

HOT MIX ASPHALT – PLANT METHODS AND EQUIPMENT – TICKETLESS ASPHALT.

(REV 1-7-16)

SUBARTICLE 320-3.2 is deleted and the following substituted:

320-3.2 Electronic Weigh Systems: Equip the asphalt plant with an electronic weigh system that: 1) has an automatic printout, data collection, and data upload capability meeting the requirements below, 2) is certified every six months by an approved certified scale technician, and 3) meets monthly comparison checks with certified truck scales as specified in 320-3.2.3. Weigh all plant produced hot mix asphalt on the electronic weigh system, regardless of the method of measurement for payment.

As a minimum, the following must be included in the delivery ticket information, whether printed or in electronic format:

- a. Sequential load number
- b. Project number
- c. Date
- d. Name and location of plant
- e. Mix design number
- f. Place for hand-recording mix temperature
- g. Truck number
- h. Gross, tare, and net tonnage per truck (as applicable)
- i. Daily total tonnage of mix for the mix design

320-3.2.1 Ticketless Asphalt System: At the Pre-Paving meeting, indicate which method will be used to electronically deliver the ticket information to the paving site: either use barcodes with a printed ticket according to section 320-3.2.1.1 or use the Internet, with or without a printed ticket, according to section 320-3.2.1.2.

After each truck is loaded, electronically capture and use a web service to upload the ticket information to the designated database. The Department will provide the details necessary to implement this upload. The electronic ticket information must contain the following fields in the formats shown here:

Barcode Field	Description	Example
Load Timestamp	Actual Date and time truck is loaded (mmddyyyyhhmmA)	050720120717A for 5/7/2012 at 7:17 am
Plant ID	FDOT Plant ID	A0123
Ticket No.	Plant ticket number	272284
Truck No.	Truck ID unique to each truck used during the shift	314
FPID	FDOT Financial Project Number (#####-##-###)	123456-1-52-01
Mix Type	Format consistent with FDOT description	SP-12.5 TL-D Fine Poly
Mix No	FDOT Assigned Mix Design Number with Format and	SPM 11-12345B

	spacing consistent with Department Database entries	
Gmm or Gsb	Title depending on mix type and No.	Gmm
Gmm or Gsb Value	-	2.491
Sequential load number	-	23
Gross Tons	Gross Tons for the total truck	34.46
Tare	before loading truck	13.16
Net Tons	Net tons for the load (Net Tons = Gross Tons – Tare)	21.30
Cumulative Tons	cumulative tonnage for current paving operation	484.35

320-3.2.1.1 Electronic Ticket Delivery using a Barcode: Include a 2D barcode printed on the ticket or printed on a self-adhesive label that is automatically printed as the ticket is printed. If a self-adhesive label is used, the label must be affixed to the ticket before the ticket is given to the driver. Format the barcode so that when scanned a text string is produced that includes the required information above. That text string must begin with a “@”, end with a “^”, and have each field separated by a “~”.

Example: The information from the above Example column above should be coded such that when scanned would generate the following text string:

@~050720120717A~A0123~272284~314~123456-1-52-01~SP-12.5 TL-D Fine Poly~SPM 11-12345B~Gmm~2.491~23~34.46~13.16~21.30~484.35~^

Send the printed delivery ticket with the 2D barcode to the project site with the delivery truck. The ticket must be presented for scanning prior to or during unloading.

320-3.2.1.2 Electronic Ticket Delivery using Internet Access at the paving site: This option may be used if the following conditions are met: 1) Internet access is available at the paving site; 2) all trucks during a shift have a unique and clearly identifiable truck ID; and 3) the contractor has developed a clear Ticketless Asphalt backup plan to ensure required QC functions continue in the event Internet access becomes unavailable in the field after shipping has begun. Tickets that are not entered into the Ticketless Asphalt Inspector Application when the truck unloads must be entered into the electronic system later. Provide the Ticketless Asphalt backup plan at the Pre-Paving meeting.

If the above conditions are met, asphalt delivery trucks are not required to have a printed truck ticket. When delivery tickets are not utilized, maintain a log in the truck to record plant temperatures. -Communicate with the roadway inspector whenever a temperature is recorded at the plant so that the roadway inspector can view the log and record the plant temperature into the Ticketless Asphalt Inspector Application. If the above conditions will be met for the entire project, then the plant is not required to have the capability to print barcodes. However, if Internet access at the paving site becomes unavailable for more than one shift, barcodes are required to deliver the electronic ticket information, according to section 320-3.2.1.1, until Internet access at the paving site has been restored.

320-3.2.2: Utilize any one of the following three electronic weigh systems.

320-3.2.2.1 Electronic Weigh System on the Truck Scales: Provide an electronic weigh system on all truck scales, which is equipped with an automatic recordation system that is approved by the Engineer. Use scales of the type that directly indicates the total weight of the loaded truck. Use scales meeting the requirements for accuracy, condition, etc., of the Bureau of Weights and Measures of the Florida Department of Agriculture, and re-certify such fact every six months, either by the Bureau of Weights and Measures or by a registered scale technician.

320-3.2.2.2 Electronic Weigh System on Hoppers Beneath a Surge or Storage Bin: Provide an electronic weigh system on the hopper (hopper scales or load cells) beneath the surge or storage bin, which is equipped with an automatic recordation system approved by the Engineer.

320-3.2.2.3 Automatic Batch Plants with Printout: For batch plants, provide an approved automatic printer system which will print the individual or cumulative weights of aggregate and liquid asphalt delivered to the pugmill and the total net weight of the asphalt mix measured by hopper scales or load cell type scales. Use the automatic printer system only in conjunction with automatic batching and mixing control systems that have been approved by the Engineer.

320-3.2.3 Monthly Electronic Weigh System Comparison Checks: Check the accuracy of the electronic weighing system at the commencement of production and thereafter at least every 30 days during production by one of the following two methods and maintain a record of the weights in the Scale Check Worksheet.

320-3.2.3.1. Electronic Weigh System on Truck Scales:

a. The Engineer will randomly select a loaded truck of asphalt mix, a loaded aggregate haul truck, or another vehicle type approved by the Engineer and record the truck number and gross weight from the Contractor's delivery ticket.

b. Weigh the selected truck on a certified truck scale, which is not owned by the Contractor and record the gross weight for the comparison check. If another certified truck scale is not available, the Engineer may permit another set of certified truck scales owned by the Contractor to be used. The Engineer may elect to witness the scale check.

c. The gross weight of the loaded truck as shown on the Contractor's delivery ticket will be compared to the gross weight of the loaded truck from the other certified truck scale. The maximum permissible deviation is 8 pounds per ton of load, based on the certified truck scale weight.

d. If the distance from the asphalt plant to the nearest certified truck scale is enough for fuel consumption to affect the accuracy of the comparison checks, a fuel adjustment may be calculated by using the truck odometer readings for the distance measurement, and 6.1 miles per gallon for the fuel consumption rate, and 115 ounces per gallon for fuel weight.

e. During production, when an additional certified truck scale is not available for comparison checks, the Engineer may permit the Contractor to weigh the truck on his certified scales used during production and then weigh it on another certified truck scale, as soon the other scale is available for the comparison checks.

In addition to the periodic checks as specified above, check the scales at any time the accuracy of the scales becomes questionable. When such inaccuracy does not appear to be sufficient to seriously affect the weighing operations, the Engineer will allow a

period of two calendar days for the Contractor to conduct the required scale check. However, in the event the indicated inaccuracy is sufficient to seriously affect the mixture, the Engineer may require immediate shut-down until the accuracy of the scales has been checked and necessary corrections have been made. Include the cost of all scale checks in the bid price for asphalt concrete, at no additional cost to the Department.

320-3.2.3.2. Electronic Weigh System on Hoppers Beneath a Surge or Storage Bin and Automatic Batch Plants with Printout:

a. The Engineer will randomly select a loaded truck of asphalt mix and record the truck number, and the net weight of the asphalt mix from the Contractor's delivery ticket.

b. Weigh the selected truck on a certified truck scale, which is not owned by the Contractor and record the gross weight for the comparison check. If another certified truck scale is not available, the Engineer may permit another set of certified truck scales owned by the Contractor to be used. The Engineer may elect to witness the scale check.

c. Deliver the asphalt mix to the project, then weigh the selected empty truck on the same certified truck scales. Record the tare weight of the truck.

d. Compare the net weight of the asphalt mix from the delivery ticket to the calculated net weight of the asphalt mix as determined by the certified truck scale weights. The maximum permissible deviation is 8 pounds per ton of load, based on the certified truck scale weight.

e. Use the fuel adjustment as specified in 320-3.2.4.1(d), when the distance from the asphalt plant to the nearest certified truck scale is enough for fuel consumption to affect the accuracy of the comparison checks.

f. During production, when an additional certified truck scale is not available for comparison checks, the Engineer may permit the Contractor to load a truck with aggregate from the pugmill, surge or storage bin, and follow the above procedures to conduct the comparison checks as soon as certified truck scale is available.

If the check shows a greater difference than the tolerance specified above, then recheck on a second set of certified scales. If the check and recheck indicate that the printed weight is out of tolerance, have a certified scale technician check the electronic weigh system and certify the accuracy of the printer. While the system is out of tolerance and before its adjustment, the Engineer may allow the Contractor to continue production only if provisions are made to use a set of certified truck scales to determine the truck weights.