

707 PAINTING

707.01 DESCRIPTION

Work consists of the surface preparation and shop and field painting of new and existing steel structures. Reference will be made to Steel Structures Painting Council (SSPC) Steel Structures Painting Manual, Volume II, Systems and Specifications and other relevant SSPC publications. Painting of materials other than steel will be addressed specifically either in [707](#) or in the contract documents.

707.02 MATERIALS

(A) **GENERAL.** All paints, coatings, component materials, submittal of material samples, laboratory and field tests, and the labeling and shipping of paint containers shall conform to the requirements of [811](#) unless otherwise specified below.

Solvent used for solvent cleaning shall be in accordance with [811.06](#).

(B) PERFORMANCE TESTS AND PRODUCT CERTIFICATION

- (1) The Contractor shall submit manufacturer certifications that the appropriate ASTM tests have been successfully performed on the coating system by an independent testing laboratory. The certification shall show specific test results. In addition, the certified test report shall contain the manufacturer's name and brand name of paint, and the lot numbers of sample from which data is compiled.
- (2) The following information shall be submitted as a complete package for approval for each coat in the system selected at least 2 months prior to the anticipated beginning of painting operations, as applicable to the paints specified for the project:

A one (1) quart sample of each coat (or component, if multiple component paint) in the system.

Infrared curves (2.5 to 15.0 microns) to include curves for the dry film of the vehicle (binder) of each component and for the mixed paint.

Weight per gallon at 77 degrees F.

Percent solids by weight and volume.

Percent of metallic zinc by weight in the cured IOZR primer.

Percent of metallic zinc by weight in the zinc pigment component of the IOZR primer.

Certification from the manufacturer that the zinc dust pigment component of the IOZR primer conforms to ASTM D 520, Type II and that the IOZR primer contains no more than 0.02% lead by weight in the dried film.

Certification from the manufacturer that the material supplied for use as field and repair primer and intermediate and finish coats contain no more than 0.005% lead.

Certification, including a copy of the test report, to the effect that the IOZR primer has been tested and is qualified as Class B (Slip Coefficient 0.50) in accordance with the requirements of Article 10.32.3.2.3, Division I, AASHTO Standard Specifications for Highway Bridges, Sixteenth Edition, 1996.

The manufacturer's recommended method for determining that the IOZR primer has cured sufficiently for bolting of shop connections and application of the intermediate coat.

Technical data sheets, application instructions and material safety data sheets for each coat.

A color chip of the finish coat, of minimum size 8-1/2 inches by 11 inches

Viscosity in Krebs units at 77 degrees F for each coat.

Volatile organic compounds, measured in in pounds per gallon.

- (3) All quantitative parameters shall be expressed either as +/-'s or as maximums and minimums. Test methods used for all parameters shall be quoted.
- (4) All products, including thinners, for the complete system shall be supplied by the same manufacturer and shall be certified as compatible.
- (5) All paints shall be packaged in substantial containers with each bearing a label on which shall be written instructions and precautions for use. Each container shall contain the date of manufacture, the batch number and the product designation.
- (6) The Contractor shall submit product and material safety data sheets and application guides for his proposed system to the Chief Engineer for material approval.
- (7) The Contractor shall supply detailed written instructions from the coating manufacturer on repair procedures, including surface preparation, repair primer, repair intermediate coat, application methods, and any time restrictions. No work will be allowed until these written procedures are submitted to the Chief Engineer. The written procedures shall be followed.
- (8) The manufacturer shall also certify that the coating system has been used successfully for a period of three (3) years in similar service and environment and that the material was applied in coats within manufacturer's recommended dry film thickness. Successful performance shall include sustained adhesion to structural steel. Specific locations, preferably in the mid-Atlantic region or areas of similar climates, shall be given.
- (9) The manufacturer shall have a technical service representative on hand to assist the Contractor the first time that these products are used by the Contractor and shall be available for consultation should any difficulties arise in the use of the products.

(C) LABELING AND PACKAGING

- (1) All containers shall be listed in accordance with ANSI Standard Z129.1.
- (2) Label Requirements – The following information shall be listed in clear, legible type on the label of each container, for each product.

- (a) Product name including component type if applicable.
 - (b) Color name or number of the particular product and component.
 - (c) The lot number or batch number of the product and component.
 - (d) The date of manufacture of the product and component.
 - (e) The manufacturer's name and complete address.
 - (f) Shelf life expiration date.
- (3) Summary mixing instructions shall be listed on the label of each component or reference the appropriate component which lists the mixing ratio.
- (4) Any materials hazardous according to OSHA/EPA regulations shall be listed on the label if they exist in the product in amounts greater than one-tenth of a percent (0.1%) if carcinogenic.

707.03 JOB PERFORMANCE

- (A) **GENERAL.** The painting of new or existing structural steel and other metalwork shall include complete preparation of the metal surfaces, application and protection of the drying paint coatings, removal and proper disposal of existing paint, rust, mill scale and hazardous waste, protection of workers and the environment and furnishing all labor, materials, tools, scaffolding and other equipment, and incidentals necessary for proper execution of the work.

Elements to be coated include the new and existing structural steel members, cross frames, diaphragms, shapes, plates, their connection components and steel bearings. Also included shall be all steel components of the bridge deck drainage system and their supports. Excluded from painting shall be light standards, sign structures, electrical equipment and galvanized steel.

For new steel, the Contractor shall apply a three-coat paint system as specified herein or in the contract documents. All coatings shall be in accordance with [Section 811](#).

For maintenance recoating of existing painted metal surfaces in the field, the Contractor shall apply the type and number of paint coatings as specified in the contract documents. All coatings shall be in accordance with [Section 811](#).

- (B) **CAPABILITY OF WORKERS** – All shop and field painting shall be performed by a Contractor/ Subcontractor qualified for certification by the Steel Structures Painting Council (SSPC) Painting Contractors Certification Program (PCCP) for Class 2 work and meeting the requirements of:
- (1) SSPC-QP 1 Contractor qualification for surface preparation and coatings application in the field and,
 - (2) SSPC-QP 2 for hazardous paint (lead or other) removal and,
 - (3) SSPC-QP fabrication shop qualification for surface preparation and protective coating application in a fixed shop facility

- (4) The SSPC certification shall be obtained and evidence submitted to the District as part of the required submittals for this work. Failure to provide the required SSPC certification(s) shall be grounds for disqualification of the painting Contractor or fabrication shop.

(C) WEATHER CONDITIONS FOR SURFACE PREPARATION AND PAINT APPLICATION

- (1) With the exception of the inorganic zinc-rich primer (IOZR), no outdoor or field painting shall be performed between December 1 and March 15 without prior approval of the Chief Engineer.
- (2) Surface preparation shall not be performed when the steel surface is below 32°F, within 5°F of the dew point or when anticipated weather conditions would preclude application of the primer on the same day.
- (3) Inorganic zinc-rich (IOZR) primer shall not be applied when the ambient, surface and material temperatures are below 40°F, nor when the Chief Engineer anticipates temperature will drop below 40°F within 24 hours. All other coatings shall not be applied at temperatures below 50°F. No painting shall be done when the steel surfaces are above 110°F, when the air is misty or foggy or within 5°F of the dew point, nor when rain is anticipated, nor when relative humidity exceeds, or is expected to exceed, 85 percent within 18 hours, nor when frost or ice exists on the surfaces to be painted, nor when any other conditions are unsatisfactory for painting as determined by the Chief Engineer.
- (4) Should the manufacturer's requirements for a particular material be more stringent than this specification, the manufacturer's requirements shall prevail. Application of coatings outside of normal temperature/humidity recommended ranges as established by the manufacturer shall be subject to the Chief Engineer's approval on a daily basis.
- (5) If, in the opinion of the Chief Engineer, traffic or construction equipment produces an objectionable amount of dust, the Contractor, at his expense, shall allay the dust for the necessary distance and take any other precautions necessary to prevent dust and dirt from coming in contact with freshly painted surfaces or other surfaces to be painted.

(D) PAINTING SCHEDULE AND CONTRACTOR'S SUBMITTALS. Before any painting operations begin the Contractor shall submit in writing to the Chief Engineer his proposed work schedule which shall include:

- (1) A systematic procedure or plan for all cleaning and painting operations.
- (2) A plan for the capture, containment, collection and storage of the waste generated by the work, which includes blasting residue, spent blasting medium, rust, mill scale, paint particles, dust, etc. Included shall be the recovery system for recycling the blasting media. The system shall be capable of adequate removal of dust particles and continuously keeping the grit dry and free of oils, grease and other harmful materials.
- (3) A plan of action, submitted by the Industrial Hygienist, indicating the procedures for monitoring air, soil and water. The plan shall include the type of equipment to be

used and the approximate locations of monitors and test samples for the project area. The Contractor shall also submit a written program for worker protection.

- (4) The type and method of protection against paint spatters drippings, and other disfiguring elements while cleaning and painting over roadways, waterways and areas in vicinity of abutments and piers. Methods of meeting requirements of [707.06](#) shall also be submitted.
- (5) Drawings and computations showing the type and size of scaffolding, rigging and negative pressure containment systems to be used showing all dimensions, sizes of members, types of materials, required negative pressure and capacity of the specified blasting system with a procedure clearly stating how it will be erected.
The drawings and computations shall be certified in writing by a Professional Engineer registered in the District. All portions of the outline and drawing are subject to the Chief Engineer's approval. Any deviation from approved procedures will be allowed only with the Chief Engineer's approval. Approval does not relieve the Contractor of the responsibility for the safety of his methods and equipment, or from carrying out the work in full accordance with specification requirements. Work shall not commence until approval of the Chief Engineer has been obtained.
- (6) The Contractor shall provide adequate, portable lighting equipment in good working order, of a design approved by the Chief Engineer, and at no cost to the District, to supply adequate illumination to the underside of structures while cleaning and painting and for any inspection.

(E) INSPECTION

- (1) All work shall be inspected by authorized personnel representing the District. As each operation (cleaning, blasting, spot painting and each coat of painting) is completed and prior to any succeeding operation on a section, the Contractor shall notify the Chief Engineer for approval before the next operation may begin.
- (2) Any work not meeting approval of District inspectors shall be rejected and redone until it meets their approval. The method of correction shall be approved by the Chief Engineer prior to proceeding. Should any work be done which proceeds past the point where inspector approval is required, the Contractor shall, at the option of the Chief Engineer, remove said work back to that point at no additional cost to the District. The Contractor shall correct work or replace material which is found defective. The method of correction shall be approved by the Chief Engineer.
- (3) Cleaning and surface preparation of each section shall be entirely completed and accepted before painting commences in that section. All paint shall be suitably dry throughout a full section and accepted before any succeeding coat of paint is applied in that section. Any paint applied without the prior approval of the Chief Engineer to begin painting shall be removed by sandblasting to bare metal. This corrective work shall be at the sole expense of the Contractor.
- (4) When surface preparations are complete, surfaces shall be checked for cleanliness, smoothness, anchor profile height and dryness. Cleanliness shall meet the job sample previously established. Anchor profile height shall be measured using replicate tape in accordance with ASTM D4417, "Field Measurement of Surface Profile of Blast Cleaned Steel," Method C – Composite Plastic Tape. Dryness shall

be determined by dew point measurement. The Contractor shall perform these determinations, using his own approved test equipment, in the presence of the Chief Engineer. Prepared areas shall be painted as soon they are accepted by the Chief Engineer.

- (5) Dry paint film shall be randomly measured for thickness, and shall be inspected for non-uniform areas, holidays, runs or sags. Areas not meeting specification requirements shall be corrected to the satisfaction of the Chief Engineer.
- (6) Film thickness on edges, welds, rivets, etc. shall be checked by cutting off a paint chip at representative points with a knife and visually comparing with chip taken from an area of known thickness.
- (7) Adhesion and flexibility of the paint film on the metal shall be checked by cutting loose a narrow strip of the thoroughly dried film from the surface with a knife. Flat side of the blade should make an angle of about 30 degrees with the coated surface. Films of good flexibility and adhesion should come off under the knife in a ribbon and edges of the cut should show a beveled appearance without evidence of flaking.
- (8) To facilitate the inspection, the Contractor shall perform the following:
 - (a) The Contractor shall provide the Chief Engineer with one copy each of the following documents, which will become the property of the District upon completion of the work:
 - SSPC Volume 2 of Steel Structures Painting Manual, Systems and Specifications.
 - SSPC-Vis 1-89 Visual Standard for Abrasive Blast Cleaned Steel Surfaces.
 - SSPC-Vis 2, Color Photographic Standards for Evaluating Degree of Rusting on Painted Steel Surfaces.
 - (b) The Contractor shall supply, maintain and replace as necessary, for the use of the Chief Engineer, the following:
 - Two (2) electronic noise level measuring devices that meet EPA Standards.
 - Two (2) Positector 2000(in) Dry Film Coating Thickness Gauges or approved equal.
 - Two (2) Psychro-Dyne Humidity indicators providing wet and dry bulb temperatures for establishing relative humidity and dew point.
 - Two (2) U.S. Weather Bureau Psychrometric Tables.
 - Two (2) Magnetic thermometers for measuring the surface temperature of metalwork.
 - A sufficient supply of Keane-Tater Surface Profile Compator or Testex Replica Tape for measuring the anchor profile height of the cleaned steel surface.

Upon completion of the contract, the equipment shall remain the property of the Contractor. Additional methods and equipment may be used for inspection procedures by and at the discretion of the Chief Engineer.

- (7) The Contractor shall furnish all necessary apparatus such as ladders, scaffolds, platforms and lighting as required for the inspector to have reasonable and safe access to all work at times deemed necessary by the Chief Engineer for inspection. Rigging shall meet OSHA requirements.

When blast cleaning is performed, the Contractor shall also supply one set of disposable, protective coveralls, daily, for use by the inspector and shall be responsible for proper disposal after they are used. The Contractor shall also supply half face respirators and a sufficient number of cartridges for District inspection purposes as needed by the Chief Engineer. Appropriate cartridges for particulates and organic vapors shall be supplied. The Contractor shall be responsible for disposal of the cartridges after they are used.

(F) REPAIRS

- (1) All defective or damaged areas shall be repaired, at the Contractor's expense. Said areas shall be coated with the full system as required in these specifications. Repair may be limited to touch up of damaged areas but in no way shall the number of coats, the required coating system, or the dry film thickness of each coat be modified because of the repair procedure. Should an area be damaged through to the steel substrate, said area shall receive the specified degree of surface preparation as well as the full coating system as a repair remedy.
- (2) Defects in the paint film, including damage such as scratches and areas of non-adherent paint, and rusting in excess of Rust Grade 8, as determined using SSPC-Vis 2, shall be repaired.
- (3) Prior to shipment of steel to the project site, all areas of non-adherent paint and damaged areas which exhibit rusting shall be re-blasted to the SSPC-SP10 standard and reprimed with the IOZR primer on the same day.
- (4) Subsequent to shipment of steel to the project site:

All damage to the paint film, including rusting, which occurs prior to erection of the steel, shall be repaired before steel is erected.

Minor damaged areas such as scratches, not exceeding one square foot in area, shall be re-blasted to the SSPC-SP 6 standard, or may, at the Contractor's option, be prepared in accordance with SSPC-SP 11, Power Tool Cleaning to Bare Metal, after which they shall be reprimed on the same day using the field primer. Larger areas of defects, if directed by the Chief Engineer, shall be re-blasted to the SSPC-SP 6 standard and re-primed the same day using the field primer.

In no case shall the field primer be applied to any faying surfaces prior to field erection and installation of the fasteners. Necessary repairs to the faying surfaces shall be made as directed by the Chief Engineer.

- (5) All damaged areas shall receive the full system of either the IOZR or field primer and intermediate and finish coats as specified elsewhere in this Specification.

- (G) MAINTENANCE AND PROTECTION OF HIGHWAY AND PEDESTRIAN TRAFFIC AND ADJACENT PROPERTY.** The Contractor shall be responsible for any disfigurement by splatters, smirches and splashes of paint on vehicular traffic and pedestrians, adjacent property and on any portion of the structure or area under the structure. The Contractor shall also be responsible for damage to the structure and adjacent property through the use of scaffolding and other equipment.

Proper drop cloths shall be required to minimize splatters of paint on concrete surfaces. Any damage or disfigurement shall be replaced or cleaned at the sole expense of the Contractor.

707.04 ENVIRONMENTAL PROTECTION

(A) PROTECTION OF WORKERS AND THE ENVIRONMENT.

- (1) Protection of workers and of the environment shall be provided by the Contractor as an integral requirement of the performance of the work. The Contractor shall employ the best current methodology for protection of the worker/employee and the environment by containment of all hazardous material in consideration of the following:

The release of volatile organic compounds (VOC's) and isocyanates during painting.

Protection of workers to prevent exposure to hazardous waste, VOC's, isocyanates, and any other compound deemed hazardous by the jurisdictional agencies.

U.S. Environmental Protection Agency (EPA), U.S. Occupational and Health Administration (OSHA), and District of Columbia Department of Health (DOH) requirements and guidelines pertaining to all of the above.

- (2) The Contractor shall be subject to the requirements of D.C. Municipal Regulation (DCMR) Title 20, Section 605, for control of fugitive dust and the EPA Final Rule, dated September 11, 1998, for "National Volatile Organic Compound Emission Standard for Architectural Coatings"

The Contractor, with the assistance of the D.C. Department of Transportation, shall obtain a permit from DOH to engage in blast cleaning and painting operations. Applicable portions of DCMR Title 20 Section 605 are as follows:

605 CONTROL OF FUGITIVE DUST

605.1 Reasonable precautions shall be taken to minimize the emission of any fugitive dust into the outdoor atmosphere. The reasonable precautions shall include, but not be limited to, the following:

- (g) *...and in the case where dry sandblasting or dry abrasive cleaning is necessary: Use of enclosed areas or hoods, vents, and fabric filters.*

700 ORGANIC SOLVENTS

700.1 No person shall discharge into the atmosphere more than fifteen (15) pounds of photochemically reactive solvents in any one (1) day, nor more than three (3) pounds in any one (1) hour, from any article, machine, equipment, or other contrivance, unless the uncontrolled organic emissions are reduced by at least eighty-five percent (85%).

700.2 No person shall discharge into the atmosphere more than forty (40) pounds of non-photochemically reactive solvents in any one (1) day, nor more than eight (8) pounds in any one (1) hour, from any article, machine, equipment, or other contrivance, unless the uncontrolled organic emissions are reduced by at least eighty-five percent (85%).

In the selection of coatings, the Contractor shall consider the restrictions that DCRA Title 20, Section

700 may place on his painting operations application rate. The Contractor is encouraged to minimize organic solvents discharged by using low VOC rated coatings for the specified paint system.

It is recommended that the Contractor obtain a complete copy of DCMR 20 prior to preparation of bids. Publications may be purchased by mail or in person from:

D.C. Office of Documents and Administrative Issuances
One Judiciary Square, Room 520
441 4th Street, N.W.
Washington, D.C. 20001
Phone: (202) 727-5090

(C) MONITORING.

- (1) **Industrial Hygienist** – When existing structural steel is blast cleaned, the Contractor shall employ the services of an Industrial Hygienist certified by the American Board of Industrial Hygiene. The hygienist shall have errors and omissions insurance coverage and shall be experienced in this type of work.

The hygienist shall monitor worker exposure and ambient air and analyze the soil before, during and after cleaning operations at locations selected by the hygienist and approved by the Chief Engineer. All sampling and testing shall be performed by the industrial hygienist or an employee of that firm under the direct supervision of the hygienist.

Due to the results of these analyses, adjustments to the containment system may be required by the Chief Engineer. The Contractor shall provide a copy of all reports and analyses, including calibrations of all instruments, to the Chief Engineer in a timely manner.

- (2) **Lead/Chromium Exposure Monitoring** – The Contractor shall institute a monitoring program for all employees who occupy a position where they may be exposed to lead and/or chromium. Blood lead/chromium levels shall be taken prior to beginning work and at least every month for the first six months and every two

months, thereafter. Blood lead/chromium tests shall be performed by a clinical laboratory certified by OSHA.

If blood analysis shows a blood lead level of 40mg/dl, blood samples shall be collected every month until two consecutive tests indicate a blood level of less than 40 mg/dl. An employee shall be removed from exposure to lead if his/her blood lead level is at or above 60 mg/dl and/or if the average of the last three blood tests or the average of all blood tests in the previous six (6) months is at or above 50 mg/dl. A follow-up blood test shall be taken within two weeks after any test which exceeds the numerical criteria for medical removal.

The medical removal of workers is intended to protect the employees' health and shall not penalize the worker by loss of earnings, seniority or other employment rights and benefits. An employee can be returned to his/her former position when two consecutive blood lead levels are at or below 40 mg/dl.

The Contractor shall provide the employee with a copy of all blood lead/chromium results. Each employee shall receive a written notice of his/her blood lead level within five days after receipt of the results. It is recommended that a permanent record be kept by the Contractor of employee's blood lead/chromium results.

- (3) **Soil Sampling and Testing** – The industrial hygienist shall test for lead contamination in the vicinity of the project by conducting periodic soil sampling and testing. Soil samples shall be taken at a minimum of six (6) locations at locations determined by the hygienist as approved by the Chief Engineer. At least three (3) sets of soil samples shall be taken; one prior to the start of work, one at the midpoint of construction and one at the completion of all cleaning operations. Soil analyses shall be performed in accordance with SSPC-Guide 6(CON), paragraph 5.5.5, "Method E" as directed by the hygienist.
- (4) **Air Monitoring** – The industrial hygienist shall monitor the quality of air within the vicinity of the project. Work exposure monitoring tests shall be performed outside the face mask and inside the hood of workers and outside and downwind of the containment system. Air monitoring shall begin one week prior to beginning work, during the first two weeks of blast cleaning operations and one month later unless otherwise directed by the Chief Engineer. The number of tests required shall be determined by the Contractor's industrial hygienist and approved by the Chief Engineer. If the data measured is acceptable as determined by an industrial hygienist, additional monitoring will only be required when problems arise as determined by visual assessments of the Contractor's operations. Visible residue on the ground or visible dust shall not be acceptable.

The method for assessing the quantity of emissions shall be in accordance with SSPC-Guide 6(CON), paragraph 5.5.1(a)(2), "Level 1 Emissions". Air monitoring in accordance with paragraph 5.5.3 "Method C" shall be performed to insure compliance with National Ambient Air Quality Standards according to 40 CFR, Part 50, which is 150 mg/m³ over a 24 hour time period.

The Contractor shall provide dust collectors and air flow systems capable of satisfying ambient air and worker exposure requirements. The containment structure shall be checked constantly for holes, rips or tears during cleaning and painting

operations. Should any leaks be found, the Contractor shall immediately cease all cleaning or painting operations until such defects are repaired.

(D) BLAST CLEANING OF EXISTING STEEL.

(1) **Hazardous Waste** – The Contractor is cautioned that the existing paint coatings may contain lead and/or other hazardous elements and compounds and that all residues resulting from blast cleaning, including paint, rust, mill scale and blasting media may be classified as hazardous waste as defined by SSPC-Guide 7(DIS) and all applicable Federal or District regulations. The Contractor is required under this contract to dispose of these materials as hazardous waste as required by the applicable regulations. The Contractor shall obtain an EPA hazardous waste generator identification number from the District.

(2) **Containment Systems** – Materials resulting from blast cleaning in the field shall not be allowed to fall on the ground or become airborne outside the immediate work area. A negative air pressure containment system meeting the requirements of SSPC-Guide 6(CON), Class 3, shall be required to prevent the escape of fugitive dust into the environment. All rust, scale, loose paint, grease, oil and materials used in blast cleaning shall be stored and disposed of as hazardous waste in conformance with District, EPA and OSHA requirements, as applicable.

The containment system shall be capable of maintaining no visible discharge when blast cleaning is performed in the center of the containment. Only slight or minor airborne discharge will be permitted when work is being performed near the end or sides of the containment. Air flow shall be established in the containment such that fugitive dust is directed away from the work area. The abrasive recovery/recycling system shall have adequate filters and controls so no visible discharge occurs during recovery, recycling or handling of the abrasive.

(3) **Worker Protection** – Workers performing abrasive blast cleaning shall wear full body protective clothing with a continuous flow, airline, abrasive blasting respirator for protection from lead and/or silica dust or fumes. The garment material shall permit the passage of air and shall be impermeable to lead fumes, mist or dust. All respirators must be an approved type, certified by the National Institute for Occupational Safety and Health (NIOSH).

The Contractor shall ensure that all protective clothing is removed at the completion of a work shift only in designated change areas which are sufficiently separated from other facilities. All contaminated protective clothing which is to be cleaned, laundered or disposed of shall be placed in a closed container, located in the designated change area, which prevents dispersion of lead. The container shall be labeled as containing clothing contaminated with lead. Provisions shall be made for the cleaning, laundering or disposal of protective equipment and repair or replacement of equipment as needed to maintain their effectiveness. Adequate washroom and shower facilities shall be located adjacent to the designated change area.

(4) **Temporary Storage of Hazardous Waste** – The Contractor shall obtain a temporary storage site for hazardous wastes meeting the requirements of SSPC-Guide 7(DIS). This site shall be a fenced and locked area where the public does not

have access, and is not in a flood plain. The area shall be marked as containing hazardous waste. The material shall be kept in closed containers while in temporary storage. No hazardous waste shall be kept longer than 90 days in the temporary storage site before shipment. The Contractor shall prepare all manifests for transportation and disposal of the waste. The completed manifest containing all required signatures shall be submitted to the Chief Engineer. The hazardous waste shall then be transported to an approved hazardous waste disposal site.

- (5) **Field Repairs** – If blast cleaning is required during field repair of damaged paint surfaces, the Contractor shall also be subject to [Section 605](#), for control of fugitive dust. The Contractor is liable for all expenses and time delays in performing this repair work. Included in this work is prior approval of detailed procedures with types of equipment to be used.
- (E) **PAINTING OPERATIONS.** For painting operations, full ventilated enclosures are required to prevent overspray into the atmosphere and onto private property. Workers engaged in spray painting operations shall be provided with full body protection with either a powered air purifying respirator or an air supplied respirator. Drop cloths shall be intended to be used only as a secondary (backup) system to prevent paint from falling on the ground.
- (F) **CONTRACTOR'S METHODS.** The methods proposed by the Contractor shall be approved by the Chief Engineer before work may proceed. Approval by the Chief Engineer does not relieve the Contractor of any responsibility for meeting all Federal, State and local regulations on air quality, water quality, hazardous materials, hazardous waste, public health or the laws of any regulatory agency.
- (G) **MEETINGS.** The Contractor, with the Chief Engineer in attendance, shall hold meetings to inform all workers of the potential safety and health hazards of this work and what steps are being taken to reduce the risk of contamination, and to give instructions in the use of protective equipment. The protection of the workers and the environment and the recovery, transportation and disposal of hazardous waste shall be of the utmost importance.

707.05 COATING SYSTEMS

- (A) **NEW STRUCTURAL STEEL.** New structural steel shall receive the following coatings selected from the list of paint systems found in the contract documents:
 - Stripe Coat** – All edges, including flanges, shop-installed nuts and bolts, and welds, shall receive a stripe coat of primer just prior to application of the primer coat. The stripe coat shall be brush applied. The paint shall either be constantly agitated, or stirred just prior to application.
 - Primer** – One shop coat of inorganic zinc-rich (IOZR) primer conforming to the requirements as specified herein to a dry film thickness (DFT) in accordance with the manufacturer's recommendations. This coat shall be applied the same day of blast cleaning.
 - Intermediate** – One coat of epoxy paint conforming to the requirements specified herein, with a minimum DFT in accordance with the manufacturer's recommendations.

Finish – One (or more) coat(s) of urethane topcoat, tinted as specified in the contract documents, conforming to the requirements specified herein with a minimum DFT in accordance with the manufacturer’s recommendations to the total DFT specified for the project .

Following installation in the field, new steel shall receive touch-up coats on damaged areas as specified in [707.03\(F\), REPAIRS](#).

- (B) EXISTING STRUCTURAL STEEL.** All existing metal surfaces, except those specifically excluded, shall receive the following coatings selected from the list of paint systems found in the contract documents.

Primer – One coat of organic-zinc field primer conforming to the requirements specified herein with a minimum dry film thickness (DFT) in accordance with the manufacturer’s recommendations.

Intermediate – One coat of epoxy paint conforming to the requirements specified herein with a minimum DFT in accordance with the manufacturer’s recommendations.

Finish – One or more coats of urethane paint, tinted as specified in the contract documents, conforming to the requirements specified herein with a minimum DFT in accordance with the manufacturer’s recommendations to a total DFT specified for the project.

- (C) APPROVED PAINT SYSTEMS.** The listing of all paint coating systems found in section 811 of these specifications have been given conditional approval, subject to meeting composition, physical properties, performance criteria and environmental criteria.

Alternate systems, selected from the current approved lists of the Maryland State Highway Administration and the Virginia Department of Transportation, may be submitted for approval. Said systems shall be accompanied by full documentation, including the state’s list of approved systems. All products, including thinners, for the complete system shall be from the same manufacturer.

- (D) PREPARATION OF PAINT.** All paint shall be used directly from original shipping containers without any additions or thinning except lampblack. Lampblack shall be added only as directed by the Chief Engineer.

All ingredients in any container of paint shall be thoroughly field mixed before use and agitated often enough during application to keep the pigment in suspension. In cool weather paint may be warmed by slowly heating the paint containers in warm water. When warming paints their temperature shall not be permitted to exceed 100°F.

Paint first shall be mixed in the original container and not transferred until all settled pigment is incorporated into the vehicle. However, a portion of the vehicle may be poured off temporarily to simplify mixing.

Mixing shall be done by mechanical methods except that hand mixing will be permitted for original containers up to 5 gallons in size. Mixing in open containers shall be done in a well ventilated area away from sparks or flames. Paint shall not be mixed or kept in suspension by means of an air stream bubbling under the paint surface.

Where a skin has formed in the container, the skin shall be cut loose from the sides of the container, removed and discarded. If such skins are thick enough to have a detrimental effect on the composition and quality of the paint, the paint shall not be used.

The paint shall be mixed in a manner which will insure breakup of all lumps, complete dispersion of settled pigment and a uniform composition. When mixing is done by hand, most of the vehicle first shall be poured off into a clean container. The pigment shall be lifted from the bottom of the container with a broad, flat, clean paddle, lumps shall be broken up and the pigment thoroughly mixed with the vehicle. The poured off vehicle then shall be returned to the paint with simultaneous stirring, or pouring repeatedly from one container to another until composition is uniform. The bottom of the container shall be inspected for unmixed pigment.

All pigmented paint shall be strained after mixing; strainers shall consist of cheesecloth or a medium mesh screen (No. 6 mesh) and shall show only a trace of skins and undispersed lumps.

Lampblack pastes shall be wetted with a small amount of paint and thoroughly mixed. The thinned mixture shall then be added to the large container of paint and mixed until color is uniform.

Paint which does not have limited pot life or does not deteriorate on standing may be mixed at any time before using. If settling has occurred the paint must be remixed immediately before using. Paint shall not remain in spray pots, painter's buckets, etc., overnight, but shall be gathered into the original container or a central container and remixed before use.

Paint not meeting the strainer test, or with thick skins detrimental to composition, or not meeting the test requirements in accordance with [811.01](#), shall be rejected on this basis alone and removed from the work area to the satisfaction of the Chief Engineer.

All varsol, turpentine and any other solvents shall be stored at least 300 feet away from any paint being stored in previously opened containers, paint being mixed, and paint operations. Any paint which becomes mixed or contaminated with any such varsol, turpentine, solvents, or any other foreign substance shall be rejected on this basis alone and immediately removed from the work area to the satisfaction of the Chief Engineer.

707.06 SURFACE PREPARATION

(A) STANDARDS FOR SURFACE PREPARATION

- (1) The degree of preparation attained will be determined by the use of SSPC-Vis 1-89, Visual Standard for Abrasive Blast Cleaned Steel. Abrasive blasting of structural steel shall be performed using recyclable abrasives in the form of steel shot, steel grit, or a combination of the two, in a size or combination of sizes sufficient to impart the specified surface profile. Abrasives that contain greater than 110 ppm chloride, sulfate or other similar corrosives shall not be used. Dehumidification equipment shall be used to protect the abrasive from atmospheric corrosion.
- (2) After blast cleaning, the surface of existing steel shall have an anchor profile height of a minimum of one (1) mil, and the surface of new steel shall have an anchor profile height of one (1) to three (3) mils in a dense uniform pattern of depressions

and ridges as determined by the Keane-Tator Surface Profile Comparator or Testex Replica Tape. If necessary, the area shall be re-blasted to give the specified anchor profile height.

- (B) INITIAL SURFACE PREPARATION.** Prior to blast cleaning, the following operations shall be performed:
- (1) All weld spatter and slag shall be removed and all sharp corners on the bottom flanges and cross frame members shall be rounded to a 1/8+ inch radius or equivalent flat surface.
 - (2) All fins, tears, slivers and burred edges that are present on any steel member, or that appear during the blasting operation, shall be removed by grinding and the area re-blasted to provide the specified surface profile.
 - (3) All drilling and reaming of holes in the steel shall be completed and free of burrs or other imperfections, such as torn or ragged edges prior to blast cleaning.
- (C) BLAST CLEANING OF NEW STEEL.** Surfaces of new steel shall be prepared for shop painting in accordance with SSPC Steel Structures Painting Manual, Volume 2, Surface Preparation No. 10, Near-White Metal Blast Cleaning.
- (D) BLAST CLEANING OF EXISTING STEEL.** Surfaces of existing steel shall be prepared for repainting by blast cleaning, except those which are considered inaccessible for this procedure, in accordance with SSPC Steel Structures Painting Manual, Volume 2, Surface Preparation Specification No. 6, Commercial Blast Cleaning. As an alternative, inaccessible areas shall be prepared in accordance with SSPC-SP11-87T, Power Tool Cleaning to Bare Metal.

Special attention shall be given to the procedures described in Sections 5 and 7 of SSPC-SP 6 which describe required surface preparation before and after blast cleaning. Soil, concrete splatter, oil, grease, salts, dirt film, or other foreign matter shall be removed by brushing with stiff wire brushes, scraping and washing with cleaning solutions before blast cleaning. All fins, tears, slivers, sharp edges, weld spatter and burning slag shall be removed by grinding and the area re-blasted to achieve required surface profile.

If directed by the Chief Engineer, an additional blast cleaning of the surface shall be done in all areas subject to chloride contamination, such as expansion joints. The appearance of the prepared surfaces shall be compared with the appropriate photographs in SSPC-Vis 1-89. The Chief Engineer will be the sole-approving authority of the adequacy of the surface preparation.

The Contractor is cautioned that if the surfaces of existing structural steel are believed to be coated with mill scale, the removal of the mill scale is included in the required work.

Sand-blast and water-blast techniques will not be permitted.

After the prepared surfaces of existing steel have been inspected and accepted, the surfaces, except for faying areas, shall be primed the same day. Should surface rust-back occur before primer application, the affected area shall be blast cleaned at no extra cost to the District.

The Contractor shall take the necessary measures to protect previously painted surfaces adjacent to blast cleaning operations from damage resulting from these activities. These measures shall not relieve the Contractor of the responsibility of repairing all damage to newly painted surfaces as a result of the blast cleaning operations.

- (E) **WOOD SURFACES.** Wood surfaces shall be prepared by scraping with wood scrapers or sanding with coarse and/or fine sandpaper and dusting the surfaces, or a combination of these methods, until surfaces are smooth and un-splintered.

707.07 GENERAL REQUIREMENTS FOR PAINT APPLICATION

- (A) **GENERAL.** All paint shall be applied in accordance with SSPC-PA1, Shop, Field and Maintenance Painting and as hereafter specified.
- (B) **PAINT COATINGS.** All new structural steel shall be painted at the fabrication shop with one coat of inorganic zinc rich primer (IZOR) as specified in [707.05\(A\)](#). All existing structural steel shall be painted with one coat of field primer as specified in [707.05\(B\)](#). All structural steel, except for dam assemblies, surfaces in contact with concrete and faying surfaces shall then receive intermediate and finish coats of acrylic paint.
- (C) **GALVANIZED STEEL.** Unless otherwise specified, galvanized surfaces shall not be painted. Machine finished surfaces or portions thereof which are to bear and slide on other surfaces shall not be painted, but shall be coated prior to shipping with a corrosion inhibiting multipurpose grease or other specified coating.
- (D) **STORAGE AND MIXING OF PAINT.** All paint shall be stored, mixed, thinned, and applied in accordance with the manufacturers recommendations. In cases when the manufacturer's recommendations differ from the requirements specified herein, those which are more stringent shall govern. In cases where manufacturer's recommendations are more lenient than the requirements in this specification, they shall govern only if specifically authorized by the Chief Engineer.

All paint shall be mixed using power mixers of the type recommended by the manufacturer. Only complete kits of the inorganic zinc-rich (IOZR) primer shall be mixed. IOZR primer which exceeds its pot life shall be discarded. Paints shall be frequently mixed during application. IOZR primer shall be continuously agitated and shall be applied from containers equipped with a mechanical agitator which shall be in constant use during application. Paints shall be frequently remixed during application. Paints shall be thinned only with prior approval of the Chief Engineer.

- (E) **CLEANING OF PREPARED SURFACES.** Prior to application of each coat, the surfaces to be painted shall be cleaned as necessary so as to be dry and free of dirt, grease and oil contamination. All residues of abrasives, paint and dust remaining after blast cleaning or other operations shall be removed using a commercial grade vacuum cleaner equipped with a brush type cleaning tool or by double blowing with clean air. If the double blowing method is used, the top surfaces of all steel shall be vacuumed after the double blowing operation is complete. Compressed air used in this operation shall be clean and free of oil, grit and moisture.
- (F) **COMPRESSED AIR.** Compressed air used for all operations, including abrasive blasting, cleaning and painting shall conform to ASTM D 4285. All compressed air

supply lines shall be provided with oil traps and moisture separators, which shall be emptied and/or changed, as appropriate, on a regular basis. Separators and traps shall be located at the abrasive pots and material containers instead of at the compressors.

- (G) APPLICATION METHODS.** IOZR primer shall be applied by spraying, except that brushes may be used to facilitate coating of and around fasteners. Other paint coatings may be applied by any combination of methods or equipment that are recommended by the manufacturer. If rollers are used, they shall be of a type which does not leave a stippled texture in the paint film. Rollers shall be used only on flat, even surfaces and shall be followed by a brush to level off any bubbles.

Application of paint shall result in a tight film of specified thickness, well bonded to the metal or underlying coatings, including all crevices and corners and shall be free from laps, streaks, sags, bubbles, runs, overspray, dry spray, shadow-through, skips, excessive film buildup, misses and other defects. If required by the Chief Engineer, edges shall be striped with a longitudinal motion and fastener components with a rotary motion immediately prior to the application of the full coat.

- (H) DRY FILM THICKNESS REQUIREMENTS.** Except as noted in the following paragraph, the IOZR and field primer shall be applied to a dry film thickness (DFT) of 3 to 5 mils above the surface profile, and the intermediate and finish coats shall each be applied to a DFT of 3 to 5 mils. The nominal cumulative DFT after application of the finish coat shall be 9 mils, and shall be defined as a minimum of 8 and a maximum of 15 cumulative mils above the surface profile.

IOZR shall be applied to a minimum DFT of 4 mils above the surface profile on the interior surfaces of box beams not receiving intermediate and finish coats.

DFT's shall be determined in accordance with SSPC-PA 2, Measurement of Dry Paint Thickness with Magnetic Gages, except that the 80% tolerance will not be allowed.

- (I) APPLICATION METHODS.**

- (1) CONVENTIONAL AIR SPRAY APPLICATION.** Spraying shall be done with a suitable spray gun of a type and with a method of operation approved by the paint manufacturer for the paint used, without thinning, and acceptable to the Chief Engineer. Traps or separators shall be provided to remove oil and condensed water from the air. These traps or separators must be of adequate size and must be drained periodically during operations. Air from the spray gun impinging against the surface shall show no condensed water or oil. Proper uniform air pressure shall be maintained so as to secure even operation.

Spraying operations shall be carried out so as to secure an even paint film of uniform thickness over all areas to be painted. Thickness of paint film by spray painting shall be equivalent to that secured by approved brush painting and that specified, as measured by a magnetic film thickness gauge. When necessary to secure uniform coverage and to eliminate wrinkling, blistering and airholes, spray painting shall be followed immediately by brush painting.

- (2) AIRLESS SPRAY APPLICATION.** The equipment used shall be suitable for the intended purpose, shall be capable of properly atomizing the paint to be applied, and

shall be equipped with suitable pressure regulators and gauges. The equipment shall be maintained in proper working condition.

Paint ingredients shall be kept uniformly mixed in the spray pots or containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.

Fluid tips shall be of proper orifice size and fan angle, and the fluid control gun of proper construction, as recommended by the manufacturer of the material being sprayed and the equipment being used. Fluid tips shall be of the safety type with shields to prevent penetration of the skins by the high pressure stream of paint.

The air pressure to the paint pump shall be adjusted so that the paint pressure to the gun is proper for optimum spraying effectiveness. This pressure shall be sufficiently high to properly atomize the paint. Pressures considerably higher than those necessary to properly atomize the paint should not be used.

Spraying equipment shall be kept clean and shall utilize proper filters in the high pressure line so that dirt, dry paint, and other foreign material are not deposited in the paint film. Any solvents left in the equipment shall be completely removed before applying paint.

The trigger of the gun shall be pulled fully open and held fully open during all spraying to insure proper application of paint.

Paint shall be applied in a uniform layer with overlapping at the edges of the spray pattern. During application, the gun shall be held perpendicular to the surface and at a distance which will ensure that a wet layer of paint is deposited on the surface. The trigger of the gun should be released at the end of each stroke.

All runs and sags shall be brushed out immediately or the coating shall be removed and the surface repainted.

Cracks, crevices, blind areas of all rivets and bolts, and all other inaccessible areas shall be painted by brush, daubers, or sheepskins.

Paint shall be suitable for the particular spray application method used.

Particular care shall be observed with respect to paint temperature and operating techniques in order to avoid deposition of paint which is too viscous, too dry, or too thin.

Airless paint spray equipment shall always be provided with an electric ground wire in the high pressure line between the gun and the pumping equipment. Further, the pumping equipment shall be suitably grounded to avoid the build-up of any electrostatic charge on the gun. The manufacturer's instructions shall be followed regarding the proper use of the equipment.

- (3) **BRUSH APPLICATION.** Brushes shall be of a style and quality that will enable proper application of paint. Round or oval brushes shall be used for painting rivets, bolts, irregular surfaces, and rough or pitted steel. Wide, flat brushes, not having a width over five (5) inches, shall be used for large flat surfaces.

The brushing shall be done so that a smooth coat as nearly uniform in thickness as possible is obtained. Paint shall be worked into all crevices and corners where

possible. All runs or sags shall be brushed out. There shall be a minimum of brush marks left in the applied paint. Surfaces not accessible to brushes shall be painted by spray, daubers, or sheepskins.

- (4) **ROLLER APPLICATION.** Roller application may be used on flat or slightly curved surfaces and shall be in accordance with the recommendations of the paint manufacturer and roller manufacturer. Paint rollers shall be of a style and quality that will enable proper application of paint having the continuity and thickness required.

Roller application shall not be used on irregular surfaces such as rivets, bolts, crevices, welds, corners, or edges.

707.08 SHOP PAINTING

- (A) The Contractor has the option to apply the intermediate and finish coats at the fabrication shop. In this case, all requirements that apply to the application of intermediate and finish coats stated elsewhere in this specification shall apply. Choice of this option shall not relieve the Contractor of the obligation to exercise all reasonable care to protect the surface coatings in the storage, shipping and erection of structural steel and during the placement of concrete.
- (B) If the Contractor exercises the option to apply the intermediate and/or finish coat at the fabrication shop, the faying surfaces shall be masked off. Intermediate and finish coats shall be applied to the exposed surfaces at bolted connections only after installation of the fasteners has been completed.
- (C) The following restrictions apply to application of the IOZR primer:
- The primer shall be applied the same day that the surface is blast cleaned. Surfaces that are not primed the same day they are blast cleaned shall be re-blasted to the specified degree of surface preparation prior to application of the primer.
 - The primer shall be continuously agitated during mixing and application.
 - After mixing, the primer shall be strained through a 30 to 60 mesh screen.
- (D) After application of the IOZR primer:
- Zinc salts shall be removed by water blasting.
 - Dry overspray shall be removed by rubbing with a wire screen. Where such an operation results in deficient DFT, the area affected shall be re-blasted to the specified degree of surface preparation and the primer reapplied.
 - Primer which exhibits mud cracking shall be re-blasted to the specified degree of surface preparation and the primer reapplied.
 - The dry film thickness (DFT) of the primer shall be measured. Areas exhibiting deficient or excessive DFT shall be re-blasted and the primer reapplied to the specified DFT.
- (E) IOZR primer shall be cured in accordance with the manufacturer's recommendations and as follows prior to application of the intermediate coat and before bolting of connections:

Solvent based IOZR primer shall cure for a minimum of 24 hours at 50° F or above and 50% relative humidity or above.

Water based IOZR primer shall cure for a minimum of 24 hours at 50° F or above and 85% relative humidity or above.

All small cracks, cavities, and open seams around crimped stiffeners, connections, etc., shall be caulked with an approved caulking putty, and allowed to semi-dry before the prime coat is applied.

Surfaces not in contact but inaccessible after shop assembly shall be given an additional coat and shall be applied at a minimum dry film thickness of 1.5 mils.

With the exception of faced abutting joints, machine finished surfaces, including bearing rockers and pins, pin holes, sliding bearing contact areas, rocker-base plate contact areas, etc., shall be coated with Lubriplate 630AA, Drydene Multi-white, Rust Inhibitor, or approved equal as soon as practicable after cleaning.

Areas to be field welded shall be given 1 coat of rust- inhibitive petrolatum primer conforming to requirements of [811.03\(I\)](#).

Erection marks and weight marks shall be reapplied after shop painting unless marker tags are attached.

Material shall not be loaded for shipment until it is thoroughly dry and in any case not less than 24 hours after shop paint has been applied. No degree of tackiness shall be present at the time of loading.

707.09 FIELD PAINTING

- (A) In the case where the Contractor does not exercise the option to apply both intermediate and finish coats in the fabrication shop and not more than two weeks prior to application of the first field coat to the new steel, the exposed surfaces to be coated shall be cleaned by a high pressure water wash (800 psi. minimum), and dried, or allowed to dry, prior to application of the next coat of paint. The water shall meet the requirements of [822.01](#).
- (B) Additionally, in cases where a winter season has elapsed since application of the previous coat of paint to either new or existing steel, said surfaces shall be cleaned, as described in the previous paragraph, not more than two weeks prior to the application of the next coat of paint.
- (C) Any areas exhibiting rusting in excess of Rust Grade 8, as determined using SSPC-Vis 2, or where this required cleaning results in failure of previously applied paint, shall be repaired as specified in [707.03\(F\)](#).
- (D) Field primer shall be applied the same day the surface is blast cleaned. Surfaces that are not primed the same day they are blast cleaned shall be re-blasted to the specified degree of surface preparation and recoated with field primer.
- (E) Prior to application of the intermediate coat:
 - Dry overspray shall be removed by rubbing with a wire screen.

Primer which exhibits mud-cracking shall be removed. The area shall be reblasted to the specified degree of surface preparation and the primer reapplied.

Surfaces which exhibit rusting in excess of Rust Grade 8, as determined using SSPC-Vis 2, shall be re-blasted to the specified degree of surface preparation and the primer reapplied.

Zinc salts shall be removed by water blasting.

The dry film thickness (DFT) of the primer shall be measured. Areas exhibiting deficient or excessive DFT shall be re-blasted and the primer reapplied to the specified DFT.

- (F) The intermediate coat, if applied by spraying, shall be mist coated over the IOZR primer prior to application of the full wet film thickness, if necessary, in order to prevent bubbling.
- (G) The field primer and intermediate coat shall cure for the minimum drying period as stated by the manufacturer and shall not be recoated until verified by the Chief Engineer. Additionally, the paint shall have
- (H) Prior to application of the finish coat:

The cumulative DFT of the prime and intermediate coats shall be measured. The measured DFT shall be from 5 to 10 mils above the surface profile, except that the 80% tolerance specified in SSPC-PA 2 will not be allowed. Dry film thickness shall be determined in accordance with SSPC-PA 2, Measurement of Dry Film Thickness with Magnetic Gauges.

Surfaces which exhibit rust in excess of Rust Grade 8, as determined using SSPC-Vis 2, shall be re-blasted to the specified degree of surface preparation and the primer and intermediate coats reapplied.

- (I) After application of the finish coat, the cumulative dry film thickness shall be measured and shall be between 8 and 15 mils, except that the 80% tolerance specified in SSPC-PA 2 will not be allowed.
- (J) Areas exhibiting DFT's outside these limits shall be corrected as directed by the Chief Engineer.

All paint shall be purchased in the tinted condition and under no circumstances shall tinting be accomplished on the project except by adding lampblack. A color sample of the proposed paint shall be submitted to the Chief Engineer for approval prior to use on the job.

- (K) **CONSTRUCTION METHODS.** Cleaning and painting shall proceed by sections usually consisting of a complete span, bay, portal, as approved by the Chief Engineer. Field painting of new metalwork shall not start until the concrete deck slab has been placed and all removable formwork has been removed. If false work is not utilized for a painting scaffolding, suitable measures as approved by the Chief Engineer shall be provided to protect any traffic using roadways under structures from paint splatters, spray and cleaning operations.

All small cracks, cavities, and open seams around field splices and other field connections shall be caulked with an approved caulking putty, and allowed to semi-dry.

New open grid steel decking shall receive two top coats when erected; all bars shall be completely painted and dry before structure is opened to traffic. Maintenance painting of open grid steel decking shall exclude surfaces of the grate bars exposed to vehicular traffic. However, grate bars in sidewalks, safety walks, and medians shall be completely painted.

- (L) PAINTING GALVANIZED METAL.** New galvanized metal shall not be painted. When painting of existing galvanized metal is specified in the contract documents, surfaces first shall be cleaned in accordance with [707.06\(B\)](#) and then primed with 1 complete coat of zinc dust-zinc oxide primer conforming to requirements of [811.03\(H\)](#), and a top coat conforming to [811.05\(A\)](#) at 1.0 mil each.
- (M) PAINTING WOOD.** Wood items shall be given 1 coat of wood primer-sealer conforming to requirements of [811.03\(J\)](#) prior to field painting or maintenance painting. Primer-sealer preferably shall be permitted to dry before paint is applied; otherwise primer-sealer shall dry to touch (heavy thumb pressure).

For new construction or when two coats of white paint are required, the first coat shall conform to requirements of [811.05\(E\)2](#), except that lampblack tinting shall be used. Final field coat shall conform to the requirements of [811.05\(E\)2](#).

For maintenance painting, the number of coats shall conform to requirements of the contract documents.

707.10 MEASURE AND PAYMENT

The unit of measure for painting will be the lump sum. No actual measurement will be made.

Painting will be paid for at the contract lump sum price for the accepted items in the Schedule of Prices, which payment will include all cleaning and preparation of the surfaces, application and protection of drying paint coats, repair of damaged or unsatisfactory paint coats, application of paint to bridge deck drainage, protection of all portions of structure or structures against any disfigurement and against any physical damage, maintenance and protection of highway and pedestrian traffic, protection of and access to adjacent property, environmental protection, proper disposal of hazardous materials, and furnishing all labor, materials, tools, equipment and incidentals necessary to complete the work as specified herein.