## Section 109. — MEASUREMENT AND PAYMENT

06/15/22– FP-14

WFL Specification 04/02/21 1090010

Include the following in all projects.

### 109.01 Measurement of Work.

Delete the text of this Subsection and substitute the following:

Take and record measurements and perform calculations to determine pay quantities for invoicing for work performed. Take or convert all measurements of work according to U.S. Customary (Metric) measure.

Unless otherwise specified, measure when the work is in-place and complete according to the contract. Measure the actual work performed, except do not measure work outside the design limits or other adjusted or specified limits (staked limits). Measure structures to the lines according to the plans or to approved lines adjusted to fit field conditions.

Take measurements as described in Subsection 109.02 unless otherwise modified by the Measurement Subsection of the Section controlling the work being performed. For individual pay items, the decimal accuracy for measurement of quantities will be determined by the CO. Decimal accuracy for measurement is one decimal beyond the accuracy of the quantity for payment.

Remeasure quantities if it has been determined that a portion of the work is acceptable, but has not been completed to the lines, grades, and dimensions shown in the plans or established by the CO.

Submit measurement notes within 24 hours of completing work that is in-place and complete according to the contract. For on-going work, submit measurement notes weekly. When work is not complete, identify the measurement as being an interim measurement. Submit the final measurement when the installation is completed. Measurement notes form the basis of the Government’s receiving report; see Subsection 109.08(d). For lump sum items, submit documentation that supports invoiced progress payments each month.

Use an acceptable format for measurement notes. Include the following minimum information:

**(a)** Project number and name;

**(b)** Line item number, pay item number and description;

**(c)** Date the work was performed;

**(d)** Location of the work;

**(e)** Measured quantity;

**(f)** Calculations made to arrive at the quantity;

**(g)** Supporting sketches and details as needed to clearly define the work performed and the quantity measured;

**(h)** Names of persons measuring the work;

**(i)** Identification as to whether the measurement is interim or final; and

**(j)** Signed certification statement by the persons taking the measurements and performing the calculations, that the measurements and calculations are correct.

Prepare pay item measurement notes on Form FHWA 17-348 *Daily Record of Measurement and Payment*. An electronic version of the form is available at:

 <https://highways.dot.gov/federal-lands/construction/forms-wfl>.

WFL Specification 09/17/8 1090020

Include the following in all projects.

### 109.02 Measurement Terms and Definitions.

Delete paragraph (o) and substitute the following:

**(o) Square foot and Square yard (Square meter).** 1 square yard equals 9 square feet. Measurements for area computations will be made horizontally or vertically to the surface being measured. No deductions from the area computation will be made for individual fixtures having area of 9 square feet (1 square meter) or less. Do not measure overlaps.

WFL Specification 09/17/18 1090040

Include the following when there are pay items measured by the ton (metric ton) and if either statement is true:

1. There is less than 20,000 tons (metric tons) of any one item; OR
2. A total of less than 30,000 tons (metric tons) of all items to be weighed.

### 109.03 Weighing Procedures and Devices.

Delete the first paragraph of Subsection (c) and substitute the following:

**(c) Project weighing system.** Furnish, erect, and maintain acceptable automatic digital scales. For small quantities, manual scales may be used when approved in writing by the CO and if the method of weighing meets all other contract requirements. Provide scales that record mass at least to the nearest 100 pounds (50 kilograms). Maintain the scale accuracy to within 0.5 percent of the correct mass throughout the range of use.

WFL Specification 09/17/18 1090050

Include the following with MATOC projects.

### 109.03 Weighing Procedures and Devices.

Delete paragraph (c)(2) and substitute the following:

**(2)** Task Order line item number, pay item number and description;

WFL Specification 09/17/18 1090060

Include the following with MATOC projects.

### 109.04 Receiving Procedures.

Delete paragraph (b) and substitute the following:

**(b)** Task Order line item number, pay item number and description;

WFL Specification 04/02/21 1090070

Include the following in all projects.

### 109.06 Pricing of Adjustments.

Add the following after the third paragraph:

At the preconstruction conference, furnish the following information to the CO, which will be used to price future adjustments and contract modifications.

* **Overhead.** Furnish the CO with a copy of the current certified or audited jobsite and home office overhead costs for the Contractor and Subcontractors. Provide supporting data, which justifies the costs. List costs that are included in overhead and identify the cost pool(s) to which overhead is applied.
* **Equipment.** Furnish the CO with a complete descriptive listing of equipment to be used by the Contractor and Subcontractors, including the make, model, and year of manufacturer of each piece of equipment, including attachments to the base equipment. Furnish the following cost information:
	+ *Rented Equipment.* Provide current invoices to support rented or leased equipment costs.
	+ *Owned Equipment.* Determine allowable ownership and operating costs for Contractor- and Subcontractor-owned equipment using actual equipment cost data determined from the operating cost records. If actual equipment cost data is not available, provide the CO with a statement signed by the highest officer or official in the company that such cost data is not available. Also provide a complete set of supporting documentation containing all ownership records that are available, including any purchase records, depreciation records, maintenance records, or other records that relate to the ownership and operating costs for each piece of equipment. When actual costs cannot be determined, use the rates shown in the U.S. Army Corps of Engineers Construction Equipment Ownership and Operating Expense Schedule (CEOOES) for the region where costs are incurred. Adjust the rates for used equipment and for other variable parameters used in the schedules. Provide the CO with a completed WFLHD Form 103, proposed CEOOES rates for each piece of equipment with supporting calculations, and any other necessary documentation about the equipment to calculate allowable ownership and operating costs using CEOOES. An electronic version of the WFLHD Form 103 form is available at: <https://highways.dot.gov/federal-lands/construction/forms-wfl>.

For equipment that is not planned to be used at the time of the preconstruction conference, but is later used on the project, provide required information and data prior to mobilizing the equipment to the project.

WFL Specification 7/21/17 1090080

Include the following on projects that contain an adjustment for price fluctuation and is:

 - NOT funded by DoD (Department of Defense);

 - greater than 1 year in duration;

 - engineers estimate over $2.5 million;

 - includes pay items from Table 109-2 that total more than 25% of the engineers estimate; and,

 - approved by the Construction Operations Engineer.

Contact a CO if you want to change the payment/rebate to something other than 50% of the Base Price Index.

See WFLHD PDDM Supplement 9.6.8.6-1 at:

<https://flh.fhwa.dot.gov/resources/design/pddm/wfl/ch09/9.6.8.6-1.pdf>, for more information.

The Construction Branch is responsible for obtaining and maintaining prices for the indexes.

Coordinate with Construction’s Final Review Engineer to set up monitoring controls.

### 109.06A Adjustments for Price Fluctuations.

(Added Subsection).

Price adjustments for pay items listed in Table 109-1 will be made when the price fluctuation for products used in the performance of the work exceed specified limits. Adjustments are not intended to compensate for normal day-to-day fluctuations, seasonal changes, or to serve as a guarantee of full compensation for price fluctuations. It does provide for sharing in a portion of the risk, which could result from unusual price fluctuations. No price adjustments will be made for work performed beyond the fixed completion date.

WFL Specification 06/15/22 1090090

Include the following on projects that contain an adjustment for price fluctuation.

Notes:

1. Pay items listed in Table 109-1 are examples of work requiring products with prices that may fluctuate. Add or delete pay items as required. Use the line item number and the entire 9 digit pay item number identifiers. Fuel adjustment pay items to consider are listed in Table 109‑2.

2. Insert Type of Asphalt Used and location it’s reported, and remove the highlights.

Table 109-1

Pricing Adjustment Pay Items

|  |  |  |  |
| --- | --- | --- | --- |
| Line Item Number | Pay Item Number | Pay Item Description | Product |
| [INSERT NO.] | 20401-0000 | Roadway excavation | Fuel |
| [INSERT NO.] | 20402-0000 | Subexcavation | Fuel |
| [INSERT NO.] | 30101-0000 | Aggregate base | Fuel |
| [INSERT NO.] | 40101-1000 | Asphalt concrete pavement, gyratory mix,  | Asphalt binder & Fuel |

Monthly adjustments will be accrued with the payment or rebate to be made in the final voucher. A partial price adjustment payment may be made once every 12 months or when the unpaid accrued increase exceeds $10,000 when requested in writing. The Government will withhold a rebate when the deductive accrual exceeds $10,000.

The maximum allowable monthly and final adjustment for payment to the Contractor or rebate to the Government is limited to 50% of the Base Price Index.

**(a) Asphalt binder adjustment.** The Government will determine price indexes using price data obtained from the *Asphalt Weekly Monitor*® by Poten and Partners, Inc. The weekly high and low selling price data for [INSERT TYPE OF ASPHALT USED] reported for [INSERT Eastern Montana, Western Montana, Northern Wyoming, Boise, Northern Idaho, Seattle, or Portland] will be averaged and used to establish a Base Price Index (BPI) and a Monthly Performance Price Index (MPPI). These indexes are defined as follows:

**(1) Base Price Index.** The Base Price Index (BPI) is a price index determined by the arithmetic average for prices in the four *Asphalt Weekly Monitor*® publications immediately preceding the bid opening.

BPI(Asphalt Binder) = $ [PRICE TO BE INSERTED AT AWARD] per ton

**(2) Monthly Performance Price Index.** The Monthly Performance Price Index (MPPI) is the arithmetic average of the weekly price data from four *Asphalt Weekly Monitor*® publications issued before the last Wednesday of the month in which the work was performed.

The BPI and MPPI will be posted at:

<https://highways.dot.gov/federal-lands/business/escalation-factors-wfl>.

Asphalt binder contained in recycled asphalt pavement (RAP) incorporated into the mix will be excluded from price adjustments. Price adjustments to asphalt binder will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

* **No price adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for asphalt binder used in construction work performed during the relevant month.
* **Government rebate** – When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate as follows:

Government Rebate = (0.90 – MPPI/BPI) (BPI) (Q)

* **Contractor payment** - When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment as follows:

Contractor Payment = (MPPI/BPI – 1.10) (BPI) (Q)

where:

Q = Table 109-1 pay item quantity (tons or metric tons) x ((% Asphalt Binder/100) – (% RAP/100 x % asphalt binder in RAP/100));

% Asphalt Binder = % Binder by Mass of Total Mix from the approved job-mix formula;

% RAP = percent recycled asphalt pavement from the approved job-mix formula; and

% asphalt binder in RAP = percent of asphalt binder in recycled asphalt pavement from the approved job-mix formula.

When calculating the payment or rebate, the Government will round each portion of the calculation to two decimal places.

WFL Specification 06/15/22 1090100

Include the following on projects that contain an adjustment for fuel price fluctuation.

For nearest city to project, remove highlight and select from the following cities: Seattle, WA; Portland, OR; Spokane, WA; Boise, ID; Missoula, MT; Bozeman, MT; Great Falls, MT, or Anchorage, AK.

**(b) Fuel Price Adjustment.** The Government will determine price indexes for fuel using price data obtained from the Oil Price Information Service (OPIS) which publishes a daily report (Monday through Friday) on gasoline and distillate reseller prices. Gross No. 2 Distillate rack average price data for Ultra Low Sulfur No. 2 Diesel fuel reported for [INSERT THE NEAREST CITY] will be averaged and used to establish a Base Price Index (BPI) and a Monthly Performance Price Index (MPPI). These indexes are defined as follows:

**(1) Base Price Index.** The Base Price Index (BPI) is a price index determined by the arithmetic average as specified above, reported in the OPIS publications for the four weeks immediately preceding the bid opening.

BPI (LOW SULFUR, NO. 2 DIESEL FUEL) = $ [PRICE TO BE INSERTED AT AWARD] per U.S. gallon

**(2) Monthly Performance Price Index.** The Monthly Performance Price Index (MPPI) is the arithmetic average of the weekly price data from OPIS publications issued before the last Wednesday of the month in which the work was performed.

The BPI and MPPI will be posted at:

<https://highways.dot.gov/federal-lands/business/escalation-factors-wfl>/.

Price adjustments to fuel will be calculated by the Government using a ratio of the MPPI/BPI to determine price adjustments as follows:

* **No price adjustment** – When the ratio MPPI/BPI falls within the range of 0.90 to 1.10, no price adjustment will be made for fuel used in construction work performed during the relevant month.
* **Government rebate** – When the ratio MPPI/BPI is calculated to be less than 0.90, the Government is due a rebate as follows:

Government Rebate = (0.90 – MPPI/BPI) (BPI) (Q) (FUF)

* **Contractor payment** - When the ratio MPPI/BPI is calculated to be greater than 1.10, the Contractor is due additional payment as follows:

Contractor Payment = (MPPI/BPI – 1.10) (BPI) (Q) (FUF)

where:

Q = Quantity of work on the project during the progress payment period for pay items shown in Table 109-1; and

FUF = Fuel Usage Factor shown in Table 109-2.

When calculating the payment or rebate, the Government will round each portion of the calculation to two decimal places.

WFL Specification 7/21/17 1090110

Include the following on projects that contain an adjustment for fuel price fluctuation.

Note: Pay items listed in Table 109-2 are examples of work requiring fuel with prices that may fluctuate. Add or delete pay items as required. Include required fuel adjustment pay items in Table 109-1.

Note: Include footnote (1) for pay items that are not measured in the same unit as the fuel usage factor.

Table 109-2

Fuel Usage Factors

| Pay Items | Fuel Usage Factor(2) |
| --- | --- |
| Section 204 – Excavation and Embankment20401 Roadway excavation20402 Subexcavation20403 Unclassified borrow20420 Embankment construction20421 Rock excavation | 0.30 gallons/yard3(0.39 gallons/meter3) |
| Section 204 – Excavation and Embankment20410 Select borrow(1)20411 Select borrow20415 Select topping(1)20416 Select topping | 0.70 gallons/ton(0.77 gallons/metric ton) |
| Section 301 – Untreated Aggregate Courses30101 Aggregate base30102 Aggregate base(1)30103 Aggregate base(1)30105 Subbase30106 Subbase(1)30107 Subbase(1)30110 Aggregate Surface Course30111 Aggregate Surface Course(1) | 0.70 gallons/ton(0.77 gallons/metric ton) |
| Section 302 – Minor Aggregate30201 Roadway Aggregate30202 Roadway Aggregate(1) | 0.70 gallons/ton(0.77 gallons/metric ton) |
| Section 308 – Recycled Aggregate Base30801 Recycled aggregate base30802 Recycled aggregate base(1)30803 Recycled aggregate base(1) | 0.10 gal/yard20.15 gallons/meter2 |
| Section 309 – Emulsified Asphalt Treated Base Course30901 Emulsified asphalt treated aggregate base30902 Emulsified asphalt treated aggregate base(1)30903 Emulsified asphalt treated aggregate base(1) | 0.70 gallons/ton(0.77 gallons/metric ton) |
| Section 310 – Cold In-Place Recycled Asphalt Base Course31001 Cold in-place recycled asphalt base course(1)31002 Cold in-place recycled asphalt base course | 0.15 gallons/ yard2(0.18 gallons/meter2) |
| Section 311 – Stabilized Aggregate Surface Course31101 Stabilized aggregate surface course, imported aggregate(1)31101 Stabilized aggregate surface course, in-place aggregate(1)31102 Stabilized aggregate surface course, imported aggregate(1)31102 Stabilized aggregate surface course, in-place aggregate(1)31103 Stabilized aggregate surface course, imported aggregate | 0.70 gallons/ton(0.77 gallons/metric ton) |
| Section 401 – Asphalt Concrete Pavement by Gyratory Mix Design Method40101 Asphalt concrete pavement, gyratory mix40102 Asphalt concrete pavement, gyratory mix, wedge and leveling course | 2.40 gallons/ton(2.65 gallons/metric ton) |
| Section 402 – Asphalt Concrete Pavement by Hveem or Marshall Mix Design Method40201 Asphalt concrete pavement, Marshall or Hveem mix40202 Asphalt concrete pavement, Marshall or Hveem mix, wedge and leveling course | 2.40 gallons/ton(2.65 gallons/metric ton) |
| Section 403 – Asphalt Concrete40301 Asphalt concrete pavement40302 Asphalt concrete pavement(1)40303 Asphalt concrete pavement, wedge and leveling course | 2.40 gallons/ton(2.65 gallons/metric ton) |
| Section 405 – Open-Graded Asphalt Friction Course40501 Open-graded asphalt friction course | 2.40 gallons/ton(2.65 gallons/metric ton) |
| Section 408 – Cold Recycled Asphalt Base Course40801 Cold recycled asphalt base course40802 Cold recycled asphalt base course(1) | 0.70 gallons/ton(0.77 gallons/metric ton) |
| Section 501 – Minor Concrete Pavement50101 Minor concrete pavement, reinforced50102 Minor concrete pavement, plain | 0.60 gallons/yard2(0.72 gallons/meter2) |

(1) The Government will convert pay item quantities to match Fuel Usage Factor units.

(2) Fuel Usage Factor based on U.S. gallons.

WFL Specification 09/17/18 1090120

Include the following in all projects that DO have Subsection 109.06A Adjustments for Price Fluctuations.

(closing date for the progress payment is the last day of the month for ease in price adjustment calculations)

### 109.08 Progress Payments.

Amend as follows:

Delete paragraph (b) and substitute the following:

**(b) Closing date and invoice submittal date.** The closing date for progress payments will be the last day of the month. Include work performed after the closing date in the following month's invoice. For work performed between September and July of any year, submit invoices to the designated billing office by the 7th day after the closing date. Invoices received by the designated billing office after the 16th day following the closing date, for work included in the September through July invoices, will not be accepted for payment processing that month. For work included in the August invoice, submit the invoice to the designated billing office by the 5th day after the closing date. Invoices received by the designated billing office after the 5th day following the closing date, for work included in the August invoice, will not be accepted for payment processing that month. Include late, unprocessed invoice submittals in the following month’s invoice.

WFL Specification 9/17/18 1090130

Include the following in all projects that do NOT have Subsection 109.06A Adjustments for Price Fluctuations.

### 109.08 Progress Payments.

Amend as follows:

Delete paragraph (b) and substitute the following:

**(b) Closing date and invoice submittal date.** The closing date for progress payments will be designated by the CO. Include work performed after the closing date in the following month's invoice. For work performed between September and July of any year, submit invoices to the designated billing office by the 7th day after the closing date. Invoices received by the designated billing office after the 16th day following the closing date, for work included in the September through July invoices, will not be accepted for payment processing that month. For work included in the August invoice, submit the invoice to the designated billing office by the 5th day after the closing date. Invoices received by the designated billing office after the 5th day following the closing date, for work included in the August invoice, will not be accepted for payment processing that month. Include late, unprocessed invoice submittals in the following month’s invoice.

WFL Specification 09/17/18 1090140

Include the following in all projects.

Delete paragraph (e) and substitute the following:

**(e) Processing progress payment requests.** No payment will be made for work unless field note documentation for the work was provided by the closing date.

**(1) Work performed between September and July.**

*(a) Invoices received by the 7th day following the closing date.*

*(1) Proper invoices.* If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractors' invoice agree with the corresponding quantities and unit prices shown on the Governments' receiving report, the invoice will be paid.

*(2) Defective invoices.* If the invoice does not meet the requirements of Subsection 109.08(c), or if any of the quantities or unit prices shown on the Contractors' invoice exceed the corresponding quantities and unit prices shown on the Governments' receiving report, the invoice will be deemed defective and the Contractor so notified according to FAR Clause 52.232-27(a)(2). Defective invoices will not be corrected by the Government and will be returned to the Contractor within 7 days after the Government’s designated billing office receives the invoice.

Revise and resubmit returned invoices by the 18th day following the closing date. The CO will evaluate the revised invoice. If the invoice still does not meet the requirements of Subsection 109.08(c), the Contractor will be so notified according to FAR Clause 52.232-27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the revised invoice meets the requirements of Subsection 109.08(c), but still has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Governments’ receiving report, the Government’s data for that item of work will be used. The Contractors’ invoice, as revised by the Governments’ receiving report, will be forwarded for processing by the 23rd day following the closing date. The Contractor will be notified by the 23rd day following the closing date of the reasons for any changes to the invoice.

*(b) Invoices received between the 8th and 16th day following the closing date.*

*(1) Proper invoices.* If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractors' invoice agree with the corresponding quantities and unit prices shown on the COs' receiving report, the invoice will be deemed proper and forwarded for processing within 7 days of receipt.

*(2) Defective invoices.* If the invoice does not meet the requirements of Subsection 109.08(c), the invoice will be deemed defective, the Contractor so notified according to FAR Clause 52.232 27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the invoice meets the requirements of Subsection 109.08(c), but has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Governments' receiving report, the Government’s data for that item of work will be used. The Contractors’ invoice, as revised by the Governments’ receiving report, will be forwarded for processing within 7 days after receiving the invoice. The Contractor will be notified, within 7 days of the Government’s receipt of the invoice, of the reasons for any changes to the invoice.

**(2) Work performed during August.**

*(a) Proper invoices.* If the invoice meets the requirements of Subsection 109.08(c), and the quantities and unit prices shown on the Contractor's invoice agree with the corresponding quantities and unit prices shown on the CO's receiving report, the invoice will be deemed proper and forwarded for processing within 7 days of receipt.

*(b) Defective invoices.* If the invoice does not meet the requirements of Subsection 109.08(c), the invoice will be deemed defective, the Contractor so notified according to FAR Clause 52.232 27(a)(2), and no progress payment will be made that month. Correct the deficiencies and resubmit the invoice the following month.

If the invoice meets the requirements of Subsection 109.08(c), but has quantities or unit prices exceeding the corresponding quantities and unit prices shown on the Governments' receiving report, the Government’s data for that item of work will be used. The Contractors’ invoice, as revised by the Governments’ receiving report, will be forwarded for processing within 7 days after receiving the invoice. The Contractor will be notified, within 7 days of the Government’s receipt of the invoice, of the reasons for any changes to the invoice.

Delete paragraph (f) and substitute the following:

**(f) Partial payments.** Invoices may include the following:

**(1)** Progress payments may include partial payment for material to be incorporated in the work, provided the material meets the requirements of the contract and is delivered on, or near, the project site or stored in acceptable storage places.

Partial payment for material does not constitute acceptance of such material for use in completing items of work. Partial payments will not be made for living or perishable material until incorporated into the project.

**(2)** Partial payment for preparatory work. Partial payment for preparatory work does not constitute acceptance of work.

Individual and cumulative partial payments for preparatory work and material will not exceed the lesser of:

* 80 percent of the contract bid price for the item; or
* 100 percent of amount supported by copies of invoices submitted.

The quantity paid will not exceed the corresponding quantity estimated in the contract.

Submit pay notes according to Subsection 109.01. Provide a cost breakdown of the bid item components and submit invoices or other documents supporting the partial payment.

The CO may adjust partial payments as necessary to protect the Government.

### 109.09 Final Payment.

Add the following after the first paragraph:

Payment for individual pay items will be based on the awarded unit price for each pay item according to the following table.

Decimal Accuracy of Quantities for Payment

|  |  |
| --- | --- |
| Awarded unit price | Decimal Accuracy of Quantities for Payment |
| < $1.00 | 0 decimals |
| ≥ $1.00 to < $100.00 | 1 decimals |
| ≥ $100.00 to < $1000.00 | 2 decimals |
| ≥ $1000.00 | 3 decimals |