

Concrete Mix Design Submission (Form A)

Project: MCBR Date: August 9, 2019
 Location/Description: 3 Meridian Place, Nepean, Ottawa, ON Submitted By: Ryan Andre, C.Tech
 Contractor: Tal-Co Contact: Farah Bano
 Batch Plant: Stittsville Plant, Ottawa Secondary Plant: Vars Plant, Ottawa

MIX CODE (Please place order with Mix #)		251FT				
Application / Element / Location		Exterior Curb				
SPECIFICATION	Concrete					
	-CSA Exposure Class	F-2				
	-Maximum W/CM Ratio	0.55				
	-Minimum Specified Strength (MPa)	25MPa				
	-Nominal Maximum Aggregate Size (mm)	20mm				
	-Maximum Slag Replacement (%)	25%				
	-Maximum Silica Fume Replacement (%)	0%				
	-Plastic Air Content (%)	4-7%				
Durability Requirements						
-Cement Content (if specified) (state OPSS if applicable)						
-Alkali Aggregate Reactivity	Meets CSA	Meets CSA	Meets CSA			
CONTRACTOR REQUIREMENTS	Slump Range (mm)	50mm - 110mm				
	Strength @ Age (MPa)	25MPa at 28 Days				
	Specialty					
	Specialty					
	-Concrete Set (Delay, Normal, Accelerated)	Normal	Normal	Normal		
	Method of Placement					
MATERIALS SECTION	Material	Source Info.			REVIEWED <input type="checkbox"/> P.A.G.	
	Cement	<i>Lafarge - Bath</i>	<i>GU/GUL</i>	(kg/m3)	X	NOT REVIEWED <input type="checkbox"/>
	Cement	<i>CRH - Joliette</i>	<i>GU/GUL</i>	(kg/m3)	X	AMEND AS NOTED <input type="checkbox"/>
	SCM	<i>Lehigh - Picton</i>	<i>Slag</i>	(kg/m3)	X	REVISE & RESUBMIT <input type="checkbox"/>
	Water	<i>Well</i>	<i>Well</i>	(l/m3)	X	DATE: 12 AUG 2019
	Fine Agg.	<i>Tomlinson-Howe Ross</i>	<i>Inv # K03-076-00</i>	(kg/m3)	X	Review indicates general conformance with structural requirements only.
	Coarse Agg.	<i>Tomlinson-Stittsville</i>	<i>Inv # K03-042-00</i>	(kg/m3)	X	
	A.E.A.	<i>BASF</i>	<i>MasterAir AE200</i>	(ml/100 kg)	X	
	W.R.	<i>BASF</i>	<i>MasterSet R100</i>	(ml/100 kg)	X	
	W.R.D.A.	<i>BASF</i>	<i>MasterPozzolith 210</i>	(ml/100 kg)	X	
	H.R.W.R.	<i>BASF</i>	<i>MasterGlenium 7500</i>	(ml/100 kg)	X	

Form Submitted By: _____
 Print Name: Ryan Andre, C.Tech Signature: Date: August 9, 2019
 Contractor's Representative: _____
 Print Name: _____ Signature: _____ Date: _____

- Notes
- 1) The "Concrete Supplier" provides to the contractor a valid "Certificate of Concrete Production Facilities" as issued by the RMCAO (copy available upon request). Check www.rmcao.org for an updated list of certified concrete plants.
 - 2) The "Concrete Supplier" certifies that all materials incorporated in the mix designs meet current CSA A23.1 requirements.
 - 3) Concrete Testing shall incorporate www.cmats.com and shall be used by the testing company.
 - 4) Concrete tests not done according to CSA Standards shall not be accepted for any basis of measurement.
 - 5) The Owner shall be responsible for performance "off the chute" if the owner specifies any material proportion(s).
- *) Concrete Cylinders as per CSA A23.1 and concrete curing temperatures must remain at 20° C or above



Compressive Strength Test Results Release



Effective quality control of ready-mix concrete is a critical aspect in ensuring long term sustainability, durability and performance of Canadian infrastructure. Field sampling and test procedures outlined in CSA A23.2, which are to be conducted by certified personnel under an industry-recognized program, allow the ready-mix supplier to evaluate their mix designs and to make adjustments accordingly for optimal performance.

One of the primary evaluation methods for determining the performance of ready-mix concrete is **compressive strength**. Cylinders cast and stored as per [CSA A23.2-3C Making and curing concrete compression and flexural test specimens](#) and evaluated as per [CSA A23.2-9C Compressive strength of cylindrical concrete specimens](#) provide verification that the concrete can achieve the strength values required by the designer. Annex B of CSA A23.2-14 shows a typical sample form of a compressive strength test result and this information is vital for the ready-mix supplier.

Under the performance specification option of CSA A23.1, the concrete supplier uses the test results to evaluate the performance and suitability of the mix design. If the performance is satisfactory, adjustments can be avoided. However, if the concrete supplier identifies deficiencies such as inadequate air contents, slumps, unit weights, or compressive strength deviations, adjustments may be necessary by the supplier to satisfy the performance alternative as is defined in CSA A23.1-14 Table 5.

CSA A23.1-14 4.4.1.7 Test Reports

4.4.1.7.1 General

Unless otherwise agreed, test results shall be provided to the owner, contractor, and concrete supplier within five working days.

As per CSA A23.1-14, unless otherwise agreed and discussed beforehand, it is **mandatory for the test results to be**

supplied to the concrete supplier within 5 working days. This requirement cannot be stressed enough since it allows the concrete producer to evaluate the performance of their raw materials and allows them to make mix design adjustments to ensure satisfactory concrete performance. Keeping the concrete producer up to date with the latest results, allows them to identify trends and take proactive measures to ensure product consistency, performance, and sustainability.

It is here-by understood that no formal agreement has been presented to the concrete supplier that the test results will not be issued for their review.

Please add the following individual(s) to the test result distribution list:

Name	Company	E-mail Address	Fax

Proper Field-Testing Procedures and Distribution of Concrete Test Results

Dear Laboratory Supervising Engineer,

Effective quality control of ready-mix concrete is a critical aspect in ensuring the long-term sustainability, durability, and performance of Ontario's infrastructure. As such, the field sampling and test procedures outlined in CSA A23.1/.2, which are to be conducted by certified personnel under an industry-recognized program, must be performed properly to validate the performance of the concrete supplied to the project and we appreciate your professionalism in conducting this testing.

Whether it is following the requirements of the CSA A23.2 test methods, initial sample storage, curing and transportation of compressive strength cylinders, or the timely transmission of test results, the industry would like to ensure that all standards are enforced and that accurate material testing information is provided to the Owner, Contractor & Ready Mix Concrete Supplier so that an effective quality control system can be utilized on all projects.

The issues of concrete test report distribution and following proper field-testing practice on job sites, continue to be areas of concern for our members and we would welcome any thought that you may have regarding how these issues can be more effectively improved. To address test report distribution, all Concrete Ontario members will be sending our "Compressive Strength Test Results Release" bulletin along with all submitted mix designs to ensure labs are aware of the correct contacts. The document has been attached to this letter for your review and all comments and concerns can be sent to Alen Keri, P.Eng., at akeri@concreteontario.org.

Concrete Ontario would like to open an effective communication channel with all third-party labs in Ontario to determine how we, as an industry, can assist in improving the quality of testing that is being performed on a daily basis. While the association has offered the ACI – CSA Based Field Testing Certification course for over 30 years, we are currently in the process of working with the ACI – Ontario Chapter to begin offering the ACI – Self Consolidating Concrete Testing Technician program as an advanced certification course that your firm may be interested in sending technicians to.

We look forward to working together in the near future to improve the concrete testing industry as a whole.

Sincerely,



Bart Kanter, P.Eng., MBA
President

CERTIFICATE OF READY MIXED CONCRETE Production Facilities

is awarded to

TOMLINSON READY MIX Stittsville Plant

a member of the Ready Mixed Concrete Association of Ontario (RMCAO), on the basis of a signed statement given by an RMCAO Approved Professional Engineer registered in the Province of Ontario, that he/she has certified the ready mixed concrete production facilities of the above-named plant in accordance with the current RMCAO Audit and Check List for the Certification of Ready Mixed Concrete Production Facilities and that the facilities meet these requirements,

and

on the basis of a signed statement by a responsible official of the Company above-named, that the facilities referred to above will be maintained to the requirements of this Certification and the By-Laws of the Ready Mixed Concrete Association of Ontario.



Chair

June 8, 2020

Expiry Date



R1025

CERTIFICATE OF READY MIXED CONCRETE Production Facilities

is awarded to

TOMLINSON READY MIX Rideau Road Plant

a member of the Ready Mixed Concrete Association of Ontario (RMCAO), on the basis of a signed statement given by an RMCAO Approved Professional Engineer registered in the Province of Ontario, that he/she has certified the ready mixed concrete production facilities of the above-named plant in accordance with the current RMCAO Audit and Check List for the Certification of Ready Mixed Concrete Production Facilities and that the facilities meet these requirements,

and

on the basis of a signed statement by a responsible official of the Company above-named, that the facilities referred to above will be maintained to the requirements of this Certification and the By-Laws of the Ready Mixed Concrete Association of Ontario.



Chair

May 18, 2020

Expiry Date



R1025

CERTIFICATE OF READY MIXED CONCRETE Production Facilities

is awarded to

TOMLINSON READY MIX Vars Plant

a member of the Ready Mixed Concrete Association of Ontario (RMCAO), on the basis of a signed statement given by an RMCAO Approved Professional Engineer registered in the Province of Ontario, that he/she has certified the ready mixed concrete production facilities of the above-named plant in accordance with the current RMCAO Audit and Check List for the Certification of Ready Mixed Concrete Production Facilities and that the facilities meet these requirements,

and

on the basis of a signed statement by a responsible official of the Company above-named, that the facilities referred to above will be maintained to the requirements of this Certification and the By-Laws of the Ready Mixed Concrete Association of Ontario.



Chair

June 8, 2020

Expiry Date



R1025