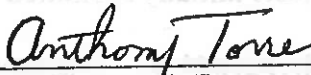


SUPERSEDED BY EB 15-031 EFFECTIVE 9/28/15		New York State Department of Transportation ENGINEERING INSTRUCTION	EI 12-016
Title: REVISIONS TO PAINTING STANDARD SPECIFICATIONS SECTIONS 572, 573, 574, 657, §708-01 AND §708-02			
Target Audience: ☒ Manufacturers (18) ☒ Local Govt. (31) ☒ Agencies (32) ☐ Surveyors (33) ☒ Consultants (34) ☒ Contractors (39) ☐ _____ ()		Approved:  Anthony Torre, P.E., Acting Deputy Chief Engineer (Research) Date <u>06-13-2012</u>	

ADMINISTRATIVE INFORMATION:

- This Engineering Instruction (EI) is effective with projects submitted for the letting of 01/10/13.
- This EI does not supersede any other issuances.
- The revisions issued with this EI will be incorporated into a future update of the Standard Specifications.

PURPOSE: The purpose of this EI is to:

- Revise Standard Specification Section 572, *Structural Steel Painting: Shop Applied*.
- Revise Standard Specification Section 573, *Structural Steel Painting: Field Applied – Total Removal*.
- Revise Standard Specification Section 574, *Structural Steel Painting: Overcoating and Localized*.
- Revise Standard Specification Section 657, *Painting Galvanized and Aluminum Surfaces*.
- Revise Standard Specification §708-01, *Structural Steel Paints Class 1*.
- Revise Standard Specification §708-02, *Structural Steel Paints Class 2*.

TECHNICAL INFORMATION:

The changes effected through this EI:

- Clarifies the intended application temperature, and restricts the use of accelerators to overcome temperature limitations in §572-3.03, §573-3.03, §574-3.04 and §657-3.02.
- Sets cure time limit before shop painted steel can be removed from the shop enclosure in §572-3.03.
- Adds a lump sum pay item to Section 572.
- Refers to the Steel Construction Manual for guidance on painting of slip critical faying surfaces in §572-3.03.
- Adds a second coat of primer on all corroded areas cleaned to bare metal to assure coverage of rough, pitted surfaces in §574-3.
- Replaces the use of zinc chromate primer, due to its limited availability, with two coats of polyamide epoxy to coat aluminum which will be in contact with concrete in Section 657-2.02.
- Adds guidance for the repair of damaged areas in §657-3.03.
- Refers to the recently updated Materials Method NY 6, *Approval and Quality Assurance of Class 1 and Class 2 Structural Steel Paints*, and NEPCOAT's Qualified Products List NTPEP test criterion for Class 1 and Class 2 Structural Steel Paint Approved List requirements in §708-01 and §708-02.
- Corrects other minor issues in the subject Standard Specifications.
- There is no anticipated significant cost impact associated with this change. There may be a slight increase in cost associated with the additional prime coat on corroded areas cleaned to bare metal in

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the §574-3 revision. However, the painting procedure was originally intended to have two coats of primer over bare metal and this revision corrects an inadvertent omission in the original specification.

IMPLEMENTATION: The Design Quality Assurance Bureau will insert the Standard Specification revisions into contract proposals that include items beginning with root numbers 572, 573, 574 and 657 beginning with projects initially submitted for the letting of January 10, 2013.

TRANSMITTED MATERIALS: Changes to Standard Specification Sections 572 *Structural Steel Painting: Shop Applied*; 573, *Structural Steel Painting: Field Applied – Total Removal*; 574, *Structural Steel Painting: Overcoating and Localized*; 657, *Painting Galvanized and Aluminum Surfaces*; §708-01, *Structural Steel Paints Class 1*; §708-02, *Structural Steel Paints Class 2*; both metric and US customary, are attached.

BACKGROUND: New paint specifications were issued in 2006 to improve the corrosion protection afforded new or refurbished bridges and incidentals. Feedback and observations from five seasons of painting work utilizing the new specifications have revealed issues that needed to be corrected or language that needed to be clarified.

Zinc chromate primer has been used for decades to protect aluminum. In the Department's case it has been used to protect aluminum from alkali attack when designed to be in contact with high pH concrete. However, hexavalent chrome has been identified as a known human carcinogen, diminishing the availability of zinc chromate primer. Due to the limited availability of zinc chromate primer, a two coat polyamide epoxy paint system is being specified for coating aluminum in contact with concrete to prevent alkali attack.

CONTACT: Direct questions regarding this EI to William Feliciano at (518) 457-4596 or via e-mail at wfeliciano@dot.state.ny.us.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Make the following change to Standard Specifications Construction and Materials of May 4, 2006:

Page 421, Replace the last two sentences of **§572-2.01 Paints** with the following:

All new paint applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field components of the structure.

Page 421, Replace the first sentence of **§572-2.01 A. Shelf Life** with the following two sentences:

The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinner shall be the manufacturer's recommendation or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken.

Page 421, Replace **§572-2.01 D. Data Sheets** in its entirety with the following:

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's Representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 Approved List.

Page 423, Add the following to the end of the first paragraph of **§572-3.03 PAINTING:**

Painted steel shall not be placed outside the shop until all paint coats have dried "through / to-handle" or "minimum time to recoat" per paint manufacturer's recommendations, whichever is greater.

Page 423, Replace **§572-3.03 A. Atmospheric Conditions** in its entirety with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 5°C and rising. Paint shall not be applied when surface or ambient temperatures are greater than 38°C. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is dry.

Paint shall not be applied when the relative humidity is more than 85% or the receiving surface is less than 3°C above the dew point temperature. If the manufacturer's data sheets have a more restrictive range then they shall be followed.

Page 423, Replace the second and third sentences of the first paragraph of **§572-3.03 C. Solvents and Thinners** with the following:

The primer shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. Intermediate and finish coats shall not be thinned where the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings.

Page 424, Replace the first sentence of the second paragraph of **§572-3.03 D. Paint Application** with the following:

All steel surfaces that will be in contact with concrete shall not be painted.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 424, Replace the last sentence of the first paragraph of **§572-3.03 F. Paint Film Thickness** with the following two sentences:

Dry film thickness gauges shall be calibrated over a blasted, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable.

Page 424, Add the following sentence at the end of the second paragraph of **§572-3.03 F. Paint Film Thickness**:

At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Page 424, Replace **§572-3.03 F. Paint Film Thickness, Slip-Critical Connections** in its entirety with the following:

Slip-Critical Connections. The policy for coating slip-critical contact surfaces is specified in the New York State Steel Construction Manual. All metal to metal, slip-critical contact surfaces shall not be painted unless specified in the Contract Documents and allowed by the New York State Steel Construction Manual

Page 424, Replace the third paragraph of **§572-3.03 G. Painting Schedule** with the following:

If the steel has become dirty between coats, the Contractor shall wash the structure at no additional cost to the State.

Page 425, Replace **§572-4 METHOD OF MEASUREMENT** and **§572-5 BASIS OF PAYMENT** in their entirety with the following:

572-4 METHOD OF MEASUREMENT

572-4.01 Shop Applied – Square Meter. The measurement of this item will include the area requiring surface preparation and painting to the nearest whole square meter.

574-4.02 Shop Applied – Lump Sum. The work under this item will be measured on a lump sum basis, per structure.

572-5 BASIS OF PAYMENT. The unit or lump sum price bid shall include the cost of all labor, materials, and equipment necessary to complete the work.

Progress payments will be made for 80% of total payment quantity upon delivery of shop painted steel to the job site. Shop painted steel will be considered properly painted only when accompanied by the Engineer's or Inspector's written certification. The remaining 20% of payment will be made upon completion of cleaning and field painting all bolt heads, nuts, washers, bolt thread extensions, and damaged areas.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Payment will be made under:

Item No.	Item	Pay Unit
572.01nnnn	Structural Steel Painting: Shop Applied	Square Meter
572.02nnnn	Structural Steel Painting: Shop Applied	Lump Sum

Page 426, Replace the last two sentences of **§573-2.01 Paints** with the following:

All new paint to be applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field painted components of the structure.

Page 426, Replace the first sentence of **§573-2.01 A. Shelf Life** with the following two sentences:

The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinners shall be per manufacturer's recommendations or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken.

Page 426, Replace **§573-2.01 D. Technical Data** in its entirety with the following:

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint component to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 Approved List.

Page 430, Replace the first paragraph of **Section 573-3.03 A. Atmospheric Conditions** with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 5°C and rising. Paint shall not be applied when surface or ambient temperatures are greater than 38°C. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Page 430, Replace the first sentence of the second paragraph of **§573-3.03 A. Atmospheric Conditions** with the following:

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 3°C above the dew point. If manufacturer's requirements are more restrictive then they shall be followed.

Page 430, Replace the second and third sentences of the first paragraph of **§573-3.03 C. Solvents and Thinners** with the following:

The primer shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. Intermediate and finish paints shall not be thinned such that the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 431, Replace the last sentence of the first paragraph of **§573-3.03 F. Paint Film Thickness** with the following two sentences:

Dry film thickness gauges shall be calibrated over a blasted, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable.

Page 431, Add the following sentence at the end of the second paragraph of **§573-3.03 F. Paint Film Thickness**:

At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Page 431, Replace the first sentence of the second paragraph of **§573-3.03 G. Painting Schedule** with the following:

Each area as defined by §573-3.02, B. 7 shall receive an intermediate coat of paint within 72 hours after priming.

Page 432, Replace first two paragraphs of **§574-2.01 Paints** with the following:

574-2.01 Paints. Paints shall meet the requirements of §708-02 *Structural Steel Paints Class 2* and shall appear on the Department's Approved List, 'Structural Steel Paints – Class 2' for localized and overcoat painting, or on the 'Structural Steel Paints – Class 1' Approved List for localized painting only.

All new paint to be applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field painted components of the structure.

Page 432, Replace the first sentence of **§574-2.01 A. Shelf Life** with the following two sentences:

The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinners shall be per manufacturer's recommendations or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken.

Page 432, Replace **§574-2.01 D. Technical Data** in its entirety with the following:

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 or Class 2 Approved List, as applicable.

Page 433, Replace item number 4. of **§574-2.04 Paint Inspection Equipment** with the following:

4. One bound copy of the Steel Structures Painting Council pictorial standards, SSPC-VIS 3, *Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning*.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 433, Replace the entire first paragraph of **§574-3 CONSTRUCTION DETAILS** with the following:
574-3 CONSTRUCTION DETAILS. Overcoating is defined as treating corroded areas by spot cleaning and applying two coats of primer, followed by applying intermediate and topcoats of paint to all prepared steel surfaces, both cleaned and primed previously corroded areas and cleaned existing intact painted surfaces. Localized cleaning and painting is defined by spot cleaning and applying four coats of paint, including two coats of primer, intermediate and topcoat, to spot-cleaned steel only.

Page 434, Add the following sentence to the end of the second paragraph of **§574-3.02 B 2. Steel Cleanliness and Profile:**

The anchor profile shall be measured in accordance with ASTM D4417, Method C.

Page 435, Replace the first sentence of the second paragraph of **§574-3.02 C. Visual and Project Standards** with the following:

The prepared standard shall generally conform to SSPC VIS 3, *Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning* or SSPC VIS 1, *Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning*, as appropriate, and shall be approved by the Engineer before the start of general cleaning work.

Page 436, Replace the first paragraph of **§574-3.04 A. Atmospheric Conditions** with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 5°C and rising. Paint shall not be applied when surface or ambient temperatures are greater than 38°C. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Page 436, Replace the first sentence of the second paragraph of **§574-3.04 A. Atmospheric Conditions** with the following:

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 3°C above the dew point. If the manufacturer's requirements are more restrictive they shall be followed.

Page 436, Replace the second and third sentences of the first paragraph of **§574-3.04 C. Solvents and Thinners** with the following:

The primer, if classified as metallic pigmented, shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. All other coats of paint shall not be thinned such that the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings.

Page 436, Replace the last sentence of the first paragraph of **§574-3.04 E. Paint Film Thickness** with the following two sentences:

Dry film thickness gauges shall be calibrated over a cleaned, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 436, Add the following sentence at the end of the second paragraph of **§574-3.04 E. Paint Film Thickness**:

At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Page 437, Replace the first two sentences of **§574-3.04 F. Painting Schedule** with the following:
F. Painting Schedule. Primer shall be applied as per §574-3.02, B.5 of this specification. The second coat of primer shall be applied within 72 hours of the application of the initial prime coat.

The intermediate coat shall be applied within 72 hours of prime coating of the areas as defined by §574-3.02, B.5. All areas of adherent existing paint to be overcoated shall receive the intermediate coat within 72 hours of that area's cleaning operation.

Page 437, Replace the first sentence of the third paragraph of **§574-3.04 F. Painting Schedule** with the following:

To prevent intercoat adhesion failure, top coat must be applied within the manufacturer's recommended recoat window, or 14 days, whichever is shorter.

Page 437, Replace the first paragraph of **§574-3.05 Painting for Localized Cleaning and Painting** with the following:

574-3.05 Painting for Localized Cleaning and Painting. The paint shall appear on the Department's Structural Steel Paints – Class 1 Approved List, or Structural Steel Paints – Class 2 Approved List and be approved for localized application.

Page 437, Replace the second paragraph of **§574-3.05 Painting for Localized Cleaning and Painting** with the following:

The Contractor shall apply each coat of paint in the order listed on the Department's Approved List.

Page 655, Replace **§657-2.02 Paint for Use On Aluminum Surfaces** with the following:

657-2.02 Paint for Use On Aluminum Surfaces. The portions of aluminum or aluminum alloys that will be in contact with cast or projected concrete shall be painted with at least two coats of a polyamide epoxy recommended by the manufacturer for use over aluminum surfaces to reduce alkali attack. The surface shall be brush-off blast cleaned to SSPC-SP 7 and painted with two or more coats to achieve a total 500 µm DFT coating. Other than that, all other preparation and application procedures recommended by the paint manufacturer shall be followed.

Surfaces not in contact with concrete shall be painted as described in the contract documents with:

708-07 Paint for Aluminum Surfaces

Page 656, Add the following bullet item at the end of **§657-2.05 Paint Inspection Equipment**:

- Profile micrometer with coarse replica tape.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 656, Change the pressure value in the first sentence of the first paragraph of **§657-3.01 A. Weathered Galvanized Surfaces** from 12.5 MPa to 10 MPa.

Page 657, Change the maximum time between blasting and priming in the first and second sentences of the last paragraph of **§657-3.01 B. Newly Galvanized Surfaces** from 12 hours to 1 hour.

Page 657, Replace the first sentence of **§657-3.01 C. Aluminum Surfaces** with the following:
Aluminum surfaces shall be prepared using methods and technologies as described in the section on preparation of aluminum in the latest version of SSPC-SP COM, *Surface Preparation Commentary for Steel and Concrete Substrates*.

Page 657, Replace **§657-3.02 A. Atmospheric Conditions** with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 5°C and rising. Paint shall not be applied when surface or ambient temperatures are greater than 38°C. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 3°C above the dew point. If the manufacturer's requirements are more restrictive then they shall be followed. No paint shall be applied during rain.

Page 657, Replace the second sentence of the first paragraph of **§657-3.02 C. Solvents and Thinners** with the following:

Under no circumstances should the paint be thinned where the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for industrial maintenance coatings.

Page 658, Add the following subsection after **§657-3.02 E. Paint Film Thickness**:

657-3.03 Repair of Damaged Areas. All visible dirt, grease, and other foreign matter shall be removed first by pressure washing and solvent cleaning as per SSPC-SP 1 as needed. Areas exhibiting damaged or deteriorated paint not extending to the metal substrate shall be hand or power tool cleaned as necessary to remove damaged or deteriorated, loosely adhered paint. Loosely adhered paint will lift when scraped with a dull putty knife. All edges of paint surrounding the repair area shall be tightly adherent and feathered. These edges and the surrounding painted surfaces to receive a repair topcoat(s) shall be abraded to provide a suitable anchor profile for the paint. Areas that exhibit damage of the paint system down to the metal substrate shall be cleaned with power tools to SSPC-SP 11, minimizing zinc galvanizing removal, and shall exhibit a suitable anchor profile for the primer paint. All power and blasting tools will be vacuum-sealed units. All surrounding structure that has been previously painted in the shop shall be protected from damage during cleaning operations. Repairs shall be smoothly transitioned into surrounding new paint.

Areas of the structure exhibiting damage not extending down to the metal substrate shall receive a finish coat of paint only. Damage extending to the metal substrate shall receive two coats of paint: primer and finish coat. These coats of paint shall be applied at a dry film thickness as recommended by the paint manufacturer for such repair application.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 797, Replace the single sentence second paragraph of the **MATERIAL REQUIREMENTS** section of §708-01 with the following:

The paint shall be a 3-coat system whose primer is an organic zinc-rich epoxy with pigment primarily consisting of zinc dust.

Page 797, Replace the first sentence of the third paragraph of the **MATERIAL REQUIREMENTS** section of §708-01 with the following:

The paint shall have undergone National Transportation Product Evaluation Program (NTPEP) testing, and meet NEPCOAT Qualified Products List B approval criterion and the requirements of Materials Method NY 6.

Page 797, Add the following sentence to the end of the last paragraph of the **MATERIAL REQUIREMENTS** section of §708-01:

The manufacturer's data sheet, and addendum if applicable, will be posted on the Department's Approved List, Structural Steel Paints, Class 1, as the official reference for New York State.

Page 797, Replace the first two paragraphs of the **MATERIAL REQUIREMENTS** section of §708-02 with the following:

MATERIAL REQUIREMENTS: The system shall be able to be applied in the field over an SSPC SP-10 blasted or an SSPC SP-11 power tool cleaned surface, or a properly prepared, previously painted surface.

The paint shall have undergone National Transportation Product Evaluation Program (NTPEP) testing, and meet NEPCOAT Qualified Products List B approval criterion and the requirements of Materials Method NY 6. The coating manufacturers shall submit NTPEP results, field histories of the coating, Material Safety Data Sheets, and Technical Data Sheets to the Materials Bureau.

Page 798, Add the following sentence to the end of the last paragraph of the **MATERIAL REQUIREMENTS** section of §708-02:

The manufacturer's data sheet, and addendum if applicable, will be posted on the Department's Approved List, Structural Steel Paints, Class 2, as the official reference for New York State.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Make the following changes to the Standard Specifications Construction and Materials of May 1, 2008:

Page 426, Replace the last two sentences of **§572-2.01 Paints** with the following:

All new paint applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field components of the structure.

Page 426, Replace the first sentence of **§572-2.01 A. Shelf Life** with the following two sentences:
The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinner shall be the manufacturer's recommendation or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken.

Page 426, Replace **§572-2.01 D. Data Sheets** in its entirety with the following:

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 Approved List.

Page 428, Add the following to the end of the first paragraph of **§572-3.03 PAINTING:**
Painted steel shall not be placed outside the shop until all paint coats have dried "through / to-handle" or "minimum time to recoat" per paint manufacturer's recommendations, whichever is greater.

Page 428, Replace **§572-3.03 A. Atmospheric Conditions** in its entirety with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 40°F and rising. Paint shall not be applied when surface or ambient temperatures are greater than 100°F. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is dry.

Paint shall not be applied when the relative humidity is more than 85% or the receiving surface is less than 5°F above the dew point temperature. If the manufacturer's data sheets have a more restrictive range then they shall be followed.

Page 428, Replace the second and third sentences of the first paragraph of **§572-3.03 C. Solvents and Thinners** with the following:

The primer shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. Intermediate and finish coats shall not be thinned where the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings.

Page 428, Replace the first sentence of the second paragraph of **§572-3.03 D. Paint Application** with the following:

All steel surfaces that will be in contact with concrete shall not be painted.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 429, Replace the last sentence of the first paragraph of **§572-3.03 F. Paint Film Thickness** with the following two sentences:

Dry film thickness gauges shall be calibrated over a blasted, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable.

Page 429, Add the following sentence at the end of the second paragraph of **§572-3.03 F. Paint Film Thickness**:

At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Page 429, Replace **§572-3.03 F. Paint Film Thickness, Slip-Critical Connections** in its entirety with the following:

Slip-Critical Connections. The policy for coating slip-critical contact surfaces is specified in the New York State Steel Construction Manual. All metal to metal, slip-critical contact surfaces shall not be painted unless specified in the Contract Documents and allowed by the New York State Steel Construction Manual

Page 429, Replace the third paragraph of **§572-3.03 G. Painting Schedule** with the following:

If the steel has become dirty between coats, the Contractor shall wash the structure at no additional cost to the State.

Page 430, Replace **§572-4 METHOD OF MEASUREMENT** and **§572-5 BASIS OF PAYMENT** in their entirety with the following:

572-4 METHOD OF MEASUREMENT

572-4.01 Shop Applied – Square Feet. The measurement of this item will include the area requiring surface preparation and painting to the nearest whole square foot.

574-4.02 Shop Applied – Lump Sum. The work under this item will be measured on a lump sum basis, per structure.

572-5 BASIS OF PAYMENT. The unit or lump sum price bid shall include the cost of all labor, materials, and equipment necessary to complete the work.

Progress payments will be made for 80% of total payment quantity upon delivery of shop painted steel to the job site. Shop painted steel will be considered properly painted only when accompanied by the Engineer's or Inspector's written certification. The remaining 20% of payment will be made upon completion of cleaning and field painting all bolt heads, nuts, washers, bolt thread extensions, and damaged areas.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Payment will be made under:

Item No.	Item	Pay Unit
572.01nnnn	Structural Steel Painting: Shop Applied	Square Foot
572.02nnnn	Structural Steel Painting: Shop Applied	Lump Sum

Page 431, Replace the last two sentences of **§573-2.01 Paints** with the following:

All new paint to be applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field painted components of the structure.

Page 431, Replace the first sentence of **§573-2.01 A. Shelf Life** with the following two sentences:

The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinners shall be per manufacturer's recommendations or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken.

Page 431, Replace **§573-2.01 D. Technical Data** in its entirety with the following:

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint component to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 Approved List.

Page 434, Replace the first paragraph of **§573-3.03 A. Atmospheric Conditions** with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 40°F and rising. Paint shall not be applied when surface or ambient temperatures are greater than 100°F. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Page 435, Replace the first sentence of the second paragraph of **§573-3.03 A. Atmospheric Conditions** with the following:

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 5°F above the dew point. If manufacturer's requirements are more restrictive then they shall be followed.

Page 435, Replace the second and third sentences of the first paragraph of **§573-3.03 C. Solvents and Thinners** with the following:

The primer shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. Intermediate and finish paints shall not be thinned such that the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings.

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Page 436, Replace the last sentence the first paragraph of **§573-3.03 F. Paint Film Thickness** with the following two sentences:

Dry film thickness gauges shall be calibrated over a blasted, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable.

Page 436, Add the following sentence at the end of the second paragraph of **§573-3.03 F. Paint Film Thickness**:

At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Page 436, Replace the first sentence of the second paragraph of **§573-3.03 G. Painting Schedule** with the following:

Each area as defined by §573-3.02, B. 7 shall receive an intermediate coat of paint within 72 hours after priming.

Page 437, Replace first two paragraphs of **§574-2.01 Paints** with the following:

574-2.01 Paints. Paints shall meet the requirements of §708-02 *Structural Steel Paints Class 2* and shall appear on the Department's Approved List, Structural Steel Paints – Class 2 for localized and overcoat painting, or on the Structural Steel Paints – Class 1 Approved List for localized painting only.

All new paint to be applied to a single structure shall be the same paint system produced by the same manufacturer. The Contractor shall assure this to be the case in the event that multiple paint items are specified on a single structure. This includes both shop and field painted components of the structure.

Page 437, Replace the first sentence of **§574-2.01 A. Shelf Life** with the following two sentences:

The shelf life of all components of the coating system shall be a maximum of 12 months from the date of manufacture. The shelf life of factory sealed containers of thinners shall be per manufacturer's recommendations or 3 years from the date of manufacture, whichever is less, and a maximum of 7 months after the factory seal has been broken.

Page 437, Replace **§574-2.01 D. Technical Data** in its entirety with the following:

D. Data Sheets. The Contractor shall supply the Department's representative with the paint manufacturer's material safety data sheets for each paint to be applied. The material safety data sheets shall be delivered to the Department's representative a minimum of five work days prior to beginning of work. The Department's representative and Contractor shall use the product data sheets posted on the Structural Steel Paints Class 1 or Class 2 Approved List, as applicable.

Page 437, Replace item number 4. of **§574-2.04 Paint Inspection Equipment** with the following:

4. One bound copy of the Steel Structures Painting Council pictorial standards, SSPC-VIS 3, *Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning*.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 438, Replace the entire first paragraph of **§574-3 CONSTRUCTION DETAILS** with the following:
574-3 CONSTRUCTION DETAILS. Overcoating is defined as treating corroded areas by spot cleaning and applying two coats of primer, followed by applying intermediate and topcoats of paint to all prepared steel surfaces, both cleaned and primed previously corroded areas and cleaned existing intact painted surfaces. Localized cleaning and painting is defined by spot cleaning and applying four coats of paint, including two coats of primer, intermediate and topcoat, to spot-cleaned steel only.

Page 439, Add the following sentence to the end of the second paragraph of **§574-3.02 B 2. Steel Cleanliness and Profile:**

The anchor profile shall be measured in accordance with ASTM D4417, Method C.

Page 440, Replace the first sentence of the second paragraph of **§574-3.02 C. Visual and Project Standards** with the following:

The prepared standard shall generally conform to SSPC VIS 3, *Guide and Reference Photographs for Steel Surfaces Prepared by Hand and Power Tool Cleaning* or SSPC VIS 1, *Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning*, as appropriate, and shall be approved by the Engineer before the start of general cleaning work.

Page 440, Replace the first paragraph of **§574-3.04 A. Atmospheric Conditions** with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 40°F and rising. Paint shall not be applied when surface or ambient temperatures are greater than 100°F. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Page 440, Replace the first sentence of the second paragraph of **§574-3.04 A. Atmospheric Conditions** with the following:

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 5°F above the dew point. If the manufacturer's requirements are more restrictive they shall be followed.

Page 441, Replace the second and third sentences of the first paragraph of **§574-3.04 C. Solvents and Thinners** with the following:

The primer, if classified as metallic pigmented, shall not be thinned such that the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for metallic pigmented coatings. All other coats of paint shall not be thinned such that the resulting VOC level exceeds the maximum allowable §205.3 limit for industrial maintenance coatings.

Page 441, Replace the last sentence of the first paragraph of **§574-3.04 E. Paint Film Thickness** with the following two sentences:

Dry film thickness gauges shall be calibrated over a cleaned, approved surface on the structure using two NIST traceable shims as described in the "two point calibration adjustment" section of Appendix 2 of SSPC-PA 2. The two shims must be just below and above the recommended thickness range of the prime coat, or the combined thickness of successive coats, as applicable.

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Page 441, Add the following sentence at the end of the second paragraph of **§574-3.04 E. Paint Film Thickness**:

At least one of the spot measurements shall be performed on the bottom face of the bottom flange of stringers, girders or floor beams if these elements are in the work area.

Page 441, Replace the first two sentences of **§574-3.04 F. Painting Schedule** with the following:

F. Painting Schedule. Primer shall be applied as per §574-3.02, B.5 of this specification. The second coat of primer shall be applied within 72 hours of the application of the initial prime coat.

The intermediate coat shall be applied within 72 hours of prime coating of the areas as defined by §574-3.02, B.5. All areas of adherent existing paint to be overcoated shall receive the intermediate coat within 72 hours of that area's cleaning operation.

Page 441, Replace the first sentence of the third paragraph of **§574-3.04 F. Painting Schedule** with the following:

To prevent intercoat adhesion failure, top coat must be applied within the manufacturer's recommended recoat window, or 14 days, whichever is shorter.

Page 442, Replace the first paragraph of **§574-3.05 Painting for Localized Cleaning and Painting** with the following:

574-3.05 Painting for Localized Cleaning and Painting. The paint shall appear on the Department's Structural Steel Paints – Class 1 Approved List, or Structural Steel Paints – Class 2 Approved List and be approved for localized application.

Page 442, Replace the second paragraph of **§574-3.05 Painting for Localized Cleaning and Painting** with the following:

The Contractor shall apply each coat of paint in the order listed on the Department's Approved List.

Page 691, Replace **§657-2.02 Paint for Use On Aluminum Surfaces** with the following:

657-2.02 Paint for Use On Aluminum Surfaces. The portions of aluminum or aluminum alloys that will be in contact with cast or projected concrete shall be painted with at least two coats of a polyamide epoxy recommended by the manufacturer for use over aluminum surfaces to reduce alkali attack. The surface shall be brush-off blast cleaned to SSPC-SP 7 and painted with two or more coats to achieve a total 20 mils DFT coating. Other than that, all other preparation and application procedures recommended by the paint manufacturer shall be followed.

Surfaces not in contact with concrete shall be painted as described in the contract documents with:

708-07 Paint for Aluminum Surfaces

Page 692, Add the following bullet item at the end of **§657-2.05 Paint Inspection Equipment**:

- Profile micrometer with coarse replica tape.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 692, Change the pressure value in the first sentence of the first paragraph of **§657-3.01 A. Weathered Galvanized Surfaces** from 1800 PSI to 1450 PSI.

Page 692, Change the maximum time between blasting and priming in the first and second sentences of the last paragraph of **§657-3.01 B. Newly Galvanized Surfaces** from 12 hours to 1 hour.

Page 692, Replace the first sentence of **§657-3.01 C. Aluminum Surfaces** with the following:
Aluminum surfaces shall be prepared using methods and technologies as described in the section on preparation of aluminum in the latest version of SSPC-SP COM, *Surface Preparation Commentary for Steel and Concrete Substrates*.

Page 693, Replace **§657-3.02 A. Atmospheric Conditions** with the following:

A. Atmospheric Conditions. Paint shall be applied only if surface and ambient temperatures are greater than or equal to 40°F and rising. Paint shall not be applied when surface or ambient temperatures are greater than 100°F. If the temperature range listed on the manufacturer's data sheets is more restrictive, the manufacturer's range shall be used. The use of accelerator additives is prohibited. No paint shall be applied unless the receiving surface is absolutely dry.

Paint shall not be applied when the relative humidity is more than 85% or the surface temperature is less than 5°F above the dew point. If the manufacturer's requirements are more restrictive then they shall be followed. No paint shall be applied during rain.

Page 693, Replace the second sentence of the first paragraph of **§657-3.02 C. Solvents and Thinners** with the following:

Under no circumstances should the paint be thinned where the resulting VOC level exceeds the maximum allowable limit set by 6 NYCRR Part 205, §205.3 for industrial maintenance coatings.

Page 693, Add the following subsection after **§657-3.02 E. Paint Film Thickness**:

657-3.03 Repair of Damaged Areas. All visible dirt, grease, and other foreign matter shall be removed first by pressure washing and solvent cleaning as per SSPC-SP 1 as needed. Areas exhibiting damaged or deteriorated paint not extending to the metal substrate shall be hand or power tool cleaned as necessary to remove damaged or deteriorated, loosely adhered paint. Loosely adhered paint will lift when scraped with a dull putty knife. All edges of paint surrounding the repair area shall be tightly adherent and feathered. These edges and the surrounding painted surfaces to receive a repair topcoat(s) shall be abraded to provide a suitable anchor profile for the paint. Areas that exhibit damage of the paint system down to the metal substrate shall be cleaned with power tools to SSPC-SP 11, minimizing zinc galvanizing removal, and shall exhibit a suitable anchor profile for the primer paint. All power and blasting tools will be vacuum-sealed units. All surrounding structure that has been previously painted in the shop shall be protected from damage during cleaning operations. Repairs shall be smoothly transitioned into surrounding new paint.

Areas of the structure exhibiting damage not extending down to the metal substrate shall receive a finish coat of paint only. Damage extending to the metal substrate shall receive two coats of paint: primer and finish coat. These coats of paint shall be applied at a dry film thickness as recommended by the paint manufacturer for such repair application.

REVISIONS TO STANDARD SPECIFICATIONS 572, 573, 574, 657, 708-01 & 708-02

Page 838, Replace the single sentence second paragraph of the **MATERIAL REQUIREMENTS** section of **§708-01** with the following:

The paint shall be a 3-coat system whose primer is an organic zinc-rich epoxy with pigment primarily consisting of zinc dust.

Page 838, Replace the first sentence of the third paragraph of the **MATERIAL REQUIREMENTS** section of **§708-01** with the following:

The paint shall have undergone National Transportation Product Evaluation Program (NTPEP) testing and meet NEPCOAT Qualified Products List B approval criterion and the requirements of Materials Method NY 6.

Page 838, Add the following sentence to the end of the last paragraph of the **MATERIAL REQUIREMENTS** section of **§708-01**:

The manufacturer's data sheet, and addendum if applicable, will be posted on the Department's Approved List, Structural Steel Paints, Class 1, as the official reference for New York State.

Page 838, Replace the first two paragraphs of the **MATERIAL REQUIREMENTS** section of **§708-02** with the following:

MATERIAL REQUIREMENTS: The system shall be able to be applied in the field over an SSPC SP-10 blasted or an SSPC SP-11 power tool cleaned surface, or a properly prepared, previously painted surface.

The paint shall have undergone National Transportation Product Evaluation Program (NTPEP) testing, and meet NEPCOAT Qualified Products List B approval criterion and the requirements of Materials Method NY 6. The coating manufacturers shall submit NTPEP results, field histories of the coating, Material Safety Data Sheets, and Technical Data Sheets to the Materials Bureau.

Page 839, Add the following sentence to the end of the last paragraph of the **MATERIAL REQUIREMENTS** section of **§708-02**:

The manufacturer's data sheet, and addendum if applicable, will be posted on the Department's Approved List, Structural Steel Paints, Class 2, as the official reference for New York State.