

*Certification of Ready Mixed
Concrete Production Facilities*



Section 5

Inspection & Certification of Delivery Vehicles

This section is pertinent to Certification of Delivery Fleet in:

Quality Control Manual – Section 3

Certification of Ready Mixed Concrete Production Facilities

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5. DELIVERY FLEET INSPECTION

General

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

Option A – In-house inspection of delivery fleet and review of records and procedures by the Inspecting Engineer

Option B – Inspection of delivery fleet by the Inspecting Engineer

Truck mixers, agitators and nonagitating units used to deliver concrete from the plant will be evaluated and qualified as acceptable or unacceptable regarding conformance with the requirements given in 5.1, 5.2 and 5.3 respectively. Agitators and non-agitating units are permitted only for central mixing operations. Certification for the plant will not be granted if:

(1) For a truck-mixing or shrink-mixing operation, 10 percent or more of the total truck mixers are listed as unacceptable;

OR

(2) For a central-mixing operation, 10 percent or more of the total truck mixers, agitators and non-agitating units are listed as unacceptable.

It is assumed that purchasers of concrete will forbid delivery in units that are allowed to remain defective but will permit use of new units added to the fleet or of units restored to acceptable condition subsequent to execution of the Check List. It is assumed that units qualifying as truck mixers will also qualify as agitators.

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 Section 5.6 and in the **Fleet Inspection Reporting Form**. See Note 25. When trucks are rented from others they must be inspected prior to use if they are to be batched from the plant in question. This also applies to vehicles owned by others that operate from the plant. If they are to be used for more than 1-month duration they must possess a certification card. NRMCA recognizes that the delivery vehicle is an integral part of the production process and cannot issue certification for production facilities without certified vehicles.

Note 25: *If some or all of the trucks have been used in a previously certified plant they will already have been inspected and will have cards with an expiration date.*

Inspections of delivery vehicles by State Highway or other agencies may be used as a basis for applying for NRMCA certification cards, if those inspections include all of the items required by this Check List.

Option A – Delivery Fleet Inspection by the Company

This option is provided to allow inspection of the delivery fleet as a part of the routine maintenance and quality control program of the company and to avoid the necessity for the Inspecting Engineer to physically inspect all delivery vehicles in a very short time period. It also helps in situations when delivery vehicles operate from several concrete plants owned by the company. To assure the credibility of the in-house inspection the program must be under the direction and supervision of a responsible **Company Official** who monitors and routinely participates in the vehicle inspection process to ensure that established company policies are followed in the process. The **personnel inspecting delivery vehicles** shall be under the supervision of the company official or on contract with the company.

Personnel inspecting delivery vehicles should be familiar with the requirements of Section 5 in conducting the inspection. A **Statement of Qualifications** shall be maintained for all personnel involved in the delivery vehicle inspection process. See qualification requirements in Section 10.3 and statement of qualifications in 10.6.

The Statement of Qualifications for all personnel involved with delivery vehicle inspection shall be provided to the Inspecting Engineer during the inspection of the production facility. The Inspecting Engineer shall interview the personnel and witness a demonstration of inspection procedures on at least two mixers or agitators that have seen significant use and if previously inspected, in the latter half of their 14-month inspection period. See Note 26.

Note 26: *The demonstration of delivery vehicle inspection procedures is an essential requirement to assure the Inspecting Engineer that defective units that adversely affect the quality of delivered concrete are properly identified and corrective actions, if any, are made. The inspecting engineer may waive the demonstration in lieu of previous experience or knowledge of the Company's personnel and procedures.*

Designees of the Company Official must evaluate all units of the delivery fleet used to deliver concrete from the plant for conformance with the requirements in Sections 5.1, 5.2 and 5.3, as appropriate. The inspection for each vehicle shall be documented on the **Fleet Inspection Reporting Form**. The personnel conducting the inspection shall indicate the date of inspection and initial all pertinent items. The date shall reflect the date of inspection of the specific vehicle. The company official shall also be indicated on this form.

A completed **Fleet Inspection Reporting Form** shall be sent to NRMCA for issuance of **Delivery Fleet Certification Card** for each delivery unit. A certification card will be issued by NRMCA with a unique certification number and expiration date indicated. The expiration date on the card will be 14 months from the date of inspection of the specific unit. The card shall be applied to the driver side windshield or door of the delivery unit. See Note 27. The Company shall retain a copy of the Fleet Inspection Reporting Form for all delivery units with the certification number and expiration date.

Note 27: *The 14 month period is used to allow some flexibility in complying with a nominal 1-year inspection period and to allow for sufficient time to order certification cards. Some companies do not permit items on the vehicle's windshield.*

On re-certification of a production facility the Inspector shall ensure that delivery vehicles operating from the plant have maintained current certification or have applied for certification cards.

The company shall maintain a **Fleet Inspection Reporting Form** for review by the Inspecting Engineer during the inspection of the production facility. The **Fleet Inspection Reporting Form** shall be maintained on file for the period of certification.

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

- a) Review the records of vehicle inspection, including the Fleet Inspection Reporting Form for all units
- b) Review the Statement of Qualifications for the personnel conducting the vehicle inspection
- c) Interview the personnel conducting the vehicle inspection and witness the demonstration of vehicle inspection of at least two units.
- d) Ensure that the company has obtained or has requested cards for each vehicle from NRMCA.
- e) The cards are, or will be, attached to the driver-side door or windshield of the delivery vehicle. The card identifies the truck number and an expiration date, which is not more than 14 months after inspection date of the vehicle.
- f) Complete Sections 5.4 and 5.6 of the Check List.

Option B – Delivery Fleet Inspection by the Inspecting Engineer

The Inspecting Engineer shall conduct the inspection of the all units of the delivery fleet used to deliver concrete from the plant for conformance with the requirements of (Sections 5.1, 5.2 and 5.3 as appropriate). Each unit will be listed in the **Fleet Inspection Reporting Form**, which shall be returned with a completed Check List for the production facility or separately to certify the delivery vehicles. NRMCA will issue a card for each acceptable unit listed with an expiration date indicated. The expiration date on the card will be 14 months from the date of inspection. The company shall attach the card to the driver side windshield or door of the delivery unit.

Since the certification of the concrete production facility is valid for a period of 2 years, the vehicles shall be re-inspected during the certification period of the production facility to maintain its certification status. See Note 27.

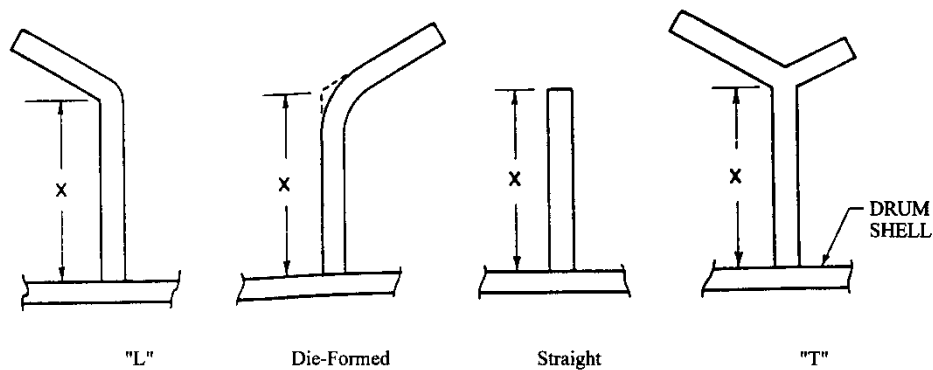
The Inspecting Engineer shall complete Sections 5.5 and 5.6 of this Check List.

5.1 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:

- 5.1.1 Interior condition satisfactory: no appreciable accumulation of hardened concrete; blades free of excessive wear. Blade wear shall be checked at the point of maximum drum diameter nearest to the drum head. When the height of the blade at this point, measured from the drum shell, is less than 90 percent of the original radial height (dimension “X” in sketch of applicable blade type), the blade is considered excessively worn. The manufacturer of the mixer will furnish original blade dimensions on request. See Note 28.
- 5.1.2 Charging and discharge openings and chute in good condition: free from appreciable accumulations of cement or concrete; hopper and chute surfaces clean and smooth.
- 5.1.3 Drum or container of such size that the rating as a mixer (in volume of mixed concrete) does not exceed 63 percent of the gross volume of the mixer, disregarding blades. (This requirement is met by all mixers carrying a rating plate of the Truck Mixer Manufacturer Bureau). See Note 28.
- 5.1.4 Provided with a plate showing the mixer manufacturer’s recommended operating speed for mixing, which must be in the range of not less than 4 nor more than 22 rpm; demonstrated capability to operate satisfactorily a speed within recommended range.
- 5.1.5 Equipped with a counter in working condition to indicate the number of revolutions of the drum or blades.
- 5.1.6 On units equipped to batch mixing water, equipment to be in proper working condition: gauge glasses or water meters clean and legibly graduated; water pump or injection system in good working order with nozzles unobstructed and without leakage into mixer; water measurement spot-checked and found accurate to within ± 1 gallon for sight gauges ± 2 percent of target water for water meters on truck mixers. See Note 10.



MIXER BLADE TYPES

Note 28: For truck mixers that do not bear a rating plate of the Truck Mixer Manufacturer Bureau, documentation shall be provided to the inspecting engineer to verify compliance of the rated mixing capacity and mixing uniformity provision of the Standards of the Truck Mixers Manufacturers Bureau – TMMB 100-06 or later. Verification of ability to uniformly mix concrete shall be a one-time evaluation performed on one size of a truck mixer of the same design. Documentation provided by the equipment manufacturer is acceptable.

5.2 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.

Each acceptable agitator shall conform to the following requirements:

- 5.2.1 Interior condition satisfactory: no appreciable accumulation of hardened concrete.
- 5.2.2 Charging and discharge openings and chute in good condition: free from appreciable accumulations of cement or concrete; hopper and chute surfaces clean and smooth.
- 5.2.3 Drum or container of such size that the rating as an agitator (in volume of mixed concrete) does not exceed 80 percent of the gross volume of the container, disregarding blades. (This requirement is met by all units carrying a rating plate of the Truck Mixers Manufacturers Bureau.)
- 5.2.4 Provided with a plate showing the mixer manufacturer's recommended maximum agitating speed which must not exceed 6 rpm; demonstrated capability to operate satisfactorily at the recommended speed.
- 5.2.5 Equipped with a counter in working condition to indicate the number of revolutions of the drum or blades.

5.3 Non-agitating Units

Definition: Containers, mounted on trucks or other vehicles, for delivering central-mixed concrete, not constructed or equipped to keep the mass of concrete in motion in the container.

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

- 5.3.1 Interior surface smooth and watertight, with rounded corners.
- 5.3.2 Gates or other means provided to control the concrete discharge.
- 5.3.3 Interior free from excessive accumulation of hardened concrete and from other obstruction or deterioration sufficient to interfere with proper discharge of concrete.

5.4 Option A – Delivery Fleet Inspection by the Company

5.4.1 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. Report details in 5.6 ☐

5.4.2 The delivery fleet used on a normal business day during the period when the plant facilities are being inspected demonstrate compliance with requirements. ☐

5.4.3 The Company maintains records that indicate compliance with the requirements of this Check List for the inspection of delivery vehicles ☐

5.4.4 Personnel responsible for vehicle inspection have demonstrated knowledge of the required inspection procedures and requirements of (Sections 5.1, 5.2 and 5.3) of this Check List, as appropriate. ☐

5.4.5 Personnel responsible for vehicle inspection have demonstrated appropriate judgment of acceptable blade wear and accumulations of hardened concrete. ☐

OR

5.5 Option B – Delivery Fleet Inspection by the Inspecting Engineer

5.5.1 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. Report details in 5.6 ☐

5.5.2 The delivery fleet used on a normal business day during the period when the plant facilities are being inspected demonstrate compliance with requirements. ☐

5.6 Summary of Fleet Operating from Plant

Number of units available for use _____

Number of units certified or submitted for certification _____

Number of Truck Mixers _____

Agitators _____

Non-agitating Units _____

Section 5.6 validates indications in 5.4.1 or 5.5.1

5.7 Inspection Record of Delivery Fleet (for Option A and B in Section 5)

Inspection of delivery fleets should be completed on a **Fleet Inspection Reporting Form**. NRMCA provides a tabular format that can be obtained from the NRMCA website or by contacting the NRMCA staff. Inspection of delivery fleet can be submitted on a plant basis or for units operating from several plants.

For Option A in Section 5, the Company shall complete the Fleet Inspection Reporting Form to include the name of the person(s) inspecting trucks and the name of the company official with oversight. The completed sheet should be sent to NRMCA when requesting certification cards. Trucks that have previously been certified should include their prior Certification ID. The company shall maintain a current Fleet Inspection Reporting Form for all delivery vehicles operating from the production facility with NRMCA certification. This record shall be presented to the Inspecting Engineer during the visit to inspect the production facility.

For Option B in Section 5, the Inspecting Engineer shall complete the Fleet Inspection Reporting Form. The completed form should be sent to NRMCA when requesting certification cards. Trucks that have previously been certified should include their prior Certification ID.

NRMCA will issue the Delivery Fleet Certification Cards for all units that are acceptable with an expiration date 14 months after the date of inspection. Certification cards will be sent to the submitting entity – either the Company Official or the Inspector, unless otherwise notified.

The **Fleet Inspection Reporting Form** can be downloaded from the Plant Certification section of the NRMCA website: <http://www.nrmca.org>. For trucks that have been previously certified, include the prior certification ID from the certification card. All required information should be marked with “P” for pass or “F” for fail for each section and delivery unit. The individual performing the inspection should include their initials for each vehicle being submitted for certification.

Copies of Fleet Inspection Reporting Form should be mailed, faxed or emailed

NRMCA Engineering Division, 900 Spring Street, Silver Spring, MD 20910. Fax: (240) 485-1172

See NRMCA’s website for email instructions.