Administration and Inspection Activities for Installation of Bearings

(As Specified in OPSS 922, 922F01 and 922S04)

922.01 SCOPE

This CAIS covers the construction administration and inspection requirements for the installation of bearings as specified in OPSS 922, November 2020, SSP 922F01, January 2021 and 922S04, July 2026.

922.02 REFERENCES

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

Ontario Provincial Standard Specifications, Construction:

OPSS 922 Installation of Bearings

MTO Standard Special Provisions:

SSP 922F01 Amendment to OPSS 922, November 2020 - Elastomeric Bearing Test Samples for Destructive Testing
SSP 922S04 Amendment to OPSS 922, November 2020

MTO Forms:

PH-CC-885 Concrete Referee Testing Request

Construction Administration and Inspection Specifications (CAIS):

CAIS 921 Jacking of Bridge Superstructure
CAIS 1202 Bearings – Elastomeric Plain and Steel Laminated
CAIS 1203 Bearings – Rotational and Sliding Bearings

922.03 DEFINITIONS

For the purpose of this CAIS, the definitions shall be as specified in OPSS 922.

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922.04 DESIGN AND SUBMISSION REQUIREMENTS

922.04.01 Design Requirements

922.04.01.01 Jacking

Administrative Activities:

1	-	When jacking is not specified in the Contract Documents but is required, Check for compliance with OPSS 921 and OPSS 922.04.01.01.	-

922.04.02 Submission Requirements

922.04.02.01 Layout and Installation Drawings

922.04.02.01.01 General

Administrative Activities:

1	-	Receive the layout and installation Working Drawings.	-
2	-	Check the Working Drawings.	-
3	-	After reviewing the Working Drawings and technical documentation submissions, submit with comments, to the MTO CSA and MTO Structural within 2 Business Days of receipt.	-
4	-	Ensure a final copy of all Contractor submissions is shared with inspection staff are available to perform enforcement to verify compliance with the Contract Documents.	-
5	-	Ensure a final copy is sent to MTO Structural.	-

922.04.02.01.02 Elastomeric Bearings

Administrative Activities:

1	-	Check that the layout and installation Working Drawings for elastomeric bearings provides the required information and conforms with OPSS 922.04.02.01.01.	-

922.04.02.01.02 Rotational and Sliding Surface Bearings

Administrative Activities:

1	-	Check that the layout and installation Working Drawings for rotational and sliding surface bearings provides the required information and conforms with OPSS 922.04.02.01.01.	-

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922.05 MATERIALS

922.05.01 Bearings

Inspection Activities:

1	-	Check that bearings are as specified in OPSS 1202 or OPSS 1203 and as specified in the Contract Documents.	-
2	-	Check that the delivered bearings are being supplied from an approved supplier on the appropriate Designated Sources of Materials List.	-

922.05.02 Grout

Inspection Activities:

1	-	Check that grout is as specified in the Contract Documents.	-
2	-	Check that the delivered bags of grout are on the appropriate Designated Sources of Materials List.	-
3	-	Check that the bags of grout are not more than 6 months old.	

922.07 CONSTRUCTION

922.07.01 General

Inspection Activities:

1	-	Check that the bearings are stored, handled, and protected from damage according to the manufacturer's requirements and the Contract Documents.	25%
2	-	Check that the supplier's representative is present during disassembly and reassembly, when required.	50%
3	SSI	Check that the top and bottom surfaces of all bearings are in full contact with the structure.	50%
4	-	Check that pintles, if specified in the Contract Documents, engage the steel plate of the bearings through the entire thickness of the plate.	25%

Administrative Activities:

1	M	Receive permission from the bearing supplier for disassembly, when required.	-

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922.07.02 Bearing Seats

Inspection Activities:

1	-	Verify that the bearing seats are finished as specified in the Contract Documents.	25%
2	-	Prior to installation of bearings, check all surface areas are acceptable.	25%

922.07.03 Installation of Anchors

Inspection Activities:

1	-	Check that the anchors and anchor holes are as specified in the Contract Documents.	25%
2	-	Check that holes for anchors are formed into abutments and pier caps prior to casting concrete.	50%
3	-	When coring is required to receive anchors, check that a covermeter or concrete scanner was used to locate steel reinforcement in advance.	25%

922.07.04 Grouting

Inspection Activities:

1	SSI	Check that the grouting operation, including mixing, handling, and curing, is performed according to the manufacturer's recommendations as specified.	50%
2	SSI	Check that the substrate has been roughened, cleaned, and pre-wetted (saturated-surface dry) prior to grouting.	50%

Administrative Activities:

1	-	Verify that grout has reached the minimum specified strength before the superstructure load is transferred to the bearings.	-

922.07.05 Alignment and Elevation Tolerances

Inspection Activities:

1	SSI	Check that the tolerance requirements have been met.	50%

922.07.07 Jacking

Inspection Activities:

1	-	Check jacking work according to CAIS 921.	100%

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922.07.07.02 Adjusting or Resetting Bearings

Inspection Activities:

1	SSI	Check that the lift requirements are met when adjusting or resetting bearings.	100%

922.07.08 Positive Attachment of Elastomeric Bearing Strips

Inspection Activities:

1	-	Check that elastomeric bearing strips are positively attached when specified on ballast walls and wing walls.	25%

922.07.09 Sampling for Quality Assurance Testing

922.07.09.01 Sampling of Bearings

Inspection Activities:

1	-	Check bearings are properly labelled as specified in OPSS 1202 and identified in Working Drawings.	50%
2	-	Check bearings have the correct dimensions as specified in OPSS 922.	50%
3	-	Randomly select bearings to be delivered by the Contractor for testing as specified in SSP 922F01. If more than 1 bearing sample of the same dimensions is required, separate the sampling into lots to represent different dates for manufacture and state the serial numbers each sample bearing represents.	100%

Administrative Activities:

1	-	Receive notification of the identification and availability of bearings for sampling.	-
2	-	Notify the Contractor which bearings have been selected for testing from each lot, and the identification of all other bearings within the lot.	-
3	-	Check the elastomeric bearings sampled for testing are shipped with a copy of the bearing layout and installation Working Drawings as specified in OPSS 1202.	-

922.07.09.02 Sampling of Approach Slab Bearings and Ballast Wall Bearings

Inspection Activities:

1	-	Check that a complete label is present on the test sample.	100%

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922.07.09.03 Grout Sampling

Administrative Activities:

1	-	For each lot, randomly select the batch from which the acceptance and referee samples are taken.	-
2	-	Check that cubes for compressive strength as specified in OPSS 922 and delivered with MTO form PH-CC-440 Engineering Materials Office Sample Transmittal Form and MTO form PH-CC-322, Concrete Construction Report.	-

922.07.10 Inspection after Installation of the Bearings

Inspection Activities:

1	-	Check that the installation of bearings is completed as specified in the Contract Documents.	100%

922.08 QUALITY ASSURANCE

922.08.01 Acceptance of Bearings

Administrative Activities:

1	-	Review test results for compliance and reject bearing lots considered unacceptable.	-

922.08.02 Acceptance of Approach Slab Bearings and Ballast Wall Bearings

Administrative Activities:

1	-	Review test results for compliance with OPSS 1202.	-
2	-	If the bearings do not meet the specified requirements, inform the Contractor that the bearings are unacceptable and consult with MTO if bearings will be permitted to remain in the Work with a payment adjustment applied.	-

922.08.03 Acceptance of Grout Compressive Strength

Administrative Activities:

1	-	Review all laboratory test results for compressive strength of grout and Determine acceptability.	-
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 grout, 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	-

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		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 SSP922S04.	-
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	-	Notify MTO's Quality Assurance Section for lots that fail to meet the acceptance requirements. Provide written notification to the Contractor, after consultation with MTO, for rejectable lots.	-

922.09 MEASUREMENT FOR PAYMENT

Administrative Activities:

1	-	Measurement for payment shall be as specified.	-

922.10 BASIS OF PAYMENT

Administrative Activities:

1	-	Basis of payment shall be as specified.	-

922.10.02 Payment Adjustment for Bearings

922.10.02.01 Elastomeric Bearings with Steel Laminates

Administrative Activities:

1	-	Calculate payment adjustments when test samples are within the payment adjustment range shown in Table 1 and/or Table 2, and when a request is made that the Owner accept the bearings.	-

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