

TO:

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ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: NEW SPECIFICATIONS FOR MAINTENANCE
PAINTING EXISTING BRIDGES

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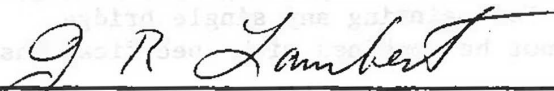
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Attached are new specifications for painting existing bridge structures. These requirements include the following changes:

1. Paint and thinner materials are accepted on the basis of their appearance on the Department's Approved List.
2. A minimum paint material temperature of 40°F is specified for application.
3. Silica sand is prohibited for use in blast cleaning work.

The attached specifications become effective with the letting of 4-18-91.

These items replace the following listed items:

<u>New Item</u>	<u>Replaces Item</u>
18570.8601, Maintenance Cleaning and Epoxy Priming	18570.80, Maintenance Cleaning and Epoxy Priming
18570.8602, Maintenance Cleaning and Epoxy Priming (Spray Prohibited)	18570.81, Maintenance Cleaning and Epoxy Priming (Spray Prohibited)
18570.8603, Maintenance Painting Epoxy Intermediate Coat	18570.82, Maintenance Painting Epoxy Intermediate Coat
18570.8604, Maintenance Painting Epoxy Intermediate Coat (Spray Prohibited)	18570.83, Maintenance Painting Epoxy Intermediate Coat (Spray Prohibited)
18570.8605, Maintenance Painting Urethane Finish Coat	18570.84, Maintenance Painting Urethane Finish Coat
18570.8606, Maintenance Painting Urethane Finish Coat (Spray Prohibited)	18570.85, Maintenance Painting Urethane Finish Coat (Spray Prohibited)

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Subject: NEW SPECIFICATIONS FOR MAINTENANCE PAINTING EXISTING BRIDGES

Designers should note that there are two items for each phase of the bridge painting work; cleaning and priming, application of the intermediate paint, and application of the finish paint. The two items are identical, except that one item allows spray painting and the other disallows spray paint application.

Designers are responsible for determining the permissibility of spray painting. Once a decision has been made, consistency rules. For painting any single bridge, specifications that allow spray painting may not be combined with specifications that prohibit spray painting.

ITEM 18570.8601 MAINTENANCE CLEANING AND EPOXY PRIMING
ITEM 18570.8602 MAINTENANCE CLEANING AND EPOXY PRIMING (SPRAY PROHIBITED)

DESCRIPTION

This work shall consist of cleaning and priming in-service structural steel surfaces where indicated by the Contract documents or where ordered by the Engineer.

MATERIAL

1. Primer and Thinner. Paint and thinner shall be selected from the Department's Approved List, "PAINTS FOR STRUCTURAL STEEL, A. PRIMER PAINT AND THINNERS." No substitutions will be allowed.

All primer and other coats of paint used on any one structure shall be produced by the same manufacturer. Each single paint coat shall be a color different from the others.

2. Abrasive for Blast Cleaning. Abrasive material for blast cleaning shall be selected by the contractor. Silica sand and other types of non-metallic abrasive containing more than 10% free silica, by weight, will not be allowed.

3. Basis of Acceptance.

Acceptance of primer paint and thinner materials will be based on the appearance of the manufacturer's name, and the product name, on the Department's Approved List.

Abrasive material for blast cleaning will be approved by the Engineer.

Only primer and thinner arriving at the work site in new, unopened containers shall be used.

Containers of paint shall be labeled with the manufacturer's name, product name, component part, batch number, date of manufacture and shelf life date. Paint in containers having expired shelf life dates shall be immediately removed from the work site and not used.

Containers of thinner shall be labeled with the manufacturer's name and the product name. If an approved generic thinner is supplied it shall be clearly identified as reagent grade.

CONSTRUCTION DETAILS

The requirements of Standard Specification §570-3.02 shall apply with the following modifications:

1. Manufacturers Instructions. At least 5 working days prior to the start of work the Contractor shall provide the Engineer with one copy of the paint manufacturer's current technical data sheets for the primer furnished. Instructions, suggestions and precautions contained in the data sheets shall be followed to the extent that they do not contradict the provisions of this specification.

ITEM 18570.8601
ITEM 18570.8602

MAINTENANCE CLEANING AND EPOXY PRIMING
MAINTENANCE CLEANING AND EPOXY PRIMING (SPRAY PROHIBITED)

2. Atmospheric Conditions. No work, surface preparation (cleaning) or paint application shall be performed unless all the following conditions are met:

- a. The receiving surface shall be clean and absolutely dry.
- b. The receiving surface temperature and ambient air temperature shall be as recommended by the paint manufacturer, except that in no case shall cleaning or painting work be performed when surface and ambient temperatures are less than 40°F or greater than 100°F.
- c. The paint material temperature shall be as recommended by the paint manufacturer, except that in no case shall paint be applied when the paint material temperature is less than 40°F.
- d. The receiving surface temperature shall be at least 5°F above the dew point.
- e. The relative humidity shall be less than 85%.

In addition paint shall not be applied if atmospheric conditions predicted by the U.S. Weather Bureau or other weather service are predicted to change so as to cause, in the opinion of the Engineer, unsatisfactory results.

3. Mixing. Paint shall be proportioned and thoroughly mixed with mechanical mixers in accordance with the paint manufacturer's recommendations.
4. Thinning. Primer may be thinned only if recommended by the manufacturer, done in strict compliance with the manufacturer's instructions, approved by the Engineer and mixed in the presence of the Engineer.
5. Paint Application. Paint may be applied using brush, roller or spray methods, unless spray painting is prohibited by the Contract Documents.

When spray painting is prohibited paint shall be applied using brushes or rollers only.

6. Film Thickness. Primer shall be applied in sufficient quantity so as to produce a minimum dry film thickness of 4.0 mils.

The dry film thickness shall be determined in accordance with SSPC-PA2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness with Magnetic Gages. Dry film thickness shall be measured by fixed probe magnetic gages. The Contractor shall supply all the equipment required by Standard Specification §740-01 as well as two fixed probe magnetic gages -Positector, or equal as approved by the Director, Materials Bureau. No work shall be done until the required equipment is supplied.

7. Recoating and Overcoating. Areas failing to meet the specified minimum dry film thickness shall be overcoated with the same type of primer to produce at least the total dry film thickness required. Primer applied

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containing unauthorized thinners, primer applied to contaminated surfaces and primer applied contrary to this specification shall result in the recleaning and repriming of the surface. The work of recleaning, repainting or over-coating, if required shall be done by the Contractor to the satisfaction of the Engineer at no additional cost to the State. Primer used for recoating and overcoating shall be tinted to slightly color contrast with the underlying coating.

8. Schedule. Primer shall be applied within the same day as the cleaning operations and before flash rusting occurs to the cleaned surface.
9. Material Storage. Primer in storage shall be protected from damage and maintained between 40 Deg F and 90 Deg F. Primer not used before the expiration date shown on the containers shall be immediately removed from the project site.

METHOD OF MEASUREMENT

Payment shall be made at the lump sum price bid.

BASIS OF PAYMENT

The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work. Progress payments will be made based on the percentage of the structure cleaned and primed in accordance with the requirements of Standard Specification §740-01. The percentage shall be computed as the length of structure cleaned and primed to the total length of structure.

Payment will be made under:

<u>Item No</u>	<u>Item</u>	<u>Pay Unit</u>
18570.8601nn	Maintenance Cleaning and Epoxy Priming	Lump Sum (for each Structure)
18570.8602nn	Maintenance Cleaning and Epoxy Priming (Spray Prohibited)	Lump Sum (for each Structure)

Note: nn denotes serialized pay item. See §101-53.

ITEM 18570.8603 MAINTENANCE PAINTING EPOXY INTERMEDIATE COAT
ITEM 18570.8604 MAINTENANCE PAINTING EPOXY INTERMEDIATE COAT (SPRAY PROHIBITED)

DESCRIPTION

This work shall consist of painting one full coat of intermediate paint to all in-service steel where indicated by the Contract documents and which has been previously cleaned and primed in accordance with Item 18570.8601, or Item 18570.8602.

MATERIAL

1. Paint and Thinner. Intermediate paint and thinner shall be selected from the Department's Approved List, "PAINTS FOR STRUCTURAL STEEL, B. INTERMEDIATE PAINT AND THINNERS." No substitutions will be allowed.

All intermediate and other coats of paint used on any one structure shall be produced by the same manufacturer. Each single paint coat shall be a color different from the others.

2. Basis of Acceptance.

Acceptance of intermediate paint and thinner material will be based on the appearance of the manufacturer's name, and the product name, on the Department's Approved List.

Only intermediate paint and thinner arriving at the work site in new, unopened containers shall be used.

Containers of paint shall be labeled with the manufacturer's name, product name, component part, batch number, date of manufacture and shelf life date. Paint in containers having expired shelf life dates shall be immediately removed from the work site and not used.

Containers of thinner shall be labeled with the manufacturer's name and the product name. If an approved generic thinner is supplied it shall be clearly identified as reagent grade.

CONSTRUCTION DETAILS

The requirements of Standard Specification §570-3.03 shall apply with the following modifications:

1. Manufacturers Instructions. At least 5 working days prior to the start of work, the Contractor shall provide the Engineer with one copy of the paint manufacturer's current technical data sheets for the paint furnished. Instructions, suggestions and precautions contained in the data sheets shall be followed to the extent that they do not contradict the provisions of this specification.
2. Atmospheric Conditions. No painting work shall be performed unless all the following conditions are met:
 - a. The receiving surface shall be clean and absolutely dry.

- b. The receiving surface temperature and ambient air temperature shall be as recommended by the paint manufacturer, except that in no case shall cleaning or painting work be performed when surface and ambient temperatures are less than 40°F or greater than 100°F.
- c. The paint material temperature shall be as recommended by the paint manufacturer, except that in no case shall paint be applied when the paint material temperature is less than 40°F.
- d. The receiving surface temperature shall be at least 5°F above the dew point.
- e. The relative humidity shall be less than 85%.

In addition paint shall not be applied if atmospheric conditions predicted by the U.S. Weather Bureau or other weather service are predicted to change so as to cause, in the opinion of the Engineer, unsatisfactory results.

3. Cleaning. At the time of paint application the receiving surface shall be free of all contaminants such as petroleum products, sand blasting aggregates and other debris generated by the cleaning operations, dirt, dust, bird excrements and moisture. Should an exudate haze form on the receiving surface it shall be washed off with mineral spirits or detergent and water. All cleaning required on the receiving surface to remove these or other contaminants shall be done in accordance with SSPC-SP1 No. 1, Solvent Cleaning.
4. Mixing. Paint shall be proportioned and thoroughly mixed with mechanical mixers in accordance with the paint manufacturer's recommendations.
5. Thinning. Paint may be thinned only if recommended by the manufacturer, done in strict compliance with the manufacturer's instructions, approved by the Engineer and mixed in the presence of the Engineer.
6. Paint Application. Paint may be applied using roller, brush, or spray methods, unless spray painting is prohibited by the Contract Documents.

When spray painting is prohibited paint shall be applied using brushes or rollers only.

7. Film Thickness. Intermediate paint shall be applied in sufficient quantity so as to produce a minimum dry film thickness of 4.0 mils.

The dry film thickness shall be determined in accordance with SSPC-PA2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness with Magnetic Gages. Dry film thickness shall be measured by fixed probe magnetic gages. The Contractor shall supply all the equipment required by Standard Specification §740-01, as well as two fixed probe magnetic gages - Positector, or equal as approved by the Director, Materials Bureau. No work shall be done until the required equipment is supplied.

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8. Recoating and Overcoating. Areas failing to meet the specified minimum dry film thickness shall be overcoated with the same type of intermediate paint to produce at least the total dry film thickness required. Paint applied containing unauthorized thinners, paint applied to contaminated surfaces and paint applied contrary to this specification shall result in the recleaning and repainting the surface. The work of recleaning, repainting or overcoating, if required shall be done by the Contractor to the satisfaction of the Engineer at no additional cost to the State.
9. Schedule. The intermediate paint shall be applied to the receiving surface within 30 days of the application of the previous coating (primer), or within the manufacturers recommended schedule for recoating whichever is less.
10. Material Storage. Paint in storage shall be protected from damage and maintained between 40°F and 90°F. Paint not used before the expiration date shown on the containers shall be immediately removed from the project site.

METHOD OF MEASUREMENT

Payment shall be made at the lump sum price bid.

BASIS OF PAYMENT

The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work. Progress payments will be made based on the percent of the structure painted the intermediate coat in accordance with the requirements of Standard Specifications §740-01. The percentage will be computed as the ratio of the length of the structure to the total length of the structure painted under this item.

Payment will be made under:

<u>Item No.</u>	<u>Item</u>	<u>Pay Unit</u>
18570.8603nn	Maintenance Painting Epoxy Intermediate Coat	Lump Sum (for each Structure)
18570.8604nn	Maintenance Painting Epoxy Intermediate Coat (Spray Prohibited)	Lump Sum (for each Structure)

Note: nn denotes serialized pay item. See §101-53

- ITEM 18570.8605 MAINTENANCE PAINTING URETHANE FINISH COAT
ITEM 18570.8606 MAINTENANCE PAINTING URETHANE FINISH COAT (SPRAY PROHIBITED)

DESCRIPTION

This work shall consist of painting one full coat of finish paint to all in-service steel where indicated by the Contract documents, and which has been previously painted in accordance with Item 18570.8603, or Item 18570.8604.

MATERIAL

1. Paint and Thinner. Finish paint and thinner shall be selected from the Department's Approved List, "PAINTS FOR STRUCTURAL STEEL, C. FINISH PAINT AND THINNERS." No substitutions will be allowed.

All coats of paint used on any one structure shall be produced by the same manufacturer.

The color of the finish paint shall be as specified in the Contract Documents. If no color is specified the Regional Director shall designate the finish color.

2. Basis of Acceptance. Acceptance of finish paint and thinner material will be based on the appearance of the manufacturer's name, and the product name, on the Department's Approved List.

Only finish paint and thinner arriving at the work site in new, unopened containers shall be used.

Containers of paint shall be labeled with the manufacturer's name, product name, component part, batch number, date of manufacture and shelf life date. Paint in containers having expired shelf life dates shall be immediately removed from the work site and not used.

Containers of thinner shall be labeled with the manufacturer's name and the product name. If an approved generic thinner is supplied it shall be clearly identified as reagent grade.

CONSTRUCTION DETAILS

The requirements of Standard Specification Section 570-3.03 shall apply with the following modifications:

1. Manufacturers Instructions. At least 5 working days prior to the start of work the Contractor shall provide the Engineer with one copy of the paint manufacturer's current technical data sheets for the paint furnished. Instructions, suggestions and precautions contained in the data sheets shall be followed to the extent that they do not contradict the provisions of this specification.
2. Atmospheric Conditions. No paint application shall be performed unless all the following conditions are met:
 - a. The receiving surface shall be clean and absolutely dry.

- b. The receiving surface temperature and ambient air temperature shall be as recommended by the paint manufacturer, except that in no case shall painting work be performed when surface and ambient temperatures are less than 40°F or greater than 100°F.
- c. The paint material temperature shall be as recommended by the paint manufacturer, except that in no case shall paint be applied when the paint material temperature is less than 40°F.
- d. The receiving surface temperature shall be at least 5°F above the dew point.
- e. The relative humidity shall be less than 85%.

In addition paint shall not be applied if atmospheric conditions predicted by the U.S. Weather Bureau or other weather service are predicted to change so as to cause, in the opinion of the Engineer, unsatisfactory results.

- 3. Cleaning. At the time of paint application the receiving surface shall be free of all contaminates such as petroleum products, sand blasting aggregates and other debris generated by the cleaning operations, dirt, dust, bird excrements and moisture. Should an exudate haze form on the receiving surface it shall be washed off with mineral spirits or detergent and water. All cleaning required on the receiving surface to remove these or other contaminates shall be done in accordance with SSPC-SP1 No. 1, Solvent Cleaning.
- 4. Mixing. Paint shall be proportioned and thoroughly mixed with mechanical mixers in accordance with the paint manufacturer's recommendations.
- 5. Thinning. Paint may be thinned only if recommended by the manufacturer, done in strict compliance with the manufacturer's instructions, approved by the Engineer and mixed in the presence of the Engineer.
- 6. Paint Application. Paint may be applied using brush, roller or spray methods, unless spray painting is prohibited by the Contract Documents.

When spray painting is prohibited paint shall be applied using brushes or rollers only.

- 7. Film Thickness. Finish paint shall be applied in sufficient quantity so as to produce a minimum dry film thickness of 3.0 mils.

The dry film thickness shall be determined in accordance with SSPC-PA2, Paint Application Specification No. 2 - Measurement of Dry Film Thickness with Magnetic Gages. Dry film thickness shall be measured by fixed probe magnetic gages. The Contractor shall supply all the equipment required by Standard Specification §740-01, as well as two fixed probe magnetic gages - Positector, or equal as approved by the Director, Materials Bureau. No work shall be done until the required equipment is supplied.

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8. Recoating and Overcoating. Areas failing to meet the specified minimum dry film thickness shall be overcoated with the same type of finish paint to produce at least the total dry film thickness required. Paint applied containing unauthorized thinners, paint applied to contaminated surfaces and paint applied contrary to this specification shall result in the recleaning and repainting the surface. The work of recleaning, repainting or overcoating, if required shall be done by the Contractor to the satisfaction of the Engineer at no additional cost to the State.
9. Schedule. The finish paint shall be applied to the receiving surface within 30 days of application of the previous coating or within the manufacturers recoat or topcoat schedule recommendation whichever is less.
10. Material Storage. Paint in storage shall be protected from damage and maintained between 40°F and 90°F. Paint not used before the expiration date shown on the containers shall be immediately removed from the project site.

METHOD OF MEASUREMENT

Payment shall be made at the lump sum price bid.

BASIS OF PAYMENT

The lump sum price bid shall include the cost of all labor, materials and equipment necessary to complete the work. Progress payments will be made based on the percent of the structure painted the finish coat in accordance with the requirements of Standard Specification §740-01. The percentage will be computed as the ratio of the length of the structure to the total length of the structure painted under this item.

Payment will be made under:

<u>Item No.</u>	<u>Item</u>	<u>Pay Unit</u>
18570.8605nn	Maintenance Painting Urethane Finish Coat	Lump Sum (for each Structure)
18570.8606nn	Maintenance Painting Urethane Finish Coat (Spray Prohibited)	Lump Sum (for each Structure)

Note: nn denotes serialized pay item. See §101-53.