

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
ERRATA

The following errata amend the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03) U. S. Customary (and Metric) Units*, U. S. Department of Transportation, Federal Highway Administration.

Notes regarding the Errata:

Sections or clauses will be preceded by a reference indicating to which version they apply, U.S. Customary, Metric, or both.

Clauses applicable to both the U. S. Customary and Metric versions have units of measure given in U.S. Customary first, with Metric conversions following in parentheses.

METRIC VERSION

Page iv. Delete the table title and substitute the following:

SI⁽¹⁾ (METRIC) TO U.S. CUSTOMARY CONVERSION FACTORS (approximate)

Page iv, table section ILLUMINATION. Delete the unit, **caldela/m²**, and substitute the unit, **candela/m²**.

Section 101.—TERMS, FORMAT, AND DEFINITIONS

BOTH VERSIONS

101.03(a). Delete the acronym description for “SSPC” and substitute the following:

The Society for Protective Coatings

Section 106.—ACCEPTANCE OF WORK

BOTH VERSIONS

106.01. Delete Subsection 106.01 and substitute the following:

106.01 Conformity with Contract Requirements. Follow the requirements of FAR Clause 52.246-12 Inspection of Construction.

References to standard test methods of AASHTO, ASTM, GSA, and other recognized standard authorities refer to the methods in effect on the date of solicitation for bids.

Perform all work to the lines, grades, cross-sections, dimensions, and processes or material requirements shown in the contract documents.

Incorporate manufactured material into the work according to the manufacturer’s recommendations or to these specifications, whichever is more strict.

Plan dimensions and contract specification values are the values to be strived for and complied with as the design values from which any deviations are allowed. Perform work and provide material that is uniform in character and reasonably close to the prescribed value or within the specified tolerance range. The purpose of a tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons.

When standard manufactured items are specified (such as fence, wire, plates, rolled shapes, pipe conduits, etc., that are identified by gauge, unit mass, section dimensions, etc.), the identification will be considered to be nominal masses or dimensions. Unless specific contract tolerances are noted, established manufacturing tolerances will be accepted.

The Government may inspect, sample, or test all work at any time before final acceptance of the project. When the Government tests work, copies of test reports are furnished to the Contractor upon request. Government tests may or may not be performed at the work site. If Contractor testing and inspection is verified by the Government, the Contractor’s results may be used by the Government to evaluate work for acceptance. Do not rely on the availability of Government test results for process control.

Acceptable work conforming to the contract will be paid for at the contract unit bid price. Four methods of determining conformity and accepting work are described in Subsections 106.02 to 106.05 inclusive. The primary method of acceptance is specified in each Section of work. However, work may be rejected at any time it is found by any of the methods not to comply with the contract.

Remove and replace work that does not conform to the contract, or to prevailing industry standards where no specific contract requirements are noted, at no cost to the Government.

(a) Disputing Government test results. If the accuracy of Government test results is disputed, promptly inform the CO. If the dispute is unresolved after reasonable steps are taken to resolve the dispute, further evaluation may be obtained by written request. Include a narrative describing the dispute and a proposed resolution protocol that addresses the following:

- (1) Sampling method;
- (2) Number of samples;
- (3) Sample transport;
- (4) Test procedures;
- (5) Testing laboratories;
- (6) Reporting;
- (7) Estimated time and costs; and
- (8) Validation process.

If the evaluation requires additional sampling or testing be performed, mutually agree with the Government on witnessing procedures and on sampling and testing by a third party laboratory. Use a third party laboratory accredited by the AASHTO accreditation program. Provide proof of the laboratory's accreditation for the test procedures to be used. Do not use the same laboratory that produced the disputed Government test results or that produced the test results used as a basis for the dispute.

The CO will review the proposed resolution protocol and may modify it before final approval and execution.

The Government will use the approved resolution protocol test results to determine the validity of the disputed testing. If the Government test results are validated, the Contractor will be responsible for all costs associated with developing and performing the resolution protocol. If the Government test results are not validated, the Government will be responsible for all costs associated with developing and performing the resolution protocol. If the validity of the Government test results cannot be determined, the Contractor and Government will equally share all costs associated with developing and carrying out the resolution protocol.

(b) Alternatives to removing and replacing non-conforming work. As an alternative to removal and replacement, the Contractor may submit a written request to:

- (1) Have the work accepted at a reduced price; or
- (2) Be given permission to perform corrective measures to bring the work into conformity.

The request must contain supporting rationale and documentation. Include references or data justifying the proposal based on an evaluation of test results, effect on service life, value of material or work, quality, aesthetics, and other tangible engineering basis. The CO will determine disposition of the nonconforming work.

Section 107.—LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC***BOTH VERSIONS***

107.03(f). Add the following paragraph after Subsection 107.03(f):

- (g) “Beck” poster, according to FAR Clause 52.222-39 Notification of Employee Rights Concerning Payment of Union Dues or Fees.

Section 109.—MEASUREMENT AND PAYMENT***US CUSTOMARY VERSION***

109.02 (b) Cubic yard. Delete this line and substitute:

- (c) **Cubic yard.**

Section 213.—SUBGRADE STABILIZATION***METRIC VERSION***

Table 213-2. Delete the **Split Sample** entry for the **Strength Characteristic** and substitute the word, **Yes**.

Section 302.—TREATED AGGREGATE COURSES***METRIC VERSION***

Table 302-3. Add the entry “4 hours” to the **Reporting Time** entry for **Liquid limit**.

Section 401.—SUPERPAVE HOT ASPHALT CONCRETE PAVEMENT***BOTH VERSIONS***

401.08. Delete the first paragraph and substitute the following:

401.08 Asphalt Preparation. Uniformly heat the asphalt binder to provide a continuous supply of the heated asphalt binder from storage to the mixer. Do not heat asphalt binder above 365 °F (185 °C).

401.16(b). Delete the first sentence and substitute the following:

401.16(b) International roughness index (IRI). For type III or IV pavement roughness, furnish an inertial profiler conforming to AASHTO PP 50 and validated according to AASHTO PP 49.

US CUSTOMARY VERSION

401.16(b)(2). Delete Table 401-4 and substitute the following:

**Table 401-4
Type IV Pavement Roughness**

Single Lift⁽¹⁾ Percent Improvement (%)	Pay Adjustment Factor⁽¹⁾	Multi-Lift⁽²⁾ Percent Improvement (%)	Pay Adjustment Factor⁽²⁾
Greater than 48.4	PAF = 12.50	Greater than 61.1	PAF = 12.50
24.8 to 48.4	PAF = 0.5274(%) – 13.027	43.3 to 61.1	PAF = 0.6983(%) – 30.168
12.4 to 24.7	PAF = 0.00	34.0 to 43.2	PAF = 0.00
0.9 to 12.3	PAF = 3.2609(%) – 40.435	25.4 to 33.9	PAF = 4.3605(%) – 148.260
Less than 0.9	Reject ⁽³⁾	Less than 25.4	Reject ⁽³⁾

(1) For single lift overlays with no other corrective work such as milling, grinding or preleveling in excess of 25 percent of the surface area the of existing pavement.

(2) For multiple lift operations such as milling, grinding or preleveling followed by one or more lifts of pavement or two or more lifts of pavement without milling, grinding or preleveling.

(3) Pay adjustment factor when corrections are not allowed equals minus 37.5.

**Section 402.—HOT ASPHALT CONCRETE PAVEMENT BY HVEEM OR MARSHALL
MIX DESIGN METHOD**

BOTH VERSIONS

402.03. Delete the first paragraph and substitute the following:

402.03 Composition of Mix (Job-Mix Formula). Furnish mixes of aggregate, asphalt binder, recycled asphalt pavement, and additives that meet the applicable material requirements, appropriate design parameters in Tables 402-1 and 402-2, and are capable of being placed and compacted as specified.

402.03(b). Delete the first sentence and substitute the following:

402.03(b) Submission. Submit written job-mix formulas with Form FHWA 1607 (Hveem) or Form 1622 (Marshall) for approval at least 28 days before production.

402.03(c)(4). Delete the paragraph and substitute the following:

(4) Voids in mineral aggregate (VMA). The Contractor's VMA result is verified if the CO's result is not below the minimum specification limit.

Section 409.— ASPHALT TREATMENT**US CUSTOMARY VERSION**

409.11. Delete Table 409-1 and substitute the following:

Table 409-1
Approximate Quantities of Material for
Single-Course Surface Treatment

Designation	Nominal Maximum Size of Aggregate	Aggregate Gradation ⁽¹⁾	Estimated Quantity of Aggregate ⁽²⁾ pounds/yd²	Estimated Quantity of Emulsified Asphalt ⁽³⁾ gallons/yd²	Estimated Quantity of Asphalt Binder ⁽³⁾ gallons/yd²
1A	3/4 inch	B	40 – 49	0.40 – 0.55	0.27 – 0.38
1B	1/2 inch	C	26 – 29	0.31 – 0.44	0.20 – 0.31
1C	3/8 inch	D	20 – 26	0.20 – 0.35	0.13 – 0.24
1D	No. 4	E	15 – 20	0.15 – 0.22	0.11 – 0.18
1E	Sand	F	9 – 15	0.11 – 0.18	0.09 – 0.15

(1) See Table 703-7 for aggregate gradations.

(2) Aggregate masses are for aggregates having a bulk specific gravity of 2.65, as determined by AASHTO T 84 and T 85. Make proportionate corrections when the aggregate furnished has a bulk specific gravity above 2.75 or below 2.55.

(3) Adjust the asphalt content for the condition of the road.

409.12. Delete Tables 409-2 and 409-3 and substitute the following:

Table 409-2
Approximate Quantities of Material for
Double Course Surface Treatments

Designation (Thickness)	Nominal Maximum Size of Aggregate	Aggregate Gradation⁽¹⁾	Estimated Quantity of Aggregate⁽²⁾ pounds/yd²	Estimated Quantity of Emulsified Asphalt⁽³⁾ gallons/yd²	Estimated Quantity of Asphalt Binder⁽³⁾ gallons/yd²
2A (1/2 inch)					
1 st Application	3/8 inch	D	26 – 35	0.20 – 0.31	0.11 – 0.22
2 nd Application	No. 4	E	9 – 15	0.31 – 0.40	0.18 – 0.29
2B (5/8 inch)					
1 st Application	1/2 inch	C	29 – 40	0.31 – 0.40	0.18 – 0.29
2 nd Application	No. 4	E	14 – 20	0.40 – 0.51	0.24 – 0.33
2C (3/4 inch)					
1 st Application	3/4 inch	B	40 – 49	0.35 – 0.51	0.22 – 0.33
2 nd Application	3/8 inch	D	20 – 26	0.51 – 0.60	0.33 – 0.42

(1) See Table 703-7 for aggregate gradations.

(2) Aggregate masses are for aggregates having a bulk specific gravity of 2.65, as determined by AASHTO T 84 and T 85. Make proportionate corrections when the aggregate furnished has a bulk specific gravity above 2.75 or below 2.55.

(3) Adjust the asphalt content of the first application for the condition of the road.

Table 409-3
Approximate Quantities of Material for
Triple Course Surface Treatments

Designation (Thickness)	Nominal Maximum Size of Aggregate	Aggregate Gradation⁽¹⁾	Estimated Quantity of Aggregate⁽²⁾ pounds/yd²	Estimated Quantity of Emulsified Asphalt⁽³⁾ gallons/yd²	Estimated Quantity of Asphalt Binder⁽³⁾ gallons/yd²
3A (1/2 inch)					
1 st Application	3/8 inch	D	26 – 35	0.20 – 0.31	0.11 – 0.22
2 nd Application	No. 4	E	9 – 15	0.24 – 0.35	0.15 – 0.27
3 rd Application	Sand	F	9 – 15	0.20 – 0.31	0.11 – 0.22
3B (5/8 inch)					
1 st Application	1/2 inch	C	29 – 40	0.20 – 0.31	0.11 – 0.22
2 nd Application	3/8 inch	D	15 – 20	0.31 – 0.40	0.18 – 0.29
3 rd Application	No. 4	E	9 – 15	0.20 – 0.31	0.11 – 0.22
3C (3/4 inch)					
1 st Application	3/4 inch	B	35 – 46	0.24 – 0.35	0.15 – 0.27
2 nd Application	3/8 inch	D	20 – 26	0.31 – 0.40	0.18 – 0.29
3 rd Application	No. 4	E	9 – 15	0.24 – 0.35	0.15 – 0.27

(1) See Table 703-7 for aggregate gradations.

(2) Aggregate masses are for aggregates having a bulk specific gravity of 2.65 as determined by AASHTO T 84 and T 85. Make proportionate corrections when the aggregate furnished has a bulk specific gravity above 2.75 or below 2.55.

(3) Adjust the asphalt content of the first application for the condition of the road.

Table 409-4. Add the following entry for the emulsified asphalt split sample:

1 – 4-quart (1 – 4-liter)

Section 552.—STRUCTURAL CONCRETE***BOTH VERSIONS***

552.03(l). Delete the last sentence.

US CUSTOMARY VERSION

552.03(v). Delete Table 552-3 and substitute the following:

Table 552-3
**Required Average Compressive Strength When Data
Are Not Available to Establish a Standard Deviation**

Specified Compressive Strength (f'_c) (pounds per square inch)	Required Average Compressive Strength (f'_{cr}) (pounds per square inch)
Less than 3000	$f'_c + 1000$
3000 to 5000	$f'_c + 1200$
Over 5000	$1.10f'_c + 700$

METRIC VERSION

Table 552-3
**Required Average Compressive Strength When Data
Are Not Available to Establish a Standard Deviation**

Specified Compressive Strength (f'_c) (MPa)	Required Average Compressive Strength (f'_{cr}) (MPa)
Less than 21	$f'_c + 7.0$
21 to 35	$f'_c + 8.5$
Over 35	$1.10f'_c + 5.0$

Section 602.—CULVERTS AND DRAINS***BOTH VERSIONS***

602.06. Delete the second paragraph and substitute the following:

Provide soil-tight bell and spigot joints for plastic pipe culverts.

Section 703.—AGGREGATE

BOTH VERSIONS

703.05(b), Table 703-2. Delete the table entry “436 – 74 (6)” percent by mass passing for grading E (base) No. 4 (4.75 millimeter) sieve size and substitute “36 – 74 (6).”

703.10(a). Delete Table 703-7 and substitute the following:

**Table 703-7
Target Value Ranges for
Single and Multiple Course Surface Treatment Aggregate Gradation**

Sieve Size	Percent by Mass Passing Designated Sieve (AASHTO T 27 & T 11)					
	Grading Designation					
	A	B	C	D	E	F
1½ inch 37.5 mm	100 ⁽¹⁾					
1 inch 25 mm	90-100(3)	100 ⁽¹⁾				
¾ inch 19 mm	0-35(5)	90-100(3)	100 ⁽¹⁾			
½ inch 12.5 mm	0-8(3)	0-35(5)	90-100(3)	100 ⁽¹⁾		
⅜ inch 9.5 mm	—	0-12(3)	0-35(5)	85-100(3)	100 ⁽¹⁾	100 ⁽¹⁾
No. 4 4.75 mm	—	—	0-12(3)	0-35(5)	85-100(3)	85-100 ⁽¹⁾
No. 8 2.36 mm	—	—	—	0-8(3)	0-23(4)	—
No. 200 75 µm	0-1(1)	0-1(1)	0-1(1)	0-1(1)	0-1(1)	0-10 ⁽¹⁾

(1) Statistical procedures do not apply.

() The value in the parentheses is the allowable deviation (±) from the target values.

US CUSTOMARY VERSION

703.17. Delete Table 703-13 and substitute the following:

**Table 703-13
Allowable Deviations for Target Value Gradations**

Gradation Range		Allowable Deviation
Minimum	Maximum	
70.1	89.9	4
60.1	70.0	5
55.1	60.0	6
45.1	55.0	7
40.1	45.0	6
30.1	40.0	5
21.1	30.0	4
8.1	21.0	3
0	8.0	2

Section 704.—SOIL**BOTH VERSIONS**

704.02. Delete the Subsection and substitute the following:

704.02. Bedding Material. Furnish a well graded, free draining material free of excess moisture, muck, frozen lumps, roots, sod, or other deleterious material conforming to the following:

- | | |
|---|---|
| (a) Maximum particle size | 1/2 inch (12.5 millimeters) or half the corrugation depth, whichever is smaller |
| (b) Material passing No. 200 sieve (75µm), AASHTO T 27 and T 11 | 10% max. |

Section 709.—REINFORCING STEEL AND WIRE ROPE**BOTH VERSIONS**

709.01(b). Delete the text of this subsection and substitute the following:

- (b) **Reinforcing bars.** Furnish deformed, grade 60 (420) bars conforming to AASHTO M 31. (31M)

709.01(d). Delete text of this subsection and substitute the following:

- (d) **Tie bars.** Furnish deformed, grade 60 (420) bars conforming to AASHTO M 31 (31M).

709.01(e). Delete the first sentence of text in this subsection and substitute the following:

Furnish plain, grade 60 (420) bars conforming to AASHTO M 31 (31M) with M14 rolled

threads or M16 cut threads.

709.01 Add the following after 709.01(l):

(m) Spiral Reinforcement. Conform to AASHTO M 32 (32M), or to the strength and elongation requirements of AASHTO M 31 (31M), Grade 60 (420).

Section 718.—TRAFFIC SIGNING AND MARKING MATERIAL

BOTH VERSIONS

718.08(b)(2)(c) Delete the Subsection and substitute the following:

<i>(c)</i> Galvanizing after punching (inside and outside of post)	ASTM A 653 (ASTM A 653M), coating Z275 designation
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718.14(g). Delete the Subsection and substitute the following:

(g) Daylight reflectance. (Without glass beads)

(1) White, ASTM E 1347	84% relative to magnesium oxide standard
(2) Yellow, ASTM E 1347	55% relative to magnesium oxide standard

METRIC VERSIONS

718.15(a)(2). Delete the Subsection and substitute the following:

(2) Yellow.

<i>(a)</i> Chrome yellow (PbCrO ₄), ASTM D 126, type III.	23% min.
<i>(b)</i> Epoxy resin	70 to 77%

718.15(g). Delete the Subsection and substitute the following:

(g) Drying time. 0.38-millimeter film thickness with beads.

(1) Laboratory at 22 °C, ASTM D 711	30 minutes maximum to no-pick-up condition
(2) Field at 25 °C, viewed from 15 m	10 minutes maximum to no-pick-up condition