

This section is pertinent to Certification of Delivery Vehicles in:

# APPROVED QUALITY PROGRAM<sup>©</sup>

FOR

READY MIXED CONCRETE PRODUCTION FACILITIES



## AUDIT and CHECK LIST

### Section 4

### INSPECTION AND CERTIFICATION OF DELIVERY VEHICLES

COMPANY NAME \_\_\_\_\_

CONTACT \_\_\_\_\_

# OF TRUCKS \_\_\_\_\_

INSPECTED BY \_\_\_\_\_

#### FOR RMCAO USE ONLY

NEW EXPIRY DATE \_\_\_\_\_

Date

Initial

RECEIVED \_\_\_\_\_

CHECKED \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



Ready Mixed Concrete  
Association of Ontario

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## 4. INSPECTION AND CERTIFICATION OF DELIVERY VEHICLES

### GENERAL

The company has the following two options for the inspection of the concrete delivery fleet:

**Option A** – In-house inspection of delivery fleet by a licensed mechanic - records and procedures will be reviewed by the Inspecting Engineer\*

**Option B** – Inspection of delivery fleet by the Inspecting Engineer\*

*\* Must be listed on the RMCAO Approved Auditors' List*

Truck mixers, agitators and non-agitating units used to deliver concrete from the plant will be evaluated and qualified as acceptable or unacceptable regarding conformance with the requirements given in 4.1, 4.2, 4.3 and 4.4 respectively. Agitators and non-agitating units are permitted only for central mixing operations.

#### **Truck Certification:**

While the Truck Certification is valid for a period of two (2) years, the “sticker” is only valid for a period of one (1) year (renewable).

#### **Mid-Term Documents:**

Prior to the issuance of the second year sticker, the submitted Summary of Fleet Condition must be verified by the Company Official and a copy returned to RMCAO.

#### **Option A - Delivery Fleet Inspection by the Company**

The company's licensed mechanic certifies to clause 4.1, 4.2, 4.3 and 4.4 that 100% of the trucks meet these requirements and submits a **Summary of Fleet Condition – Concrete Producer** (Section 4.7) electronically to RMCAO.

The company's licensed mechanic must evaluate all units of the delivery fleet used to deliver concrete from the plant for conformance with the requirements in Sections 4.1, 4.2, 4.3 and 4.4, as appropriate, on a yearly basis. The date shall reflect the date of inspection of the specific vehicle. Inspection of the truck shall be completed within a two-month window prior to the company's selected truck inspection date. The company official shall also sign this form.

A Certification Sticker will be issued by RMCAO for both truck mixers and agitating units, with an expiration date indicated. The sticker shall be applied to the interior of the rear window of the delivery unit.

On re-certification of a production facility the Summary of Fleet Condition must show that the truck mixers and agitators have been re-inspected at the required 2-year interval and maintained in compliance with requirements since the previous certification of that facility or within the previous 2 years, whichever is less.

The company shall maintain a yearly Summary of Fleet Condition (Section 4.7) for review by the Inspecting Engineer during the inspection of the production facility and keep this information on file for the period of certification.

When the company has several production facilities in an area where delivery vehicles are batched from different plants on the same or different days, it will be necessary to include all trucks that might be used at the plant in question on any given day in the Summary of Fleet Condition (Note 4). When trucks are rented/brokered from others they must be inspected prior to use if they are to be batched from the plant in question and must be RMCAO certified.

At the time of inspecting the production facility, the Inspecting Engineer shall accomplish the following:

- a) Review the records of vehicle inspection on the Summary of Fleet Condition.
- b) Randomly inspect 25% of the delivery vehicles located at the plant and will note these trucks as either **Pass** or **Fail** in **Section 4.8 Summary of Fleet Condition – INSPECTING ENGINEER**. If all inspected trucks meet the requirements of this audit, no further action is necessary. No more than one truck or 10% of the trucks inspected, whichever is greater, may fail in order to qualify for the Certificate. If defects are found, the Inspecting Engineer shall inspect an additional 25% until no defects are found or 100% of the vehicles have been inspected.
- c) Ensure that the company has obtained or has requested stickers from RMCAO for each vehicle. Certification stickers will only be issued to the passing vehicles.
- d) Confirm that the stickers are, or will be, affixed to the rear window of the delivery vehicle. The sticker identifies the truck number and an expiration date, which is not more than 2 years after the company's selected truck inspection date.

### **Option B - Delivery Fleet Inspection by the Inspecting Engineer**

The Inspecting Engineer shall conduct the inspection of 100% of the plants' trucks used to deliver concrete from the plant for conformance with the requirements of Sections 4.1, 4.2 and 4.3 as appropriate. Each unit will be listed as either **Pass** or **Fail** in **Section 4.8 Summary of Fleet Condition – INSPECTING ENGINEER**, which shall be returned with a completed Audit and Check List for the production facility (Note 5). RMCAO will issue a sticker for each acceptable unit listed with an expiration date indicated. The company shall affix the sticker to the rear window of the delivery unit.

**NOTE 4:** *If some or all of the trucks have been used in a previously certified plant, they will already have been inspected and will have stickers on the rear window of the delivery vehicle with an expiration date.*

**NOTE 5:** *Engineer to complete Summary of Fleet Condition (Section 4.8) for all trucks registered at plant and submit electronically to RMCAO <https://www.rmcao.org/certification/delivery-vehicle-certification>.*

## 4.1 Stationary Mixers

### Definition:

Mixers installed at a plant to partially or completely mix all ingredients of the concrete.

The mixer is capable of producing uniform concrete in the mixing time designated by the manufacturer or in the time designated in CSA A23.1. The concrete shall be considered uniform if it meets the requirements of CSA A23.1, "Determination of Within Batch Uniformity". A within batch uniformity test is only mandatory when discharging from a stationary mixer into an agitating or non-agitating unit.

## 4.2 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:

- 4.2.1 Charging and discharge openings and chute in good condition, free from appreciable accumulations of cement or concrete and with the hopper and chute surfaces clean and smooth.
- 4.2.2 Drum of such size that the rating as a mixer (in volume of mixed concrete) does not exceed those as listed in the chart in Appendix A. This requirement is met by all mixers carrying a rating plate of the Truck Mixer Manufacturers Bureau [TMMB].
- 4.2.3 Provided with a plate (secured on frame or door interior) showing the mixer manufacturer's recommended operating speed for mixing, and must have demonstrated the capability to operate satisfactorily at the recommended speed.
- 4.2.4 On units equipped to batch mixing water, equipment to be in proper working condition; gauge glasses clean and legibly graduated; water pump or injection system in good working order. *Site glasses are not required in freezing weather.*
- 4.2.5 In the event that the mixer blade wear exceeds 10%, or the mixer design has been significantly altered; the Inspecting Engineer will consider the mixer satisfactory only when that unit demonstrates compliance with the requirements of CSA A23.1 Table 13, "Determination of Within Batch Uniformity".

## 4.3 Agitating Units

### Definition:

Drums or containers, mounted on trucks or other vehicles, in which completely mixed concrete is kept sufficiently agitated during delivery to prevent segregation.

Each acceptable agitating unit shall conform to the following requirements (See Notes 6, 7, 8, 9):

- 4.3.1 Agitating units conform to the requirements for Truck Mixers except drum or container of such size that the rating as an agitator (in volume of mixed concrete) does not exceed the volumes as listed in the TMMB chart for capacities.
- 4.3.2 Agitating units be provided with a plate showing the mixer manufacturer's recommended operating speed for agitating.
- 4.3.3 Agitating units have the capability to operate at the recommended speed.

## 4.4 Non-Agitating Units

### Definition:

Containers, mounted on trucks or other vehicles, for delivering completely mixed concrete, not constructed or equipped to keep the mass of concrete agitated in the container.

***Non-agitating units will be inspected by the Concrete Producer only – See Appendix E.***

Each acceptable non-agitating unit shall conform to the following requirements:

- 4.4.1 Interior surfaces smooth and watertight (rounded corners are recommended but not mandatory).
- 4.4.2 Gates or other means provided for the controlled discharge of the concrete.
- 4.4.3 Interior free from excessive accumulation of hardened concrete and from obstruction or deterioration sufficient to interfere with the proper discharge of the concrete.

1<sup>st</sup> Inspection  
2<sup>nd</sup> Inspection

**4.5 Option A – Delivery Fleet Inspection by the Company**

- 4.5.1 The delivery fleet inspection records show that not more than one unit or 10 percent of the units, whichever is greater; to be used at the plant fails to meet requirements. [ ] [ ]
- 4.5.2 The delivery fleet used on a normal business day during the period when the plant facilities are being inspected demonstrate compliance with requirements. [ ] [ ]
- 4.5.3 The company maintains records that indicate compliance with the requirements of this Check List for the inspection of delivery vehicles. [ ] [ ]
- 4.5.4 The company has updated the Summary of Fleet Condition (Section 4.7) and submitted a copy electronically to RMCAO. [ ] [ ]
- 4.5.5 The Inspecting Engineer has randomly inspected 25% of the delivery vehicles located at the plant and listed the units on form 4.8 Summary of Fleet Condition [ ] [ ]

**OR**

**4.6 Option B – Delivery Fleet Inspection by the Inspecting Engineer**

- 4.6.1 The delivery fleet inspection indicates that not more than one unit or 10 percent of the units, whichever is greater; to be used at the plant fails to meet requirements. [ ] [ ]
- 4.6.2 The delivery fleet used on a normal business day during the period when the plant facilities are being inspected demonstrate compliance with requirements. [ ] [ ]
- 4.6.3 The company maintains records that indicate compliance with the requirements of this Check List for the inspection of delivery vehicles. [ ] [ ]
- 4.6.4 The Inspecting Engineer has updated the Summary of Fleet Condition (Section 4.8) and submitted a copy electronically to RMCAO. [ ] [ ]

**NOTE 6:** *The Inspecting Engineer will evaluate all available truck mixers and agitating units used to deliver concrete from the plant. The evaluation will be based on a study of the records of truck mixer purchase, inspection and maintenance. Units that meet the above requirements will be considered satisfactory.*

**NOTE 7:** *Broker Trucks may also be used for concrete mixing and delivery provided each truck used has a valid brokered truck certification sticker, obtained only through the RMCAO Sub-Contracted Brokered Truck Certification Program.*


**NOTE 8:** *New concrete trucks purchased by the concrete producer conform to the requirements of clause 4.2 & 4.3 and do not require a truck inspection. The concrete producer shall immediately notify RMCAO of the new truck purchase and shall supply RMCAO with the truck number. The concrete producer's truck records will be updated and a certification sticker will be issued for the truck.*

**NOTE 9:** *Used concrete trucks purchased by the concrete producer must conform to the requirements of clause 4.2 & 4.3 and requires a truck inspection by either a third party engineer or company personnel. The concrete producer shall then submit an updated Summary of Fleet Condition (Section 4.7 or 4.8) to RMCAO.*

#### 4.7 Summary of Fleet Condition – CONCRETE PRODUCER

The **Company** shall complete this form and retain it on file. The Company shall maintain a Summary of Fleet Condition listing all delivery vehicles they operate. This record shall be presented to the Inspecting Engineer during the visit to inspect the production facility. When following Option A, the company shall sign and return it with the completed Check List to RMCAO, who will then issue the Certification Sticker(s).

(Excel Spreadsheet at <https://www.rmcao.org/certification/delivery-vehicle-certification>)

<b>Company Name:</b>								<b>Shaded areas for RMCAO use only</b>   <b>CONCRETE ONTARIO</b> Ready Mixed Concrete Association of Ontario Tel: 905-564-2726 Fax: 905-564-5680 <a href="mailto:info@concreteontario.org">info@concreteontario.org</a> <a href="http://www.concreteontario.org">www.concreteontario.org</a>	
<b>Company Official's Full Name:</b>									
<b>Company Official's Signature:</b>									
<b>Company Official's Address:</b>									
<b>City/Prov:</b>				<b>Postal Code:</b>					
<b>Phone:</b>		<b>Fax:</b>		<b>Email:</b>					
<b>Inspected By (Name):</b>				<b>Lic. Mechanic ID#:</b>					
<b>Inspected By (Signature):</b>									
<b>Company's Selected Truck Inspection Date:</b>				<b>New Expiration Date:</b>					
Truck No.	Prior Cert. Expiry Date	P or F†		M/A*	Rated Size (m³)	F (Front) R (Rear)	Mixer Manufacturer		Inspection Date (d/m/y)
		1 <sup>st</sup> Insp	2 <sup>nd</sup> Insp						

Use additional sheets as necessary and number the sheets  
 \* **M** – Truck Mixer Units, **A** – Agitating Units  
 † **P** – (pass) if the requirement is met; **F** – (failed) if the requirement is not met. Include subsection numbers 4.2.1, 4.2.2, 4.2.3 4.2.4 or 4.2.5 to identify the requirement the unit fails to meet

**4.8 Summary of Fleet Condition – INSPECTING ENGINEER**

The **Inspecting Engineer** (must be listed on the RMCAO Approved Auditors’ List) shall complete this form, sign and return it with the completed Check List to RMCAO, who will then issue the Certification Sticker for all units that are acceptable.

Full truck inspections shall be completed as required:

- 1. Option A – Delivery Fleet Inspection by the Company**  
The Inspecting Engineer shall list 25% of the delivery vehicles located at the plant.
- 2. Option B – Delivery Fleet Inspection by the Inspecting Engineer**  
The Inspecting Engineer shall list 100% of the trucks located at this plant.

**Total number of units available for use:** \_\_\_\_\_  
**Number of units checked and found acceptable and/or have certification stickers:** \_\_\_\_\_  
**Number of units checked and found unacceptable:** \_\_\_\_\_

(Excel Spreadsheet on <https://www.rmcao.org/certification/delivery-vehicle-certification>)

Truck No.	Prior Cert. Exp Date	P or F†		M/A*	Rated Size (m³)	F (Front) R (Rear)	Mixer Manufacturer	Inspection Date (d/m/y)	Shaded areas for RMCAO use only
		1st Insp	2nd Insp						RMCAO Cert. ID No.

Use additional sheets as necessary and number the sheets  
 \* **M** – Truck Mixer Units, **A** – Agitating Units  
 † **P** – (pass) if the requirement is met; **F** – (failed) if the requirement is not met. Include subsection numbers 4.2.1, 4.2.2, 4.2.3 4.2.4 or 4.2.5 to identify the requirement the unit fails to meet. If the Concrete Producer has elected to self-inspect the trucks, please list “**N/A**” in this column for all trucks that did not require an engineer inspection.

Signature of Inspecting Engineer \_\_\_\_\_ Print Name \_\_\_\_\_ Date of Inspection \_\_\_\_\_



**APPENDIX A: Truck Mixer Standard Sizes**

<b>TABLE No. 1 --- Standard Sizes</b>					
<b>Maximum Capacity of Mixed Concrete</b>		<b>Gross Drum Volume Limits</b>			
		<b>Rear Discharge Only <sup>(3)</sup></b>		<b>Rear and Front Discharge</b>	
<b>Cubic Metres <sup>(2)</sup></b>		<b>Maximum</b>		<b>Minimum</b>	
<u>As Mixer</u>	<u>As Agitator <sup>(1)</sup></u>	<u>Cubic Feet</u>	<u>Cubic Metres <sup>(2)</sup></u>	<u>Cubic Feet</u>	<u>Cubic Metres <sup>(2)</sup></u>
5.4	7.1	310	8.8	306	8.7
6.1	8.0	356	10.1	352	10.0
6.5	8.6	380	10.8	376	10.6
6.9	9.2	403	11.4	399	11.3
7.3	9.7	427	12.1	423	12.0
7.6	10.1	450	12.7	446	12.6
8.0	10.7	474	13.4	470	13.3
8.4	11.3	497	14.1	493	14.0
8.8	11.9	521	14.8	517	14.6
9.2	12.2	544	15.4	540	15.3
9.6	12.8	568	16.1	564	16.0
9.9	13.4	591	16.7	587	16.6
10.7	14.5	638	18.1	634	18.0
11.5	15.5	685	19.4	681	19.3

<sup>(1)</sup> Maximum agitator capacity may be less, as designated on manufacturer's data plate.

<sup>(2)</sup> Metric equivalents provided for information and may be approximate.

<sup>(3)</sup> In 1991, the Bureau voted to reinstate the maximum gross drum volume requirements for rear discharge inclined axis truck mixers only, to be effective January 1, 1994.