

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1            Section 017411 - Cleaning.

**1.2                PRICE AND PAYMENT PROCEDURES**

- .1            Painting is paid according to section 012900 « Payment Procedures » without adding to due to the shape of rivets, bolts, washers and nuts surfaces.

**1.3                REFERENCES**

- .1            Paints and organic and maintenance Paint system must comply with standards 10103 and 10104 of the Ministry of Transportation of Quebec.
- .2            Federal Standard (FS)
  - .1            Color : according to U.S. FED STD-59SB «Color use in Government Procurement ».
- .3            The Society for Protective coating (SSPC)
  - .1            Surface preparation specifications (Initial surface conditions).
  - .2            SSPC – SP6/NACE n°3 « Commercial Blast cleaning ».
  - .3            SSPC – SP3, « Power Tool cleaning ».
  - .4            SSPC – SP10/NACE n° 2 « Near White Blast cleaning ».
  - .5            SSPC Good Painting, volume 1, 4<sup>th</sup> Edition.
  - .6            SSPC – Vis-1-02 « Guide and Reference Photography for steel surfaces prepared by dry abrasive blast cleaning ».

**1.4                ACTION AND INFORMATIONAL SUBMITTALS**

- .1            The contractor shall submit to the Departmental representative a temporary structure Plan describing the details of design and construction of containment enclosure and residues recovery device for residues of surface preparation, metallization or painting. The study of this plan by the Departmental representative is limited to the verification of the load imposed to the structure of the bridge by containment and not on the design of scaffolding and platforms constituting the containment enclosure. After the construction of the containment enclosure and after inspection by an Engineer member of « Ordre des ingénieurs du Québec », the contractor shall submit to the Departmental representative a written notice signed by the Engineer indicating that the enclosure is built according to submitted plan. This notice must be provided whenever the submitted enclosure is moved or changed. The notice shall also indicate the date and time of the inspection.
- .2            Product Data
  - .1            Submit manufacturer's instructions, printed product literature and data sheets for painting exterior metal surface and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2            Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.

- .3 Samples
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.
  - .3 Upon request, the Departmental representative will furnish qualified products list of paints.
  - .4 Paint products must be chosen from the approved list of the Ministry of Transportation of Quebec and approved by the Departmental representative.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .5 Test Reports
  - .1 Submit test reports showing compliance with specified performance characteristics and physical properties and in accordance with Section 01 45 00 - Quality Control.

## **1.5 QUALITY ASSURANCE**

- .1 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements of the Ministry of Transportation of Quebec.

## **1.6 DELIVERY, STORAGE AND HANDLING**

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labeled with manufacturer's name and address.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint
  - .1 The Paints system must be selected from those on the approval list « Organic Paints system » on the Internet list of the Ministry Transportation of Quebec. The paint must be of the same color as the existing.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for painting exterior metal surfaces installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of the Departmental representative.
  - .2 Steel surfaces to be repaired must be identified before work in the presence of the Departmental representative.
  - .3 According to the results of laboratory examination of Paint sample taken from the structural steel of the bridge by Parks Canada, the lead concentration is less

than minimum value of soil quality criteria « A » and is not considered contaminated.

### 3.2 PREPARATION

- .1 Remove existing loose and rusted paint from exterior metal surfaces.
- .2 Metal surfaces to be repainted
  - .1 Clean surfaces by removing loose, cracked, brittle or non-adherent paint, rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with following.
    - .1 Commercial blast cleaning: To SSPC-SP6.
- .3 Compressed air to be free of water and oil before reaching nozzle.
- .4 Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes, by blowing with clean dry compressed air, or by vacuum cleaning.
- .5 Apply paint after prepared surfaces have been accepted by the Departmental representative.
- .6 Prior to starting paint application ensure degree of cleanliness of surfaces is to SSPC-Vis 1.
  - .1 Apply primer, paint, or pretreatment after surface has been cleaned and before deterioration of surface occurs.
  - .2 Clean surfaces again if rusting occurs after completion of surface preparation.
- .7 Mixing paint
  - .1 Do not dilute or thin paint for brush application.
  - .2 Mix ingredients in container before and during use and ensure breaking up of lumps, complete dispersion of settled pigment, and uniform composition.
  - .3 Do not mix or keep paint in suspension by means of air bubbling through paint.
  - .4 Thin paint for spraying according to manufacturer's written instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to the Departmental representative.
- .8 Number of paint coats: 3 in accordance with the standard Ministry of Transportation of Quebec 10103 and 10104.

### 3.3 APPLICATION

- .1 Manufacturer's Instructions: comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, data sheets and standards Ministry of Transportation of Quebec 10103 and 10104.
- .2 Apply paint by spraying, brushing, or combination of both. Use sheepskins or daubers when no other method is practical in places of difficult access.
- .3 Use dipping or roller coating method of application when specifically authorized by the Departmental representative in writing.

- .4 Caulk open seams at contact surfaces of built up members with material approved by the Departmental representative, before second undercoat of primer is applied.
- .5 Where surface to be painted is not under cover, do not apply paint when :
  - .1 Air temperature is below 5 degrees C or when temperature is expected to drop to 0 degrees C before paint has dried.
  - .2 Temperature of surface is over 50 degrees C unless paint is specifically formulated for application at high temperatures.
  - .3 Fog or mist occur at site; it is raining or snowing; there is danger of rain or snow; relative humidity is above 85%.
  - .4 Surface to be painted is wet, damp or frosted.
  - .5 Previous coat is not dry.
- .6 Supply cover when paint must be applied in damp or cold weather. Supply, shelter, or heat surface and surrounding air to comply with temperature and humidity conditions specified. Protect until paint is dry or until weather conditions are suitable.
- .7 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.
- .8 Apply each coat of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .9 Brush application
  - .1 Work paint into cracks, crevices and corners and paint surfaces not accessible to brushes by spray, daubers or sheepskins.
  - .2 Brush out runs and sags.
  - .3 Remove runs, sags and brush marks from finished work and repaint.
- .10 Spray application
  - .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
  - .2 Provide traps or separators to remove oil and water from compressed air and drain periodically during operations.
  - .3 Keep paint ingredients properly mixed in spray pots or containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
  - .4 Apply paint in uniform layer, with overlapping at edges of spray pattern.
  - .5 Brush out immediately runs and sags.
  - .6 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray. In areas not accessible to spray gun, use brushes, daubers or sheepskins.
  - .7 Remove runs, sags and brush marks from finished work and repaint.
- .11 Field painting
  - .1 Apply final coat of paint after concrete work is completed or as directed by the Departmental representative. If paint is damaged, clean and repaint damaged area. Remove concrete spatter and droppings before paint is applied.

- .2 Where painting does not meet with requirements of specifications, and when so directed by the Departmental representative remove defective paint, thoroughly clean affected surfaces and repaint in accordance with these specifications.

### **3.4 FIELD QUALITY CONTROL**

- .1 Site Tests, Inspections.
  - .1 Upon completion of the painting procedures test for dry film reading and evaluate the results as per SSPC-PA 2.

### **3.5 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

### **3.6 PROTECTION**

- .1 Protect painted surfaces from damage during construction.
- .2 Protection of surfaces
  - .1 Protect surfaces not to receive paint.
  - .2 Prevent contamination of cleaned surfaces by salts, acids, alkalis, corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats of paint. Remove contaminants from surface and apply paint immediately.
  - .3 Protect cleaned and freshly painted surfaces from dust to approval of the Departmental representative.
- .3 Repair damage to adjacent materials caused by painting exterior metal surface application installation.

### **3.7 ENVIRONMENTAL PROTECTION MEASURES**

- .1 Existing steel surfaces are coated with a Paint system not containing lead. Residues generated by surfaces preparation should be considered solid waste.
- .2 Dust must be contained by an enclosure within a maximum radius of 10 meters form the location of the work performed by abrasive projection.
- .3 Liquid waste generated by the operations of surface preparation should be characterized. Measures shall be taken to manage the waste generated during Painting operations.
- .4 Residues must be collected and discharged into the storm sewer system or in the watercourse provided that the Contractor provide the results of analyzes to the Departmental representative and the later agrees.

**END OF SECTION**