

Parks Canada Agency
Refection of Gauron and Lafleur Bridges on Lachine
Canal

Project N° CLAC-1524
Addendum n° 03

THIS ADDENDUM COMPLETES, MODIFIES OR ELIMINATES CERTAIN ELEMENTS OF THE TENDER DOCUMENTS, WHICH THE ADDENDUM REFERS TO. IT IS AN INTEGRAL PART OF THE TENDER DOCUMENTS.

MODIFICATIONS ON PLANS AND SPECIFICATIONS

The current precisions are provided, following questions received from contractors during the site visit, and other written questions received.

1. SPECIFICATIONS

1.1 Replacement of section 09 91 13.23 Exterior painting of structural steel :

The section **09 91 13.23 Exterior painting of structural steel revision 00** is cancelled and replace by the section **09 91 13.23 Exterior painting of structural steel revision 01**. See the section appended to this addendum

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 05 12 33 – *Structural steel for bridges*

1.2 PRICE AND PAYMENT PROCEDURES

- .1 Temporary accesses required to perform onsite cleaning and painting of steel elements on Gauron Bridge (7) are covered by Submission slip items;
- .2 Containment system required to perform onsite cleaning and painting of steel elements on Gauron Bridge (7) are covered by Submission slip items;
- .3 Cleaning and painting of steel surfaces of Gauron Bridge (7) superstructure and of new steel elements (except bolts, steel faced curb), are covered by Submission slip items;
- .4 Costs of heating containment enclosures for painting in cold weather are covered by specific payment items in the Submission slip.

1.3 REFERENCE STANDARDS

- .1 The Master Painters Institute (MPI)
 - .1 Exterior Structural Steel and Metal Fabrications.
 - .1 EXT 5.1D, Alkyd.
 - .2 EXT 5.1G, Polyurethane, Pigmented (over epoxy zinc rich primer and high build epoxy).
 - .2 Federal Standard (FS)
 - .1 FED-STD-595B, latest edition, *Colours Used in Government Procurement*.
 - .3 The Society for Protective Coatings (SSPC)
 - .1 SSPC-SP 1, latest edition, *Solvent Cleaning*.
 - .2 SSPC-SP 2, latest edition, *Hand Tool Cleaning*.
 - .3 SSPC-SP 3, latest edition, *Power Tool Cleaning*.
 - .4 SSPC-SP 6/NACE No. 3, latest edition, *Commercial Blast Cleaning*.
 - .5 SSPC-SP 7/NACE No. 4, latest edition, *Brush-off Blast Cleaning*.
 - .6 SSPC-Vis-1, latest edition, *Visual Standard for Abrasive Blast Cleaned Steel* (Standard Reference Photographs) Editorial Changes September 1, 2000 (Steel Structures Painting Manual, Chapter 2 - Surface Preparation Specs.).
 - .7 SSPC-SP 10/NACE No. 2, latest edition, *Near White Blast Cleaning*.
 - .8 SSPC-PA 2, latest edition, *Measurement of Dry Coat Thickness with Magnetic Gauges*.
 - .9 SSPC *Good Painting Practices*, Volume 1, 4th Edition.
 - .4 Ministère des Transports du Québec :

- .1 Cahier des charges et devis généraux – *Infrastructures routières – Construction et réparation*
- .2 Ouvrages routiers, Normes, Tome VII – Matériaux, norme 10104, *Systèmes de peintures pour structures d'acier*.
- .3 Direction des structures, *Guide peinturage des charpentes métalliques*.

1.4 PAINT ANALYSIS

- .1 Parks Canada Agency, owner of bridges Gauron (7) and Lafleur (7A) has carried out analyses of existing paint on these structures to determine lead content.
- .2 These analyses show lead content in paint varies between 0.72% et 1.88%.
- .3 The analysis report is attached to this section of the specifications in Appendix 1.
- .4 Existing steel surfaces are coated with a paint system containing lead.
- .5 Characterize liquid waste generated by surface preparation operations.
- .6 Consider solid residues generated by surface preparation work as hazardous materials.
- .7 Provide measures to manage waste generated during painting operations.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide in accordance with Section 01 33 00 - *Submittal Procedures*.
- .2 Product Data:
 - .1 Provide manufacturer s instructions, printed product literature and data sheets for painting exterior metal surfaces and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit two (2) copies of WHMIS SDS in accordance with Section 01 35 43 - *Environmental Procedures* and 01 35 29.06 - *Health and Safety Requirements*.
- .3 Samples:
 - .1 Submit samples for review and acceptance of each unit.
 - .2 Submit for review and acceptance colour samples of paint to be used on bridges to the Government Representative, at least fifteen (15) days before beginning of works. The paint colour samples will allow Parks Canada Agency representatives to choose which paint colour will be used to protect Bridge N° 7 (Gauron).
 - .3 Paint colour samples shall be similar to actual colour of paint covering steel structure of bridges.
 - .4 Incorporate approved colour sample into the topcoat colour of the chosen paint system.
 - .5 Choose paint systems as described in Part 2 of this section of the specifications.
 - .6 Enable Government Representative to take two (2) two (2) liter samples of each type of paint product delivered to the site; one (1) sample must be taken from the original containers and the other from the painters' cans.

- .4 Certificates:
 - .1 Submit documents signed by the manufacturer certifying that the products, materials and equipment comply with the physical characteristics and performance criteria.
 - .2 Ensure that certificates include the following information for each production lot:
 - .1 Name of manufacturer.
 - .2 Name of paint.
 - .3 Production lot number. A lot number corresponds to a batch number. For zinc powder, the production lot corresponds to the manufacturer's code.
- .5 Test Reports:
 - .1 Provide test reports showing compliance with specified performance characteristics and physical properties and in accordance with Section 01 45 00 - *Quality Control*.
 - .2 Ensure test reports include the following information:
 - .1 Title and date of the report.
 - .2 Non-volatile content (% by mass) according to ASTM D2369, *Standard Test Method for Volatile Content of Coating*.
 - .3 Pigment content (% by mass) according to ASTM D2371, *Standard Test Method for Pigment Content of Solvent Reducible Paints*.
 - .4 Density (kg/l) according to ASTM D1475, *Standard Test Method for Density of Liquid Coating, Inks and Related Products*.
 - .5 Consistency (K.U.) according to ASTM D572, *Standard Test Method for Consistency of Paints Measuring Krebs Units (KU) Viscosity Using a Stormer Type Viscometer*.
 - .3 Verify test results against approved values in paint systems product approval lists. A tolerance is associated with each value.
 - .4 If additional verification is required, provide Government Representative with infrared spectra of paint components according to ASTM D2621, *Standard Test Method for Infrared Identification of Vehicle Solids From Solvent Reducible Paints*.
 - .5 Submit management plan for construction waste in compliance with Section 01 74 19, *Waste Management and Disposal*.

1.6 QUALITY ASSURANCE

- .1 Certificates: Submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .2 Government Representative performs an acceptance inspection on paints. Sampling method:
 - .1 For single-component paints and thinners, two (2) samples of one (1) litre each.
 - .2 For two-component paints, two (2) samples of each component, unmixed and taken in proportions recommended by the manufacturer.

- .3 For paint systems consisting of moisture-curing polyurethane resin paints, for each batch the manufacturer submits to the Government Representative two (2) one (1) litre samples of each paint and thinner in the original unopened containers.
- .4 Place samples in hermetically sealed one (1) liter containers of high-density polyethylene or metal with enamelled interior.

1.7 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 – *Common Product Requirements* and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Materials and materials shall be stored in a container heated to the temperature recommended by the supplier, but not less than 10 ° C.
- .4 Packaging waste management: recover pallets, crates, protective padding, paint and thinner containers and other packaging waste for recycling/reuse following the guidelines of the waste management plan in accordance with Section, 01 74 19 – *Waste Management and Disposal*.

Part 2 Products

2.1 PAINT MATERIALS

- .1 New steel: apply a high-performance paint system complying with the MTQ Standard 10104.
- .2 Existing steel to be cleaned and repainted: apply maintenance paint system in accordance with MTQ Standard 10104.
- .3 Paint system is to be chosen from among those included in the « Systèmes de peintures à haute performance » et « Systèmes de peintures d'entretien » product approval lists found on the Ministère des Transport du Québec (MTQ) Internet site.
- .4 Consider that the topcoat will be the same colour as the paint sample approved by PCA Project Manager and Government Representative.

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 Government Representative.
 - .2 Carry out tests to determine existence of lead base paint on existing exterior metal surfaces.

- .3 See analysis reports for existing paint attached in Appendix 1 of this section of the specifications.
- .4 Take all necessary measures in compliance with Section 02 83 12 - *Lead Base Paint Abatement – Maximum Precautions* and the federal, provincial and municipal regulations in effect in the territory of the City of Montreal for removal, recovery of existing paint removal materials and disposal of paint waste based on the results of the chemical analysis.
- .5 Begin painting only after removal, recovery and disposal of existing paint and following written approval from the Government Representative.

3.2 PREPARATION

- .1 Prior to repairing and / or replacing steel structural elements and inspection, remove existing paint, rust or non-adherent corrosion particles from metal surfaces according to the indications mentioned below.
- .2 New metal surfaces (in shop):
 - .1 Clean surfaces of new metal to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and foreign substances in accordance with the following:
 - .1 Near White Blast Cleaning: to SSPC-SP 10/NACE No. 2.
 - .2 Use dry abrasive blasting, without crystalline silica, to strip steel surfaces in accordance with SSPC-SP 10.
 - .3 Assess rust grades on unpainted steel surfaces and preparation grades following abrasive blasting of steel surfaces corresponding to the rust grades shown in photographs presented in SSPC-VIS 1-02, *Guide and Reference Photographs for Steel Surfaces Prepared by Dry Abrasive Blast Cleaning*. Use these photographs as examples only to complement written descriptions of preparation grades, which are the only specifications to follow.
 - .4 Strip surfaces inaccessible to dry abrasive blasting to obtain the minimum preparation grade in SSPC-SP 11, - *Power Tool Cleaning to Bare Metal*.
- .3 Metal surfaces to be repainted (on site):
 - .1 Work areas for cleaning and painting existing steel surfaces include:
 - .1 All surfaces of existing steel elements composing the superstructure, including all main trusses, floor beams, stringers, bracings, guardrails, assemblies and other;
 - .2 All surfaces of existing steel elements composing the counterweight's superstructure including all main trusses, beams, stringers, bracings, assemblies and other.

.2 Execution:

- .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-SP 6/NACE No. 3.
- .2 The minimum degree of preparation of the steel surfaces depends on the chosen paint system.
- .3 Commercial blast clean rusted and bare metal surfaces where existing paint have failed.
- .4 Scrape edges of old paint back to sound material where remaining paint is thick and sound, feather exposed edges.
- .5 Compressed air must be free of water and oil before exiting the nozzle.
- .6 Strip existing surfaces to remove most of the chloride on the surface to be painted.
- .7 Perform cleaning using water pressurized to minimum 35 MPa with a rotating nozzle held perpendicular to the surface at approx. 100 mm from the surface. Minimum preparation grade to WJ-4, SSPC-SP12, *Surface Preparation and Cleaning of Steel and Other Hard Materials*.
- .8 Smooth down edges of remaining paint over a minimum distance of 50 mm.
- .9 Finish surface preparation with hand tools if necessary.
- .10 Firmly adherent paint and rust is that which cannot be removed by scraping the surface with a blunt putty knife.
- .11 Before painting, ensure that chloride content, following preparation, is below 7 ug/cm² (grade NV-2, SSPC-SP 12).
- .12 Use quantitative testing to determine chloride quantities on surfaces with Chlor Test type sleeve or equivalent approved by Government Representative.
- .13 If chloride content exceeds 7 ug/cm², clean surfaces using « Chlor-Rid » type extraction agent or equivalent approved by Government Representative.
- .14 Use water in accordance with the following Table:

Parameter	Maximum concentration in water (mg/l)
Chloride	500
Sulphate (SO ₄)	3,000
Alkali (Na ₂ O + 0.658K ₂ O)	60
Total solids	50,000
pH	≥ 6
- .15 Blast joints and assemblies with compressed air to remove water or residual moisture before painting. For compressed air, use equipment fitted with a filter to trap oil; demonstrate filter effectiveness before using equipment.

- .16 Remove dust and other dirt from surfaces to be painted following stripping.
- .17 Remove from exterior metal surfaces any loose particles of paint, rust or corrosion.
- .18 Following stripping, remove dust and other dirt from floors, walls and joints of containment enclosures with compressed air or vacuum cleaner.
- .19 Do not apply paint before prepared surfaces have been inspected and approved by Government Representative
- .20 Before painting, ensure that the grade of surface cleanliness complies with SSPC-VIS 1.
- .21 Apply primer, paint or pre-treatment product after surface has been cleaned but before it begins to deteriorate.
- .22 Clean surfaces again if rust appears after preparation.
- .3 Mixing paint:
 - .1 Refer to the recommendations of the manufacturer of the chosen paint system.
 - .2 Do not dilute or thin paint for brush application.
 - .3 Mix ingredients in container before and during use and ensure breaking up of lumps, complete dispersion of settled pigment, and uniform composition.
 - .4 Do not mix or keep paint in suspension by means of air bubbling through paint.
 - .5 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 Government Representative.
- .4 Painting new metal surfaces
 - .1 Apply each shop coat of paint so that each coat produces a dry film in accordance with minimum thickness specified by the manufacturer during the product approval process.

3.3 APPLICATION

- .1 Manufacturer's Instructions:
 - .1 Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.

- .2 Application times for first coats:
 - .1 Apply, over entire clean surface, a first coat of paint as soon as possible after preparation and before onset of surface rust, do not exceed eight (8) hours for zinc paint systems or high performance paint systems, respectively approved in accordance with MTQ Standard 10104 (Volume VII), or twenty-four 24 hours for organic paint systems or maintenance systems, respectively approved in accordance with MTQ Standard 10104 (Volume VII).
- .3 Application times for topcoat:
 - .1 Apply topcoat in accordance with manufacturer's specifications in data sheets, do not exceed seven-day maximum following application of first coat.
- .4 Before applying first two coats of paint system, use a brush to completely coat rivets, bolts, nuts, welds, assembly joints, corners and straight edges, to the satisfaction of Government Representative.
- .5 Spray paint each coat.
- .6 Stir paint during application when specified in manufacturer's data sheets.
- .7 Immediately brush out runs and other imperfections.
- .8 Where paint cannot be adequately applied with a spray gun, use a brush. Use daubers or sheepskins for difficult-to-reach areas.
- .9 Use dipping or roller coating method of application when specifically authorized by the Government Representative in writing.
- .10 Paint system application conditions:
 - .1 Apply paint to surfaces free of moisture and dust.
 - .2 Apply paint under the following conditions:
 - .1 Air and surface to be painted temperature is above 5°C.
 - .2 Temperature of surface to be painted is at least 3°C above dew point.
 - .3 Previous coat is dry.
- .11 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.
- .12 Remove paint from areas which have been exposed to freezing, excess humidity, rain, snow or condensation. Prepare surface again and repaint.
- .13 Apply each coat of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .14 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.
- .15 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 collectors or separators to remove oil and water from compressed air and drain periodically during operations.
 - .3 Keep paint ingredients properly mixed in spray tank 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.
- .16 Shop painting:
- .1 Do shop painting after fabrication and before damage to surface occurs from weather or other exposure.
 - .2 Spray only priming paint on contact surfaces of bolted joints, friction type, assembled on site. Avoid brushing over these surfaces after spraying.
 - .3 Do not paint metal surfaces which are to be embedded in concrete.
 - .4 Paint metal surfaces to be in contact with wood with either full paint coats specified or three (3) shop coats of specified primer.
 - .5 Do not paint metal within 50 mm of edge to be welded. Give unprotected steel one coat of approved primer after shop fabrication is completed.
 - .6 Remove weld spatter before painting. Remove weld slag and flux by methods as specified in paragraph 3.2.3 Metal Surfaces to be Repainted.
 - .7 Protect machine finished or similar surfaces that are not to be painted but that do require protection, with coating of rust inhibitive petroleum, molybdenum disulphide, or other coating approved by the Government Representative.
 - .8 Copy previous erection marks and weight marks on areas that have been shop painted.
- .17 Field painting:
- .1 Paint steel structures as soon as possible after installation.
 - .2 The contact surfaces of parts to be assembled by bolting must not be painted except for a distance of 5 mm around the edge of one of the parts to be assembled so that all visible steel surfaces of the assembly are coated. after assembly.
 - .3 Bolts connecting steel elements painted in the factory must be painted on site after being degreased; the paint system and the color of the finishing coat must be identical to those used at the factory for the parts to be assembled. However, a zinc paint and organic binder should be used if a zinc paint and inorganic binder is provided as the first coat. The first two layers of the paint system must be brushed.
 - .4 Touch up metal which has been shop coated with same type of paint and to same thickness as shop coat. This touch-up to include cleaning and painting of field

- connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas.
- .5 Field paint surfaces (other than joint contact surfaces) which are accessible before erection, but which are not to be accessible after erection.
 - .6 Apply topcoat of paint after concrete work is completed or as directed by the Government Representative. If concreting or other operations damage paint, clean and repaint damaged area. Remove concrete spatter and droppings before paint is applied.
 - .7 Where painting does not meet with requirements of specifications, and when so directed by the Government Representative, remove defective paint, thoroughly clean affected surfaces and repaint in accordance with these specifications.
- .18 Painting in cold weather:
- .1 Heat containment enclosures to minimum temperatures specified in this section of the specifications for ambient air and metal surfaces to be painted.
 - .2 Extend heating period during curing period in accordance with manufacturer's written instructions.
 - .3 For reimbursement of heating costs see Section 01 29 00 – *Payment*.
- .19 Handling painted metal components:
- .1 Handle painted metal after paint has dried, or when necessary for handling for painting or stacking for drying.
 - .2 Scrape off and touch up paint which is damaged in handling, with same number of coats and kinds of paint as were previously applied to metal.

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 00 - *Cleaning*.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - *Cleaning*.
- .3 Waste Management: separate waste materials for reuse/ recycling in accordance with Section 01 74 19 - *Waste Management and Disposal*.
 - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

- .1 Protect painted surfaces from damage during construction.
- .2 Protection surfaces not to receive paint.

- .1 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.
- .2 Protect cleaned and freshly painted surfaces from dust to approval of the Government Representative.
- .3 Repair damage to adjacent materials caused by painting exterior metal surface application installation.

Part 4 Galvanization

4.1 SURFACES TO BE TREATED

- .1 Hardware must be galvanized.
- .2 Use hot dip galvanization for steel elements.

4.2 PRICE AND PAYMENT PROCEDURES

- .1 No payment item in Submission Slip for galvanizing hardware. Include price for galvanizing in *Structural Steel for Bridge* payment item.

4.3 QUALITY ASSURANCE

- .1 Certification of compliance
 - .1 For each delivery of galvanized steel elements, provide the Government Representative with a certificate of compliance including the following information:
 - .1 Name of galvanization company
 - .2 Date and location of galvanization
 - .3 Coating thickness
 - .4 Coating adherence
 - .5 Coating quality
 - .2 Acceptance inspection
 - .1 Parks Canada Agency acceptance inspection involves testing thickness, adhesion and quality of the coating in accordance with ASTM A123/A123M, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - .3 Implementation
 - .1 Preparation of surfaces
 - .1 Ensure that steel surfaces are clean and free of paint, grease, rust, etc.
 - .2 Use appropriate methods to remove loose mill scale, welding slag and thick deposits of paint and rust.
 - .3 Perform final cleaning by immersion of steel pieces in a bath of dilute sulfuric or hydrochloric acid.

- .4 Following final cleaning, immerse steel parts in an aqueous solution of zinc chloride and ammonium.
- .2 Galvanization process
 - .1 Perform galvanization in accordance with ASTM A123/A123M, *Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products*.
 - .2 Apply minimum galvanization thickness of 87 µm.
 - .3 Ensure galvanized steel parts supplied and installed are free of white rust.
- .3 Protection of galvanized components
 - .1 Protect galvanized components from damage during handling and storage.
 - .2 Protect components that come into contact with lifting equipment, such as cables and chains.
 - .3 Store galvanized components so that air circulates between components, water does not accumulate and runs off and there is no metal-to-metal contact of galvanized parts.
- .4 Repairs following galvanization
 - .1 Repair surfaces damaged of ten (10) cm² or less using a brush to apply two (2) coats of a zinc-rich coating in accordance with CAN/CGSB 1.181, *Ready Mixed Organic Zinc-Rich coating*.
 - .1 Clean damaged surfaces before treatment in accordance with SSPC-SP 5/NACE No. 1, *Power Tool Cleaning to Bare Metal*.
 - .2 Ensure minimum dry film thickness of 130 µm.
 - .2 Re-galvanize surfaces damaged over an area greater than ten (10) cm².
 - .1 Clean surfaces to be repaired in accordance with SSPC-SP 5/NACE No. 1, *White Metal Blast Cleaning*.

END OF SECTION

APPENDIX 1

Paint analysis of the Gauron (7) and Lafleur (7A) bridges



RAPPORT D'INTERVENTION

Dossier n° :	010-P-0002065-0-00-100-02-MC-0001-00	Date d'intervention :	Le 25 mars 2013
Client/Entrepreneur :	Agence Parcs Canada Unité de gestion de l'Ouest du Québec a/s M. René Bernard, ing. (rene.bernard@pc.gc.ca)	Lieu d'intervention :	Ponts 7 et 7A Ville Lasalle (Montréal)
Nom du projet :	Ponts Lafleur et Gauron, Ville Lasalle Prélèvement de peinture Analyse de la teneur en plomb		
Type d'intervention :	<input checked="" type="checkbox"/> validation <input type="checkbox"/> relance <input type="checkbox"/> rencontre <input type="checkbox"/> autres	Interlocuteur :	
<i>autres – spécifiez :</i>		Cellulaire :	

RÉSUMÉ : PRÉLÈVEMENT D'ÉCHANTILLONS DE PEINTURE SUR LA STRUCTURE DES PONTS LAFLEUR ET GAURON DANS L'ARRONDISSEMENT VILLE LASALLE À MONTRÉAL

Le 25 mars 2013, nous sommes intervenus aux ponts Lafleur et Gauron, dans l'arrondissement Ville Lasalle à Montréal, pour prélever des échantillons de peinture sur la structure d'acier dans le but de caractériser la teneur en plomb de la peinture.

Notre mandat consistait à prélever des échantillons de peinture pour vérifier si du plomb était présent dans les éléments de la charpente métallique et de déterminer si ces éléments doivent faire l'objet d'un traitement particulier lors du démantèlement et de la mise au rebut.



Ponts Lafleur et Gauron sur les avenues St-Pierre et Dollard



RAPPORT D'INTERVENTION

Méthode et emplacement des échantillons prélevés

Afin d'obtenir une vue d'ensemble de la peinture, nous avons prélevé nos échantillons à trois emplacements différents sur chacun des ponts. Un échantillon par pont a été prélevé. Chaque échantillon représente donc le cumulatif de trois emplacements différents sur chacun des ponts.

En somme, deux échantillons ont été prélevés :

1. Échantillon du pont ave. St-Pierre/ave. Dollard direction sud;
2. Échantillon du pont ave. St-Pierre/ave. Dollard direction nord

La méthode utilisée pour les prélèvements est la suivante :

Au décapant en pâte pour peinture de marque Circa 1850

Échantillonnage par voix humide.

Les échantillons ont été prélevés à partir de différents éléments de la charpente métallique, c'est-à-dire les colonnes, les diagonales et les plaques de renfort (voir photos).



Échantillon avant prélèvement (pont ave. St-Pierre/ave. Dollard direction sud) pris depuis les plaques de renfort



Échantillon avant prélèvement (pont ave. St-Pierre/ave. Dollard direction nord) pris depuis les plaques de renfort et une colonne



RAPPORT D'INTERVENTION

Aspect visuel de la peinture sur la structure d'acier

Nous avons observé que la peinture était de couleur turquoise sur la structure d'acier. Quelques marques de corrosion étaient présentes sur les éléments d'acier. La peinture était fortement liée à la structure. De ce fait, il nous a été impossible de prélever des échantillons secs.

Lors de nos prélèvements, une attention particulière a été apportée à prélever de la peinture jusqu'au métal sain, c'est-à-dire avec l'apprêt de la peinture. Notre méthode d'échantillonnage par voie humide (décapant) ne nous a pas révélé la présence d'un apprêt de peinture. Les photos suivantes démontrent les surfaces de peinture à la suite de nos prélèvements.



Échantillon après prélèvement (pont ave. St-Pierre/ave. Dollard direction sud) pris depuis les plaques de renfort



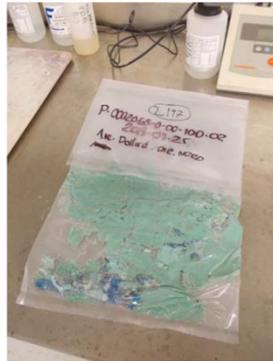
Échantillon après prélèvement (pont ave. St-Pierre/ave. Dollard direction nord) pris depuis les plaques de renfort et une poutre



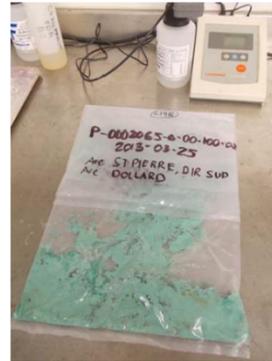
RAPPORT D'INTERVENTION

Résultat d'analyse

L'analyse de la teneur en plomb a été effectuée par spectrophotométrie à absorption atomique et les teneurs en plomb sont de l'ordre de 0.72 à 1.88%.



Échantillon de peinture
(pont ave. St-Pierre/ave. Dollard direction
nord)



Échantillon de peinture
(pont ave. St-Pierre/ave. Dollard direction
Sud)

Conclusion et recommandations

Normalement, les poutres recouvertes de peinture au plomb sont considérées comme des déchets dangereux et doivent être traitées avant la mise au rebut. Selon l'EPA (Environmental Protection Agency), on appelle une peinture au plomb, toute peinture présentant une concentration égale ou supérieure à $1,0 \text{ mg/cm}^2$ ou 0,5% par masse. À partir de ce moment, l'enlèvement du revêtement devrait suivre la procédure émise par l'OSHA (Occupational Safety and Health Administration).

Suivant ces résultats, un enlèvement du revêtement par jet d'abrasif, le cas échéant, entraînera un dépassement de la valeur maximale de la teneur en plomb établie par la Loi sur la santé et la sécurité du travail c. S-2.1, r.19.01. Par conséquent, les travaux doivent être réalisés conformément à la Loi sur la santé et la sécurité du travail (L.R.Q., c. S-2.1) et la Loi sur la qualité de l'environnement (L.R.Q., c. Q-2).

Les résidus liquides ou solides qui seront récupérés devront être traités suivant le règlement sur les matières dangereuses (Décret 1310-97, du 8 octobre 1997) (Québec) sans mesures particulières requises lors de la présence de plomb.



RAPPORT D'INTERVENTION

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Observations importantes : La teneur en plomb de la peinture prélevée sur les éléments de la charpente métallique des ponts Lafleur et Gauron est de l'ordre de <0,01%.	
Technicien : Keven Pelletier, ing. jr O.I.Q. n° 5027078 CSA W178.2 niveau 1	Date : Le 3 avril 2013
Vérifié par :  Bernard Perron, B. Ens. Certifié NACE Directeur de projets Superviseur CSA W178.2 niveau 3 n° 746	Date : Le 3 avril 2013
c.c. : M. Dominic Pierre (Agence Parcs Canada) (dominic.pierre@pc.gc.ca) Mme Christine Lacasse (Dessau) (christine.lacasse@dessau.com) M. Yvan Bruneau (Dessau) (yvan.bruneau@dessau.com) M. Jean Lizotte (Dessau) (jean.lizotte@dessau.com)	
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