, and methodology to meet the contract requirements from another MTO Contract within the specified time limit. Check and Review the information submitted and Notify the Contractor of acceptance/rejection.	-

363.07.03 Operational Constraints

Inspection Activities:

1	-	Check that perimeter saw cutting of the removal area is not carried out more than a specified day in advance of the expected repair date.	25%
2	-	Check that bedding grout and dowel grout are carried out as soon as possible after the installation of precast concrete pavement slab.	50%
3	-	Check that the flowable fill mix temperature and predicted ambient air temperature meet the specified requirement.	50%
4	-	Prior to the placement of PPM, Check that the Contractor demonstrates that the existing concrete temperature and the ambient air temperature meets the manufacturer’s recommendation and requirement for PPM placement.	50%
5	-	Check that construction vehicles, equipment, or traffic is not permitted onto the repair sections until PPM has achieved the required strength.	100%
6	-	Check if the precast concrete slab repair is progressing at a rate that will permit the full restoration of traffic within the allowable time period.	50%

Administrative Activities:

1	-	Receive notification from the Contractor of the intent to repair concrete pavement or concrete base 7 Days prior to commencement of repairs.	-
2	-	When the precast concrete slab replacement work rate does not allow for traffic restoration, communicate to the contractor that temporary measures need to be used to fully restore traffic in the timeline.	-
3	-	Review the Contractor's proposed measures and Notify the Contractor whether the plan is acceptable or unacceptable.	-

363.07.04 Removals

Inspection Activities:

1	M	Delineate the repair areas.	100%
2	-	Check that a template is used to delineate the area of removal within the specified accuracy.	100%
3	-	Check that outer limit of the removal area is clean and sawcut to full depth, and that cuts do not exceed the overcut requirement.	100%
4	-	Check that overcuts are filled with an epoxy resin acceptable to the Owner.	50%
5	M	Check that concrete removal is by lift-out method without damaging adjacent concrete or asphalt pavement or shoulders or disturbing the underlying base.	100%
6	-	When the adjacent concrete/asphalt is damaged due to the removal procedure, Check that repairs are as specified. Repairs shall be administered according to applicable components of CAIS 366. Review the proposed repair procedure for damaged adjacent asphalt, Notify the Contractor of acceptance or rejection.	100%

Administrative Activities:

1	-	Concrete removal shall be administered and inspected according to applicable components of CAIS 510.	-

363.07.05 Base Preparation

Inspection Activities:

1	M	Check that base preparation for the chosen method meets the base preparation requirements.	100%

363.07.06 Precast Concrete Slab Installation – Michigan Method

Inspection Activities:

1	M	Check that dowel bar slots are cut with gang saws as specified and not cause damage to the existing pavement.	100%
2	M	Check that slurry is removed from the slots and pavement after sawcutting, and that slots are not overcut.	100%
3	-	Check that the chipping hammer are used to remove concrete in dowel bar slots is consistent with that of the submitted work plan.	25%
4	M	Check that the concrete is removed to the bottom of the slot is level without damaging existing/adjacent concrete. If damage occurs, Check that repairs shall be as specified. Administration and inspecting of the repairs shall be according to CAIS 366.	100%
5	-	Check that all concrete surface within the slot are abrasive blast cleaned as specified. Abrasive blast cleaning shall be administered according to applicable components of CAIS 929.	100%
6	-	Check that the precast concrete slab installation is as specified, and the surface tolerances are within the specified tolerance.	100%
7	M	Prior to placing PPM, Check that all concrete surfaces within the slot meet the PPM's manufacturer requirements. Check that any standing water, dust and loose materials in the slots is removed with compressed air.	100%
8	-	Check that PPM mixing and application is as specified.	100%
9	-	Check that PPM consolidation, finishing, and curing is as specified.	100%

363.07.07 Precast Concrete Slab Installation – Fort Miller Super-Slab® Method

363.07.07.01 Dowel Bar and Tie Bar Installation

Inspection Activities:

1	-	Check that gang drills are used to drill dowel bar holes as specified without damaging adjacent pavement.	100%
2	M	Check that the drill holes are cleaned as specified.	100%
3	-	Check that epoxy adhesive is injected into cleaned drill holes as specified.	100%
4	M	Check that dowel and tie bars are inserted as specified.	100%

363.07.07.02 Precast Concrete Slab Installation

Inspection Activities:

1	M	Check that slabs are installed using the appropriate guide bars and not pry bars or wedges.	100%

2	M	Check that the vertical differential between slabs meet the specified requirement. If the vertical differential exceeds the maximum requirement. Check that an appropriate action is taken until the differential meet the requirement prior to moving on to the next slab.	100%
3	-	Check that incompressible shims are used if the repair section will be opened to traffic prior to grouting.	100%

363.07.07.03 Placing the Proprietary Patching Material

Inspection Activities:

1	-	Check that foam grout dams are installed at open ends of transverse joints.	25%
2	-	Check that PPM is being mixed as specified.	25%
3	-	Check that PPM is being pumped and levels are monitored as specified.	50%

363.07.07.04 Placing the Bedding Grout

Inspection Activities:

1	-	Check that bedding grout is installed after dowel grout.	50%
2	-	Check that bedding grout is mixed as specified.	25%
3	-	Check that bedding grout is being pumped as specified and that pressure is maintained until all voids under the slab are filled.	50%
4	M	Prior to the bedding grout fully sets, Check that the top 50 mm of bedding grout in each port is removed and replaced with PPM.	100%
5	-	Check that the PPM level is flush with the surface of the slab and all excess materials removed immediately.	50%

363.07.08 Tolerances

Inspection Activities:

1	M	Check that positions and alignment of dowel and tie bars are within the specified tolerances.	100%
2	M	Check that the surface tolerances are within the specified tolerance.	100%

363.07.09 Joint Sealing

Inspection Activities:

1	-	Joint sealing is inspected and administered according to CAIS 369.	50%

363.07.10 Materials Sampling and Testing

363.07.10.01 General

Inspection Activities:

1	-	Check that field sampling is performed by a person certified according to OPSS 1350.	100%
2	-	Check that samples are accompanied by a complete MTO form PH-CC-322.	100%
3	-	Check that materials sampling and testing is as specified in CAIS 1355 for precast concrete slabs.	100%

Administrative Activities:

1	-	Check that all test results are received as specified.	-
2	-	Check that test results for compressive strength, air void system and rapid chloride permeability are received as specified in CAIS 1355 for precast concrete slabs.	-

363.07.10.02 Compressive Strength of Flowable Fill

Inspection Activities:

1	-	Check that the flowable fill is sampled as specified.	100%
2	-	Receive the test specimens, as specified, and deliver to the designated laboratory.	100%

363.07.10.03 Bedding Grout

Inspection Activities:

1	-	Check that bedding grout is tested and sampled as specified.	100%
2	-	Provide stainless steel molds to the Contractor for preparing the 12-hour compressive strength specimens.	100%
3	-	Receive the test specimens, as specified, and deliver to the designated laboratory.	100%

363.07.10.04 Compressive Strength of Proprietary Patching Material

Inspection Activities:

1	-	Check that PPM is sampled as specified.	100%

2	-	Provide stainless steel moulds to the Contractor for preparing the 28-Day compressive strength specimens. The Contractor provides the moulds for early strength determination.	100%
3	-	Receive the test specimens for 28-Day compressive strength, as specified and deliver to the designated laboratory. The Contractor delivers the specimens for early strength determination.	100%

363.07.11 Repairs

Inspection Activities:

1	-	Check the condition of the precast concrete slab and the existing adjacent pavement.	100%

Administrative Activities:

1	M	Notify the Contractor of any precast concrete slab and existing pavement that does not meet the requirement are required to be repaired or removed and replaced.	-
2	-	Receive and Check the repair proposal submitted by the Contractor for the rejected work. Notify the Contractor in writing whether the proposal is acceptable.	-

363.07.13 Management of Excess Material

Inspection Activities:

1	-	Check that management of excess material is as specified in the Contract Documents.	100%

363.08 QUALITY ASSURANCE

Inspection Activities:

1	M	Prior to and after installation, Inspect the precast concrete slabs for defects as specified in OPSS 363. Prepare a report for the field inspection. Notify MTO's Quality Assurance Section of the presence of any defects.	100%
2	M	For precast concrete slabs, Inspect the elements for defects or deficiencies as specified in OPSS 1355. Additional inspection activities shall be as specified in CAIS 1355.	100%

Administrative Activities:

1	-	Review all laboratory test results. Determine acceptability of compressive strength of: - Flowable fill - Bedding grout - PPM	-
2	-	Forward acceptance test results for compressive strength to the Contractor as they become available.	-
3	-	If referee testing is invoked by the Contractor for compressive strength of the PPM, Check that it is invoked within 3 Business Days of receipt of the acceptance test result. If it is not within the specified time frame, Notify the Contractor in writing that the referee request is rejected.	-
4	-	Review the Contractor's request to invoke referee testing (including the original test results to verify they do not meet the specified quality assurance acceptance requirements) within 3 Business Days of receiving the results of that lot.	-
5	-	Complete MTO form PH-CC-885 Concrete Referee Testing Request and submit it to the MTO Quality Assurance Officer (QAO).	-
6	-	If the laboratory cannot complete referee testing in a reasonable timeframe, inform the QAO, who will provide another referee laboratory from the Engineering Materials Office (EMO) referee roster.	-
7	-	Submit a copy of the completed Referee Request Form provided by EMO to the referee laboratory by email.	-
8	-	Contract Administrator or QAO to contact the Area Quality Assurance laboratory and Notify them to ship the referee samples immediately to the referee laboratory.	-
9	-	Check that notification is received for samples arriving at the referee laboratory.	-
10	-	Once the schedule for referee testing has been finalized, provide the Contractor and QAO with the details of the referee laboratory, date and time of testing a minimum of 3 Business Days in advance of the date of referee testing.	-
11	-	Confirm that the Contractor will be witnessing the referee test (maximum of 2 people). The date is non-negotiable by the Contractor unless a change is formally requested by the MTO.	-
12	-	Once testing is complete, receive and Review the test results from the referee laboratory.	-
13	-	For referee testing, calculate the confirmation value and Determine whether the Contractor or the Owner bears the cost of referee testing, as specified in OPSS 363.	-
14	-	Forward referee test results to the Contractor as they become available.	-
15	-	Submit the referee test results together with a cover letter to the QAO.	-

16	M	Review the FWD testing results. Determine acceptability of FWD test results as specified in OPSS 366 and CAIS 366.	-
17	M	If applicable, Notify the Contractor of rejected pavement slabs based on defects from field inspection, FWD testing results, and compressive strength results of the materials listed above in task 1.	-
18	M	For precast concrete slabs, Check that quality assurance and acceptance is as specified in OPSS 1355. Check that precast concrete slabs meet the quality assurance requirement as specified in OPSS 1355, including acceptable 28-Day compressive strength, air void system parameters and rapid chloride permeability. For precast concrete slabs, additional administrative activities shall be as specified in CAIS 1355.	-
19	-	Notify MTO's Quality Assurance Section for lots or work that fails to meet the acceptance requirements. Provide written notification to the Contractor, after consultation with MTO, for rejectable lots or work.	-

363.09 MEASUREMENT FOR PAYMENT

Administrative Activities:

1	-	Measurement for payment shall be as specified.	-

363.10 BASIS OF PAYMENT

Administrative Activities:

1	-	Basis of payment shall be as specified.	-