922.02 REFERENCES

Section 922.02 of OPSS 922 is amended by the addition of the following reference under **MTO Forms:**

PH-CC-322 Concrete Construction Report
PH-CC-440 Engineering Materials Office Sample Transmittal Form

922.05 MATERIAL

922.05.02 Grout

Subsection 922.05.02 of OPSS 922 is amended by deleting and replacing the last sentence with the following:

The grout shall be supplied pre-bagged and unopened. Each bag shall be labelled with the following:

a) Name of the manufacturer

b) Product name

c) Manufacturer's batch number

d) Date of packaging

The bags of grout shall be maintained in a dry condition up to the time of use and shall be stored within a temperature range of 10°C to 30°C. Material from bags that contain lumps of hydrated grout or appear to be frozen or otherwise damaged shall not be used in the work. The bagged grout shall be used within the 6 months of date of packaging.

Grout shall meet all of the following compressive strength requirements when tested according to this specification:

a) Minimum 7-Day compressive strength shall be the greater of:

   i) 35 MPa; or
   ii) 15% lower than the 7-Day compressive strength listed on the DSM for the selected product.

b) Minimum 28-Day compressive strength shall be 15% lower than the 28-Day compressive strength listed on the DSM for the selected product.

922.07 CONSTRUCTION

922.07.09 Sampling for Quality Assurance Testing

922.07.09.03 Grout Sampling

Clause 922.07.09.03 of OPSS 922 is deleted in its entirety and replaced with the following:

Four sets of three cubes shall be cast per lot, as defined in the Quality Assurance section, as follows;

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a) One set for acceptance testing of 7-Day compressive strength.

b) One set for referee testing of 7-Day compressive strength, if invoked.

c) One set for acceptance testing of 28-Day compressive strength.

d) One set for referee testing of 28-Day compressive strength, if invoked.

The Contract Administrator shall randomly select the batch from which the acceptance and referee samples are taken.

Stainless steel moulds for preparation of samples shall be provided by the Contractor.

Casting of cubes shall be according to CSA A3004-C2 with the following amendments:

a) The specimens shall be stored on site at a temperature between 15°C and 25°C and shall not be moved prior to demoulding.

b) For 7-Day compressive strength determination, the specimens shall be demoulded and transported to the designated laboratory within 24 hours ± 4 hours.

c) For 28-Day compressive strength determination, the specimens shall be demoulded and transported to the designated laboratory within 24 hours ± 4 hours.

c) The test specimens shall be demoulded on site and shall be placed in a sealed white opaque plastic bag containing at least 250 mL of water and maintained at a temperature between 15°C and 25°C, for transportation to the designated laboratory.

The test specimens shall be delivered to the designated laboratory, accompanied by MTO form PH-CC-440 Engineering Materials Office Sample Transmittal Form and MTO form PH-CC-322, Concrete Construction Report.

922.08 QUALITY ASSURANCE

922.08.03 Acceptance of Grout Compressive Strength

Subsection 922.08.03 of OPSS 922 is deleted in its entirety and replaced with the following:

922.08.03.01 Size

A lot shall consist of all the grout from one Day's placement.

922.08.03.02 Acceptance Testing

One set of three cubes per lot shall be tested for 7-Day compressive strength, and one set of three cubes per lot shall be tested for 28-Day compressive strength to determine the acceptance of the lot.

The compressive strength for each age shall be the average of the set of the three cubes.

Compressive strength shall be determined according to CSA A3004-C2.

Compressive strength shall be considered acceptable when the lot strength is greater than or equal to the compressive strength specified in the Grout subsection. Compressive strength of a lot shall be acceptable when the 7-Day and 28-Day compressive strength meet the requirements specified in the Contract Documents. Unacceptable grout shall be deemed rejectable.

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922.08.03.03 Referee Testing

922.08.03.03.01 General

The referee testing process for grout compressive strength is based on duplicate cubes cast at the same time as the acceptance cubes.

Referee testing of compressive strength for a lot may only be invoked by the Contractor within 3 Business Days of receiving the test results for that lot.

The referee laboratory shall be designated by the Owner.

Referee test results shall be forwarded to the Contractor as they become available.

If the difference between the referee test result and the acceptance test result is less than or equal to the confirmation value, the acceptance test result is confirmed and the acceptance test result shall be used in the determination of acceptance for the grout. If the difference between the referee test result and the acceptance test result is greater than the confirmation value, the acceptance test result is not confirmed, and the acceptance test result shall be disregarded, and the referee test results shall be used in the determination of acceptance. The confirmation value for confirming the acceptance test result shall be the greater of 10% of the specified strength or 10% of the strength of the acceptance cubes, expressed to one decimal place.

922.08.03.03.02 Referee Testing Cost

The cost of compressive strength referee testing shall be as specified in the Contract Documents.

When the referee test result confirms the acceptance test result, the Contractor shall be charged the cost of compressive strength referee testing. When the referee test result does not confirm the acceptance test result, the Owner shall bear the cost.

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