



## **Purpose**

The purpose of this Construction Bulletin is to inform Contractors and WSDOT staff of the revised requirements for concrete delivery E-tickets. This construction bulletin applies to all contracts using E-tickets.

## **Background**

Standard Specifications sections 1-09.2(1)A Electronic Delivery Management System (E-Ticketing) and 6-02.3(5)B Certification of Compliance together require the use of E-ticketing and define what is to be reported on the delivery ticket for concrete. The initial revolution counter number for the delivery truck has been included in the 6-02.3(5)B requirements for many years. Upon arrival at the job site, and just prior to discharge, inspectors were to make note of the revolution count number on the truck and subtract the initial revolution count number reported on the Certification of Compliance to determine how many revolutions the mix went through prior to delivery to the job site. The initial revolution count on a truck is typically not documented by an automated process. Suppliers have not been including the initial count on E-tickets due to the administration burden due to manual entry.

Most nationwide specifications limit the truck drum revolution counts before discharge and WSDOT, until now, has also limited the revolutions. The practice started as early as the 1930s and became part of industry practice in 1958 with the creation of an American Society for Testing and Materials (ASTM) standards to ensure the quality and performance of concrete. There have been significant changes in the concrete industry since these revolution limits were first implemented by ASTM in 1958. In 2016, the American Concrete Institute published the results of its study<sup>(1)</sup> in which they completed research to determine if revolution limits are still applicable to today's concrete. They determined that in most cases, revolutions have no detrimental effects on the mechanical properties and durability characteristics of concrete as long as the concrete exhibits adequate workability to be properly placed and cast.

<sup>(1)</sup> Jiaming Chen and David Trejo, (2016, January). Influence of Truck Drum Revolution Count on Fresh and Hardened Concrete Characteristics. ACI - Materials Journal, 25-34.  
doi:10.14359/51687978



## **Guidance**

As of November 3<sup>rd</sup> 2025, WSDOT will no longer monitor revolutions for ready-mix concrete delivered by transit trucks except for transit-mixed concrete or shrink-mixed concrete.

Transit-mixed concrete is a method where components are batched at a plant, loaded into the truck, and then fully mixed inside the truck as it travels to the site. Shrink-mixed concrete is commonly used for smaller batches of concrete where a specialized volumetric or mini-barrel truck carries separate bins of raw ingredients to the site, where the materials are then combined and mixing occurs in a drum. Both transit-mixed and shrink-mixed methods rely on a minimum of 70 revolutions at mixing speed to thoroughly mix the concrete. Volumetric mixers or mobile mixers using mixing augers without a mixing drum are not subject to the minimum revolution requirement. Drum mixing speed is typically 10 to 15 rpm while the agitation speed for transit vehicles is a lower speed rotation, around 2 rpm. Agitation is used to maintain the concrete's uniformity and prevent initial setting during transport. If a project is using transit-mixed concrete or shrink-mixed concrete, the Inspector will need to ensure that the concrete has been agitated at mixing speed in the drum for the required number of revolutions and document that in their Inspector's Daily Report and on their Inspector notes portion of the E-ticket upon receiving it. For ready-mix concrete delivered by transit vehicles no notations about drum revolutions are required.

## **Resources**

- Standard Specification 1-09.2(1)A – Electronic Delivery Management System (E-Ticketing)
- Standard Specification 6-02.3(5)B – Certification of Compliance
- General Special Provision 1-09.2(1)A.OPT2.GR1
- General Special Provision 6-02.3(5)B.OPT1.2027.GR6

## **Implementation Plan**

The guidance provided herein shall apply to all projects including Design-build projects that utilize E-Ticketing for ready-mix concrete delivery. Any contract using e-ticketing for Concrete, which does not include the General Special Provision to remove the Initial revolution counter reading from 6-02.3(5)B, shall issue a no-cost change order to update 6-02.3(5)B.

## **Additional Information**

None



**Washington State  
Department of Transportation**

# CONSTRUCTION BULLETIN

State Construction Office  
Engineering and Regional Operations

**Removal of Revolution Counter on  
Ready-Mix E-Tickets**

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## Comments

None