

SRMCA
CONCRETE PRODUCTION FACILITIES
CERTIFICATION PROGRAM

PLANT CERTIFICATION CHECKLIST

FIFTH EDITION
NOVEMBER 2013



FOR
SASKATCHEWAN READY MIX CONCRETE ASSOCIATION

PRODUCTION FACILITIES INFORMATION

Producer Name: _____

Company Address: _____

Plant Location: _____

Contact Person: _____

Telephone Number: _____

Fax Number: _____

INSPECTION INFORMATION

Inspection Date: _____

Auditing Engineer: _____

Technical Personnel: _____

TABLE OF CONTENTS

	Page
Production Facilities Information	ii
Table of Contents	iii
Foreward	iv
General	v
Inspection Procedures	vii
Material Storage and Handling	1
A.1 Cement & Cementitious Materials	1
A.2 Aggregates	1
A.3 Water	1
A.4 Admixtures	1
A.5 Winter Concrete	1
Batching Equipment	2
B.1 Scales	2
B.2 Batchers – General	3
B.3 Accuracy of Plant Batching	4
B.4 Batching Systems – Definitions and Requirements of Components	6
B.5 Recorders and Records	6
C.1 Central Mixer	6
D.1 Truck Mixers	7
E.1 Agitators	9
F.1 Ticketing System	9
References	10
Verification of Inspection and Application for Certificate	11
Scale Checking Agreement	12
Truck Mixer Fleet Maintenance Agreement	13
Engineer Information Form	14
Sample of Certification Certificate	15

FOREWARD

Concrete is a manufactured product, the quality and uniformity of which depends upon control over its manufacture. It must be composed of suitable ingredients accurately combined to specific proportions. These must be thoroughly blended and the finished product delivered without damage. Although success depends upon several factors, a vital prerequisite is the availability of proper, well-maintained equipment.

As a member of the Canadian Ready Mixed Concrete Association (CRMCA), the Saskatchewan Ready Mix Concrete Association (SRMCA) performs several important functions for its members, of which, the contents of this checklist details the requirements for certification of ready mixed concrete plants.

This document describes a system for establishing that production facilities of ready-mixed concrete plants are satisfactory and permits a qualified plant to display a Certificate of Conformance, which assures the purchaser that the facility is physically capable of supplying good quality concrete. No claim is made that certification of plant facilities will assure delivery of high quality concrete. As indicated previously, proper equipment is only one of several factors involved in concrete control, although a very essential one. The Certificate of Conformance should be accepted as evidence that certain capabilities exist, which reduces the likelihood of deficiencies in quality when normal inspection is exercised.

To be eligible for a Certificate, the plant must be inspected by an independent, registered Professional Engineer, licensed to practice Professional Engineering in Saskatchewan with experience in concrete materials and concrete construction and approved by the SRMCA, for conformance with the checklist contained herein. In addition to carrying the signature and seal of the inspecting engineer, the Certificate must also be signed by the principal company executive attesting to his/her intention of seeing that all equipment is maintained within the requirements of the checklist.

It should be noted that the inspecting engineer, in signing the Certificate, stakes his/her professional reputation on the evaluation having been thorough and objective. In addition, the engineer accepts his/her ethical and legal responsibilities not to disclose any information regarding the business affairs or technical processes of Members. At any time, a purchaser may compare plant attributes with the checklist to verify that the Certificate provides valid evidence of production capability. The same prerogative applies with regard to the company official's pledge to maintain the equipment properly.

This *Plant Certification Checklist* is to be used for the purpose of an on-site inspection of the plant by a professional engineer, prior to issuing a Certificate of Conformance.

Neither the SRMCA nor its representatives have made or purport to make any representations, warranties, or covenants with respect to the specifications or information contained in this checklist or the results obtained by their use, nor will they be liable for any damage, loss or claims, including those of an incidental or consequential nature, arising from their use.

GENERAL

This checklist itemizes requirements for plant facilities and equipment used in the production of ready mixed concrete and provides guidance to the ready mixed concrete producers in qualifying their plants for certification by a registered Professional Engineer or by an assistant under his supervision. It is also intended to assist the examining engineer or his/her assistant to perform the plant inspection quickly and accurately. The producer's staff should work with the engineer to expedite the inspection and where possible, to correct deficiencies in plant installations or operations.

Each item in the checklist is to be checked by a registered professional engineer or by an assistant under his supervision and in each case, enters the appropriate symbol in the space provided, as follows:

√ if the requirement is met

F (failed) if the requirement is not met

(An accompanying number may be used to refer to appended explanation where considered desirable. **However, a Certificate can't be issued to a plant not meeting all of the applicable items.** If possible, deficiencies should be corrected before the inspection is completed.)

N/A (not applicable) if the particular item is not applicable to the type of plant being inspected

Any ready mixed concrete producer who is a member of the SRMCA may obtain, free of charge, three (3) copies of this Certification Manual for each plant to be inspected. The manual contains:

1. Checklist for Ready Mixed Concrete Production Facilities
2. Verification of Inspection and Application for Certificate Form
3. Scale Checking Agreement
4. Truck Mixer Fleet Maintenance Agreement
5. Engineer Information Form

The engineer needs to submit the Engineer Information Form only once.

An official of the producer company must sign the Scale Checking Agreement, the Truck Mixer Fleet Maintenance Agreement and the Certificate of Conformance for Concrete Production Facilities contained herein.

The examining engineer's initials should appear on each page on which entries have been made. The original copy of the checklist and accompanying documents should be submitted to the SRMCA. A second copy should be provided to the owner of the plant for his/her record and for such use as a reference as he/she may find appropriate. The third copy is to be retained by the inspecting engineer for his/her files.

To save paperwork, it is permissible to make photocopies of the original checklist for the files of the engineer and producer. The original, however, must be submitted to the SRMCA.

The Certificate is issued for a period of three (3) years but is only valid for the period indicated and upon receipt of an acceptable Annual Truck Fleet Condition and Scale Inspection Report.

Recertification will be granted upon successful review and submission of all documentation pertaining to certification including scale calibration reports, truck mixer fleet inspection reports, moisture content reports of aggregates, water meter calibration reports, admixture calibration reports and other documentation deemed necessary by the SRMCA.

The Certificate may be revoked at anytime at the discretion of the SRMCA and becomes invalid if:

- The plant changes ownership;
- The plant is moved; and or
- Major changes are made to the plant

INSPECTION PROCEDURES

The references listed at the end of the document provide useful information for evaluating the production facilities. It is expected that the examining engineer will employ his/her professional judgement in interpreting the requirements and will use technical assistance where it is needed. The guidance herein provided is for instruction only and does not modify the requirements of certification. The numbering system below corresponds to that in the checklist. Reference is made only to items not considered self-explanatory.

The objective of inspection and certification is to assure adequate facilities, and it must therefore be assumed that the producer will co-operate fully to provide the inspecting engineer with working space, labour and access to equipment. It is most desirable that, wherever possible, the engineer supplies information to and work with the producer to correct deficiencies as the inspection progresses. It will be the responsibility of the inspecting engineer to establish that the information on the Certificate of Conformance is correct before signing and sealing the document.

B.1 Scales

In lieu of his own detailed, independent check of scale accuracy, the engineer may accept evaluation of a qualified expert. It is probable that inspections made by a scale manufacturer's technical staff will be considered satisfactory by the engineer but he/she will be the sole judge of their validity. In checking a scale system for accuracy under Section B.1.b of the checklist, cut-off, signaling and dampening devices and similar appurtenances may be removed.

B.1.d Mass Setting Devices

Depending on the type of plant, mass-setting devices may be scale-poisés, pointers, dials, punch cards, etc. Whatever is used must permit distinguishing differences as small as 0.1% of the capacity of the particular scale.

B.4 Batching Systems

A usual problem will be to distinguish between automatic and semi-automatic systems or between semi-automatic and manual systems. The former two can be distinguished as follows:

- In an automatic system, the entire sequence of measurement of all major ingredients - cementitious materials, aggregates and water, is actuated by a single operation (i.e., pushing a button, accessing a computer mix code or inserting a card) after which the cycle is completed without further attention;
- In a semi-automatic system the weighing of an ingredient is actuated separately by the operator, but is terminated automatically when the proper amount has been reached; and
- In a manual operation, cut-off of a material at the proper quantity is accomplished by the operator. The system shall be classed as manual if any major ingredient – cementitious materials, aggregates or water – is batched manually.

C.1 Central Mixer

Procedures for measuring the uniformity of concrete from central mixers are given in CSA Standard CAN A23.1-09. In using the test, the engineer should require that the materials be batched and the equipment be operated in accordance with the methods employed in operation of the plant.

D.1 Truck Mixers and Agitators

Evaluation of delivery units must of necessity involve some subjective judgement. Particularly in large fleets, defects may exist in a small percentage of units as they approach the time for scheduled maintenance or rehabilitation. It should be assumed however, that these would not constitute more than ten percent (10%) of the fleet at one time. The record of acceptable and unacceptable units is intended to provide a general picture of condition. A purchaser may request up-to-date evaluations, if he/she intends to restrict the use of questionable units.

MATERIAL STORAGE AND HANDLING

A.1 Cement & Cementitious Materials

- A.1.a Bins or silos are tight and with free movement to discharge opening.
- A.1.b Where storage is provided for different types of cement or cementitious materials, different materials are isolated to prevent intermingling or contamination.

A.2 Aggregates

- A.2.a Aggregate storage arranged to ensure that each aggregate as removed is clean, distinct and not intermingled with other.
- A.2.b Procedures for unloading and storing aggregates are such as to prevent harmful segregation and breakage.
- A.2.c Interplant handling and transportation such as to prevent harmful segregation.
- A.2.d Separate storage bins, compartments or storage areas for each size and type of aggregate is properly constructed and charged to prevent mixing of different sizes or types.

A.3 Water

- A.3.a Adequate supply, with pressure sufficiently constant or regulated to prevent interference with accuracy of measurement.

A.4 Admixtures

- A.4.a Storage tanks and handling/dispensers for liquid admixtures located to prevent damage by freezing or contamination.
- A.4.b Agitation provided for liquid admixtures that are not stable solutions.

A.5 Winter Concrete

- When a plant produces concrete regularly in sub-freezing weather, heating facilities for water and/or aggregates are provided.

Engineer Initials _____

BATCHING EQUIPMENT

B.1 Scales

- B.1.a Each scale comprised of a suitable system of levers or load cells which will weigh consistently within the tolerance given in B.1.b, with loads indicated whether by a beam with balance indicator or a full-reading dial. Digital read-out or display may be accepted in lieu of beam or dial indication provided readings distinguish sufficiently small differences to permit verifying accuracy in accordance with B.1.b.
- B.1.b Each scale accurate to within $\pm 0.20\%$ of scale capacity throughout the range of use. For direct digital read-out, the tolerance shall be increased to $\pm 0.25\%$ to allow for tracking restrictions.
- B.1.c Plant owner agrees to recheck scales in accordance with the following circumstances of plant operation:
- At intervals of no longer than one year;
 - Whenever alterations or additions are made to the plant which might affect the weighing accuracy of the scales. See the Scale Checking Agreement.
- B.1.d Mass-setting devices capable of being set to 0.1% of the total capacity of the scale. (No mass-setting device is required for a dial scale in a manual plant.)
- B.1.e Pivot and bearing loops of all scales made of hard metal to assure sustained accuracy. There must be no evidence of burring or wear.
- B.1.f Lever system scales so designed that center of gravity of gross load always lies within load pivots.
- B.1.g Beam Scales:
 Provided with zero balance beam, balance indicator and separate weighing beam for each ingredient of a batch to be weighed on the same scale.
- B.1.h Beam poises corrosion resistant, equipped with positive and accurate holding devices, and capable of being set to the minimum graduate interval, which shall not be greater than 0.1% of capacity with a clear interval of not less than 0.8mm.

Engineer Initials _____

- B.1.i Balance indicators sufficiently sensitive to show movement when mass corresponding to 0.1% of scale capacity is placed in the batch hopper at a load equal to or greater than 50% of scale capacity; Pointer travel at least 5% of net rated capacity of largest weigh beam or 90kg., whichever is less, for under-load and 4% or 45 kg., whichever is less, for over-load; provision made for damping oscillation or pointer.
- B.1.j Load-cell scales arranged to transmit load to one or more cells, directly or through a system of levers in such a way that the cell system registers the entire load accurately on the load indicating device.
- B.1.k Dial Indicating Scales:
- Have dial indicators and dial faces protected from dust
 - Dials indicate load in batches continuously from zero balance to full weighing capacity of scale.
 - The clear interval between graduations on the circular reading line of the dial face not less than 1mm.

B.2 Batchers – General

- B.2.a Batchers for weighing materials consists of suitable containers freely suspended from a scale system and equipped with the necessary charging and discharging mechanisms.
- B.2.b Cement and other cementitious materials weighed on a scale and in a weigh hopper separately from other ingredients.
- B.2.c Batchers capable of receiving rated loads without contact of the weighed materials with the charging system.
- B.2.d Cement batchers equipped with dust seal between charging mechanism and hopper, installed in such a way that weighing accuracy will not be affected; cement weigh hopper vented to permit air escape; hopper self-cleaning to ensure complete discharge.
- B.2.e Batchers charging mechanism designed and operated to stop flow of material within the weighing tolerances specified in section B.3 and preventing loss of material when closed.

Engineer Initials _____

- B.2.f Vibrators and other appurtenances installed and operated so as to not affect the accuracy of weighing.
- B.2.g The entire weigh batching system and equipment sufficiently protected against weather conditions.
- B.2.h Admixture dispensers capable of measurement within tolerances indicated in B.3.d, and equipped with a calibrated container in which the admixture may be collected to verify the accuracy of measurement; for positive displacement dispensing systems, such verification by means of a calibrated container may be on a periodic basis.
- B.2.i Admixture dispenser(s) located to permit batching personnel to observe and adjust the amount of admixture being batched.

B.3 Accuracy of Plant Batching

Note:

For weighed ingredients, accuracy of batching is determined by comparison between the desired weight¹ and the actual scale reading; for volumetric measurement of water and admixtures, accuracy is determined by checking the discharged quantity by weight on a scale or by volume in an accurately calibrated container.

- B.3.a Cement and other cementitious materials measured by weight within $\pm 1\%$ of the desired weight¹, for batch quantities between 30% and 100% of scale capacity².
- B.3.b Aggregates measured by weight within $\pm 2\%$ of the desired weight¹, for batch quantities between 15% and 100% of scale capacity².
- B.3.c Water measured by volume or weight within $\pm 2\%$ of the desired amount for batch quantities between 30% and 100% of the measuring capacity². Company official agrees to recheck batching accuracy of volumetric water batching devices (including water meters) not less frequently than every 90 days. See Agreement to Regularly Check Scales.

¹As indicated to the batch person, corrected for aggregate moisture, if required.

- B.3.d Admixtures measured to within $\pm 3\%$ of the desired amount or ± 30 grams, whichever is more, for batch quantities between 10% and 100% of the measuring capacity. Liquid admixtures are to be measured by volume or weight and powdered admixtures are to be measured by weight.

²The lower limit of batch quantities referred to in B.3.a, B.3.b, B.3.c and B.3.d is not to be interpreted as a limit on the size which can be satisfactorily produced.

Engineer Initials _____

- B.3.e Compensation for free moisture on aggregates as it affects aggregate weights and slump control. Suitable combination of pre-batching storage and manual or automatic measurement of aggregate moisture to provide aggregate of fairly consistent moisture content to the batcher and to detect changes of 1% in the moisture content of aggregate; procedure for adjustment of aggregate batch weights for changes in their moisture content of 1% by weight of dry aggregate. Accuracy of devices used for automated measurement of aggregate moisture is verified not less frequently than every 90 days.

Engineer Initials _____

B.4 Batching Systems – Definitions and Requirements of Components

Manual Batcher – a device for measuring cementitious materials, water or aggregates consisting of charging, weighing and discharge apparatus, with gates or valves actuated manually and with the accuracy of the measuring operation dependant upon the operator's visual observation of the scale.

Semi-Automatic Batcher – a device for measuring cementitious materials, water or aggregates consisting of charging, weighing and discharge apparatus, in which the gates or valves are separately opened manually to weigh the material but are closed automatically when the desired weight of the material has been reached. It is interlocked to assure that the discharge mechanism cannot be opened until the weight is within tolerance specified in sections B.3.a, B.3.b or B.3.c for the weighed ingredient.

Automatic Batcher – device for measuring cementitious materials, water or aggregates consisting of charging, weighing and discharging apparatus such that, when a start switch actuates the mechanism, the gates and valves will open automatically for the start of the weighing operation and closes automatically when the designated weight of the material has been reached. Interlocking of the automatic controls shall assure that:

- The charging device cannot be actuated until the scale has returned to zero balance within $\pm 0.3\%$ of its capacity;
- The charging device cannot be actuated if the discharge mechanism is open;
- The discharge device cannot be actuated if the charging mechanism is open;
- The discharge device cannot be actuated until the designated weight is within tolerance specified in sections B.3.a, B.3.b or B.3.c, above.

Manual Batching Records – Manual batching records are considered acceptable for the purpose of plant certification, if a computerized record keeping system is not in place, provided:

- All records are written and maintained in ink;
- All records note the following:
 - Date batched;
 - Time batched;
 - Weights of aggregates, cementitious materials, admixtures and water batched for each load of concrete; and
 - Volume of each load of concrete.

When different kinds of aggregates or different kinds of cement or cementitious materials are weighed cumulatively on a single scale, interlocked sequential controls shall be provided for each material.



Engineer Initials _____

B.5 Recorders and Records

Recorders – Devices that provide a permanent record of the quantity of cementitious materials, aggregates, water or admixtures measured into a particular batch of concrete.

	Cementitious Materials	Aggregate	Water	Chemical Admixtures
A graphical recorder provides a record on a chart simultaneously with the indication of the scale, as the materials are being weighed or measured. A graphical recorder shall register scale readings within $\pm 2\%$ of total scale capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OR			OR	
A digital recorder provides a printed record of the quantity of material weighed or measured. A digital recorder shall reproduce the scale reading within $\pm 0.1\%$ of scale capacity.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manual Records	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Recorders shall:

Be properly protected, i.e., provided with effective security to prevent tampering with records. (Graphical recorders must be in a locked housing and capable of being read without unlocking.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide for identifying the particular batch with the corresponding delivery ticket.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Register empty balance or tare to within $\pm 0.3\%$ of scale capacity for weighed ingredients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Register the quantity of ingredients or ingredients batched.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C.1 Central Mixer

C.1.a Definition: A stationary mixer installed at the plant for the purpose of mixing the concrete completely (central mixing) or partially (shrink mixing).

C.1.b Uniformity of Mixing: For central mixing operations, the mixer at the plant shall be capable of producing uniform concrete in the mixing time recommended by the plant manufacturer when operated with a capacity batch in accordance with the method regularly employed in operation of the plant or in the time designated in CAN CSA A23.1-09, clauses 5.2.3.5.

The concrete is considered uniform if it meets the requirements of CAN CSA A23.1-09, Table 13 and sampled in accordance with clause 3.4 of CSA A23.2-1C.

Engineer Initials _____

- C.1.c** The plant is equipped with a timing device that will not permit the batch to be discharged before the predetermined mixing time has elapsed.

D.1 Truck Mixers

Definition: Concrete mixers mounted on trucks or other vehicles used for the complete mixing of concrete ingredients after they have been batched at the plant. Each acceptable truck mixer shall conform to the following requirements:

- D.1.a** Truck mixers adequately maintained, with the amount of blade wear in each mixer, measured as the total cross section length of the blades at the point of maximum drum diameter nearest the drumhead, being less than 10%. Where comprehensive truck mixer records are maintained the examining engineer may waive the actual measurement of the blades if the records show that the mixer has delivered less than 10,000 m³ of concrete.

- D.1.b** Charging and discharge openings and chute in good condition, free from appreciable accumulations of cement or concrete with hopper and chute surfaces clean and smooth.

- D.1.c** Drum of such size that the rating as a mixer – in volume of mixed concrete – does not exceed 63% of the gross volume of the mixer, disregarding the blades. (This requirement is met, if all mixers carry a rating plate of the Truck Mixer Manufacturer’s Bureau.)

- D.1.d** Provided with documentation showing the mixer manufacturer’s recommended operating speed for mixing which must be in the range of 6 to 18 rpm of the drum; demonstrated capabilities to operate satisfactorily at recommended speed.

- D.1.e** On units equipped to batch mixing water, equipment to be in proper working condition; water pump or injection system in good working order with unobstructed nozzles and without leakage and found accurate to within ± 1% of mixing water capacity. (Does not apply to convenience water.)

Engineer Initials _____

Number of units checked and determined unacceptable _____

E.1 Agitators

Definition: Drums or containers, mounted on trucks or other vehicles in which central mixed concrete is kept sufficiently in motion during delivery to prevent segregation.

E.1.a Each acceptable agitator shall conform with the requirements of section **D.1, Truck Mixers**, except that the drum or container must be of such size that the ratings as an agitator (in volume of mixed concrete) does not exceed 80% of the gross volume of the container, disregarding blades. All units carrying a rating plate of the Truck Mixer Manufacturer’s Bureau meet this requirement.

The recommended operating speed for agitating must be in the range of not less than 2 rpm nor more than 6 rpm, with demonstrated capability to operate at recommended speed.

Note:

The inspecting engineer will evaluate all truck mixers and agitators used to deliver concrete from the plant. Any unit rated as unacceptable shall be **immediately** withdrawn from service and shall not be used again until its condition conforms to the above requirements.

F.1 Ticketing System

Provision on delivery tickets for the following information:

- Name of ready mix plant;
- Plant designation where batched if company operates more than one plant;
- Serial number of ticket;
- Truck number or designation;
- Name of contractor or other purchaser;
- Specific job designation (name and location);
- Specific class or designation of concrete identifiable with terminology used in the job specifications;
- Volume of concrete in cubic meters and cumulative total to the job;
- Date;
- Time load was batched; and
- Extra water added at the request of the receiver of the concrete and his/her signature or initials..

Engineer Initials _____

REFERENCES

1. CAN CSA A23.1-09, *Concrete Materials and Methods of Concrete Construction* and CAN CSA A23.2-09\ *Methods of Test and Standard Practices for Concrete*, Canadian Standards Association, 5060 Spectrum Way, Mississauga, ON L4W 5N6
2. Annual Book of ASTM Standards, Volume 04.02, Concrete and Aggregates, ASTM, 100 Barr Harbour Drive, West Conshohocken, PA 19428-2959
3. Concrete Plant Standards, CPMB 100-01, Twelfth Revision, August 2001, Concrete Plant Manufacturers Bureau, 900 Spring Street, Silver Spring, MA 20910
4. Truck Mixer, Agitator and Front Discharge Concrete Carrier Standards, TMMB 100-01, Truck Mixer Manufacturer's Bureau, 900 Spring Street, Silver Spring, MA 20910
5. Guide for Measuring, Mixing, Transporting, and Placing Concrete, ACI 304R-89, ACI Manual of Concrete Practice, Vol. 2, American Concrete Institute, P.O. Box 9094, Farmington Hills, MI 48333-9094
6. NRMCA Quality Control Manual – Section 3, Tenth Revision, 2009, Certification of Ready Mixed Concrete Production Facilities, National Ready Mixed Concrete Association, 900 Spring Street, Silver Spring, MA 20910
7. Certification of Concrete Production Facilities, Audit Checklist, November 2003, ARMCA, 9643A – 45th Avenue, Edmonton, AB T6E 5Z8
8. Ready Mix Concrete Production Facilities Certification Guide, January 2005, MRMCA, 169 Kingston Row, Winnipeg, MB R2M 0T1

VERIFICATION OF INSPECTION AND APPLICATION FOR CERTIFICATE

The undersigned, a registered Professional Engineer in the province of Saskatchewan and approved by the SRMCA, has conducted the inspection of the ready-mixed concrete plant described as:

 (Company Name)

 (Plant and Location)

and assets that, in his professional judgement, the information provided on this checklist is accurate and complete. Application is hereby made for the issuance of a Certificate for this plant, classified as follows:

- | <u>General Operation</u> | <u>Batching System</u> | <u>Recording (if any)</u> |
|---|---|---|
| <input type="checkbox"/> Truck Mixing | <input type="checkbox"/> Manual | <input type="checkbox"/> Cementitious Materials |
| <input type="checkbox"/> Central Mixing | <input type="checkbox"/> Semi-Automatic | <input type="checkbox"/> Aggregate |
| <input type="checkbox"/> Shrink Mixing | <input type="checkbox"/> Automatic | <input type="checkbox"/> Water |
| <input type="checkbox"/> Seasonal Restriction | | <input type="checkbox"/> Chemical Admixtures |

 (Inspection Date)

 (Signature of Professional Engineer)

 (Name, please print)

 (Address)

 (email address)

(seal)

**SCALE CHECKING AGREEMENT AND VOLUMETRIC BATCHING DEVICES
AND DISPENSERS**

(To be completed by ready-mixed concrete company official)

The undersigned agrees that all scales in the plant described will be checked at intervals not exceeding those prescribed in clause B.1.c by an authority acceptable to the SRMCA for conformance with sections B.1.b and B.1.c of the "Plant Certification Checklist". Any failure to meet the tolerance ($\pm 0.20\%$ of scale capacity throughout the range of use) will be promptly corrected. If, for any reason, correction is delayed, the batch weights of any concrete delivered will be adjusted to assure positively against a deficiency in unit cementitious content or an excess of water-cementitious ratio. The undersigned also agrees that the batching accuracy of all volumetric admixture dispensers and all volumetric water batching devices (including water meters) in the plant will be checked at intervals not exceeding 90 days for conformance with the batching accuracy requirements for liquid admixtures and water contained in items B.3.c and B.3.d of the checklist. Accuracy of devices for automated aggregate moisture measurement, when used, will be checked at intervals not exceeding 90 days (Item B.3.e). Any failure to meet the required batching accuracy will be corrected promptly. (Checks may be made by qualified company personnel, by outside agencies or by scale checking companies.)

(Signature of principal company official)

(Name and Title, please print)

(Plant description and location, please print)

(Company and address, please print)

(Date)

Note:
Please allow the SRMCA up to 30 days for processing and issuance of validation sticker.

TRUCK MIXER FLEET MAINTENANCE AGREEMENT

The undersigned agrees to inspect each unit in his/her truck mixer and agitator fleet at intervals not exceeding one year. Any unit not meeting the requirements of Clause D or E, as applicable, shall immediately be withdrawn from service and shall not be returned to service until it meets the requirements of this standard.

(Signature of principal company official)

(Name and Title, please print)

(Plant description and location, please print)

(Company and address, please print)

(Date)

Note:

Please allow the SRMCA up to 30 days for processing and issuance of validation sticker.

ENGINEER INFORMATION FORM

To be submitted to the SRMCA with completed copy of this "Plant Certification Checklist".
This form needs to be submitted once only.

Name: _____

Company: _____

Address: _____

	YES	NO
Is the Engineer a registered Professional Engineer in the province of Saskatchewan?	<input type="checkbox"/>	<input type="checkbox"/>
Does the individual have permission to offer consulting services in Saskatchewan?	<input type="checkbox"/>	<input type="checkbox"/>
Does the company have a valid Certificate of Authorization to practice professional engineering?	<input type="checkbox"/>	<input type="checkbox"/>
Has the Professional Engineer been approved by the SRMCA to perform plant certifications on it's behalf	<input type="checkbox"/>	<input type="checkbox"/>

Attach resume of experience

(seal)

(Signature)