SECTION 708 - PAINTS

708.01 Bridge Paints. Paints shall be furnished in new, unopened, air-tight containers meeting U.S. Department of Transportation hazardous materials shipping regulations. Containers shall be marked clearly with the name and address of manufacturer, shipping point, trademark or trade name, kind of paint or formula, volume of paint in the container, date and lot number, and Federal Specification number, if applicable.

Paint shall conform to the following:

(A)	Red Primer Paint	California Specification PB-201B, PB-202B or Steel Structures Painting Council Paint Specs. No. 25
(B)	White and Tinted Ready-Mixed Paint	Master Painters Institute (MPI) MPI 8, MPI 9, MPI 94
(C)	Aluminum Ready-Mixed Paint	Federal Specification TT-P-38 or AASHTO M69, Type II
(D)	Black Bridge Paint	MPI 51, MPI 47, MPI 48, MPI 49

708.02 Zinc Paints and Primers. Zinc paints and primers shall conform to the following:

(A)	Zinc Dust-Zinc Oxide Primer	MIL-P-24441/20
(B)	Zinc Oxide-Zinc Dust Paint	Federal Specifications MIL-E-15145
(C)	Zinc Dust Primer Coating	Federal Specifications MIL-PRF-26915D
(D)	High Zinc Dust Content Paint	Federal Specifications MIL-P-21035B

708.03 Dark Green Enamel Paint

(A) Composition.

TABLE 708.03-1 - PIGMENT INGREDIENTS		
PIGMENT	**FEDERAL SPECIFICATIONS**	**POUNDS/100 GALLONS**
Titanium Dioxide	TT-P-442, Type III	29.3
Phthalocyanine Green, Yellow Shade[1]	-	17.0
Chrome Oxide Green	ASTM D-263-76(1999)	137.1

[1] Specific gravity 1.95 + 0.95; contract ratio (5 mil wet film thickness. 15 percent PVC in a medium length "Soya" type alkyd resin with enamel viscosity adjusted to 70 KU with mineral spirits) 0.95 minimum; trichromatic coefficients (when 5 percent of the pigment type blended with 95 percent titanium dioxide in a medium length "Soya" type alkyd resin at 20 percent PVC). x = 0.266 $\pm$ 0.003; y = 0.347 + 0.003; Y = 0.29 + 0.003

TABLE 708.03-2 - VEHICLE INGREDIENTS		
Alkyd Resin Solution[1]	See Subsection 708.03(C) - Alkyd Resin Solution	525.4
Mineral Spirits, Grade[1]	MIL-PRF-680A	-
Driers	ASTM D-600-90(2001)	174.5
Antiskinning Agent	-	-

[1] This quantity based on 50 percent non-volatile.
[2] Less than 10 percent of the mineral spirits may be replaced by Xylene, TT-X-916b, Grade A, to meet viscosity requirements.

(B) Characteristics of Finished Paint.

TABLE 708.03-3 - CHARACTERISTICS OF FINISHED PAINT	
Weight per gallon in pounds (minimum)	8.8
Pigment by weight of paint, percent (minimum)	20.8
Grind (minimum)	7.0
Viscosity, KU at 77 degrees F.	60-70 [3]
Maintain in storage[3]	
DRYING TIME	
Set to touch, hours at 77 degrees F. (maximum)	2
Set for recoating, hours at 77 degrees F. (maximum)	8
Volatile; percent by weight (maximum)	49.3
Skinning, 3/4-filled sealed container after 48 hours	None
COLOR	
Match color chip on file with the Department	

(C) Alkyd Resin Solution. This specification covers an Alkyd Resin Solution having 100 percent content of linseed oil drying alkyd. Alkyd Resin Solution shall be used to formulate synthetic enamels.

TABLE 708.03-4 - CHARACTERISTICS OF SOLUTION	
Non-volatile, percent	49 – 51
Viscosity (Gardner Holdt)	W – Y
Color (Gardner) (maximum)	10
Non-Volatile Portion	
Phthalic Anhydride, percent	29 – 34
Oil Acids, percent	50 – 57
Refraction index of acids	1.473 - 1.485
Acid Number	3 – 14
Iodine number (minimum)	145
Polyhydric Alcohols (Ensure polyols in this resin consist of equal parts by weight of glycerol and pentaerythritol)	
Weight per gallon, pounds	7.58 - 7.75
Thinner, Pounds per gallon,	9.1 - 9.3
Compatibility with pigments	excellent
Miscibility with Linseed Oil	complete
Resin	None
Phenolic resin modifiers	None
Gas Check (Federal Standard 141 with drier)	Pass

(D) Dark Green Enamel Paint. Dark green enamel paint conforming to Federal Specification MPI 51, MPI 47, MPI 48, MPI 49 may be furnished. Color shall match color chip 14062 of Federal Standard 595.

708.04 Paint Thinner. If thinning alone is required, a petroleum thinner shall be used. Paint thinner shall not be used in paints requiring thinners of high solvency, such as lacquers and vinyl resin products. Paint thinner to thin paints may be used when MIL-PRF-680A (Mineral Spirits) is used in the original formulation. MIL-PRF-680A is equal to "mineral spirits" and "paint thinner" that are sold for general use.

TABLE 708.04-1 – PAINT THINNER	
CHARACTERISTICS	**TYPICAL TESTS**
Color Saybolt	±25
API Gravity	44
Flash, TCC, degrees F.	110
Aniline Paint, degrees F.	120
Kauri Butanol value	45
Aromatics, percent	18
Doctor Test	Negative
Corrosion Test	Negative
Distillation, degrees F. IBP 50 90 End Point	 315 345 365 390
This material shall have no objectionable odor.	

708.05 Asphalt Paint. Asphalt paint for protective coating shall be a ready-mix paint conforming to the following:

TABLE 708.05-1 – ASPHALT PAINT

TEST	METHOD	REQUIREMENT
Asphalt Content by weight	AASHTO T 78-96	52 percent Minimum
Test on Residue: Melting Point Penetration at 77 degrees F.	 AASHTO T 53-96 AASHTO T 49-03	 140 degrees F. – 175 degrees F. 20 – 40
Volatile Matter & Petroleum Naphtha by weight	AASHTO T 78-96	48 percent Maximum
Test on Solvent: Initial Boil End Point	 ASTM D 86 ASTM D 86	 250 degrees F. – 350 degrees F. 300 degrees F. – 500 degrees F.
Viscosity of Paint: at 77 degrees F. Flash Point of paint	AASHTO T 72-97 AASHTO T 79-96	600 seconds 80 degrees F. Minimum

END OF SECTION 708