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NA

Québec

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**SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Travaux publics et Services gouvernementaux Canada
Place Bonaventure, portail Sud-Oue
800, rue de La Gauchetière Ouest
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Montréal
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| | |
|---|--|
| Title - Sujet Tourelle UIS&réaménagement RDC-PC | |
| Solicitation No. - N° de l'invitation 21301-229053/A | Amendment No. - N° modif. 004 |
| Client Reference No. - N° de référence du client 21301-22-9053 | Date 2022-01-13 |
| GETS Reference No. - N° de référence de SEAG PW-\$MTC-080-16338 | |
| File No. - N° de dossier MTC-1-44176 (080) | CCC No./N° CCC - FMS No./N° VME |
| Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Standard Time EST on - le 2022-01-20 Heure Normale du l'Est HNE | |
| F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/> | |
| Address Enquiries to: - Adresser toutes questions à: Antoine, Englead | Buyer Id - Id de l'acheteur mtc080 |
| Telephone No. - N° de téléphone (438) 340-5863 () | FAX No. - N° de FAX () - |
| Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: | |

Instructions: See Herein

Instructions: Voir aux présentes

| | |
|--|--|
| Delivery Required - Livraison exigée | Delivery Offered - Livraison proposée |
| Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur | |
| Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur | |
| Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie) | |
| Signature | Date |

MODIFICATION 004

QUESTIONS/ ANSWERS

QUESTIONS:

ANSWERS:

| | |
|--|--|
| <p>15- In the general notes to the plan we are asked for insulation inside the ducts, usually we are asked to put it only in rectangular ducts but in the plans there is no note saying that the interior insulation is applicable only to rectangular ductwork, so they also want it in round ductwork? - And for the supply ducts, they require 3" of insulation, but they do not specify what type of insulation they want, for the return ducts they require sound insulation</p> <p>NOTES GÉNÉRAL DE CONSTRUCTION: CONSTRUCTION GENERAL NOTE: AIR FEEDING DUCTS MUST BE INSULATED INTERNALLY, WITH A FLEXIBLE INSULATION OF 75mm THICK. RETURN AIR DUCTS MUST BE INSULATED INTERNALLY, WITH A RIGID ACOUSTIC INSULATION OF 25mm THICK. DETAL SHEET USED MUST BE MINIMUM 16 GA.</p> | <p>15- Ductwork insulation should be installed on top of the circular ones instead of inside.</p> <p>Insulation for feeding air ducts does not need to be acoustic. See the specification section 23 07 13, for insulation type to install.</p> |
| <p>16- In plan M-501, notes # 1 and 2, 75mm interior insulation is requested in the supply ducts. • Wouldn't it be external thermal insulation instead? • If it is sound insulation, there is no sound insulation 75mm thick. Also in 200mm circular ducts, there would be a 50mm opening left after installing the insulation. • In the return ducts a 25mm acoustic insulation is required. Is it the full length of the return ducts? • We ask that the conduits be of 16 gauge. Will they be all the conduits? Circular spiral-type conduits do not exist in gauge 16. What then must be provided?</p> | <p>16- Most points are answered previously.</p> <p>Return air ducts must be insulated on their square section. All conduits must be gauge 16. Provide round conduit of gauge 18 or the thicker possible.</p> |
| <p>17- In addendum 003, in the Q / A table, a mention is made of an addendum in architecture and in electricity which is to come. Do you know when these addenda will be published considering that the closing date is soon?</p> | <p>17- Refer to addendum A1 and ME1</p> |
| <p>18- FINISH TABLE (p. A11): There is no baseboard to supply and install. However, in the INSTALLATION section of specification 09 67 00, article 3.3.6, reference is made to a 100mm x 3mm thick cove baseboard. Specify if there is an epoxy skirting board to be made as part of this project.</p> | <p>18- Yes, remount the epoxy coating as described in the specifications.</p> |
| <p>19- FINISH table(p. A11): What are the new concrete surfaces to be painted in S146 and S202A?</p> | <p>19- There is no concrete to paint on the floor of these 2 rooms. This is an error in the finish table.</p> |
| <p>20- FINISH table (p. A11): What are the steel plate surfaces to be painted in S142.2 and S142.3?</p> | <p>20- There are no steel plates on the walls in these 2 rooms, it is an error in the table of finishes.</p> |

21- 09 91 99, art. 2.1.1: Would an International manufacturer be acceptable?

21- If these products meet the specifications of the quote, there is no problem using them.

- An addendum in architecture – see attached document
- An addendum in electricity – see attached document

***** ALL OTHERS TERMS, CLAUSES AND CONDITIONS REMAIN UNCHANGED *****

THE PURPOSE OF THIS ADDENDUM IS TO CORRECT, COMPLETE AND SPECIFY ARCHITECTURAL PLANS AND SPECIFICATIONS. This addendum is an integral part of the tender documents concerning the above-mentioned project.

The following information replaces the documents in the tender files issued on September 21, 2021.

This addendum becomes part of the contractual documents, and must be interpreted in accordance with them and coordinated with them. The cost of everything mentioned therein is to be added to the contract price. The following revisions supersede the information contained on the drawings and specifications, to the extent indicated, and are to be incorporated in them. Bidders must acknowledge receipt of this addendum indicating the number and date in their bid, failing which it may be rejected.

1. ADDENDUM A1

1. This addendum includes:
 1. 2 sheets 8½ x 11 " - description of the addendum
 2. 6 sheets - Specification section 07 81 20 - Interior Intumescent Fire Protection

2. CHANGES TO SPECIFICATIONS

1. Add **section 07 81 20** - Interior Intumescent Fire Protection See attached section.
2. **Section 08 71 00** - Door Hardware
 1. Modify hardware groups #1 and #3 as follows:

Doors S142.2, S142.3

GROUP 01

| | | | | |
|----------|---|---|-------|-------|
| 3 | Hinges 4-1/2-FM-ICS 114 x 114 x Tork 630 screws | F/A | | |
| 1 | Lock | Folger Adam 86 (see notes*) | | |
| 1 | Mortise cylinder | Recovered, to be reinstalled | | |
| 1 | Deadlock | Folger Adam series 17 (see notes*) | | |
| 1 | Window latch | 3905 | 626 | Hager |
| 1 | Robust stopper | 420 | Black | F/A |
| 1 | Door sill | | | |
| 1 | Handle # 2 (exterior side of the room only) | | | |

*Note: The Folger Adam series 17 lock to be installed will be supplied by SCC.

Door 142.2: Folger Adam 86 lock recovered from existing door 142.2 to be installed.

Door 142.3: New Folger Adam 86 lock to be installed, supplied by SCC.

Handcuff Window

| | | | | |
|---|-----------------|--|-------|-----|
| 2 | Hinges | 4-1/2-FM-ICS 114 x 114 x Tork 630 screws | F/A | |
| 1 | Recessed handle | GSH921 | 630 | GSH |
| 1 | Neoprene | 1/8 x 3/8 x perimeter | Black | UA |
| 1 | Wall Stop | 240 | 626 | GSH |

Note: coordinate the lock model with the frame and the door.

Door 146.1**GROUP 02**

| | | | | |
|---|--|--------------|-----|-----|
| 3 | Hinges | 4-1/2-FM-ICS | 630 | F/A |
| 1 | Lock #56M (recovered from the existing on the exterior fences) | | | |
| 1 | Door position switch Adam 534 (recovered from the existing on the exterior fences) | | | |
| 2 | Pull handle | GSH920 | 630 | GSH |

Door S146.2**GROUP 03**

| | | | | |
|----------|---|---|-----|-----------------|
| 3 | Hinges | SF 205FS | USP | Southern Folger |
| 1 | Adam Lock #56M (recovered from the existing on the exterior fences) | | | |
| 1 | Adam 534 door monitoring (recovered from the existing on the exterior fences) | | | |
| 2 | Pull handles | GSH920 | 630 | GSH |
| 1 | Door closer | 4210 Cush x 72M | 689 | LCN |
| 1 | Deadlock | Folger Adam series 17 (see notes*) | | |
| 1 | Weather stripping | 326AA x perimeter | AL | Zero |
| 1 | Door sill | 8198A x LR. | AL | Zero |
| 1 | Aluminum threshold | AB_ ABBT x AB_x L.R. | AL | UA |

*Note: The Folger Adam series 17 lock to be installed will be supplied by SCC.

3. MODIFICATIONS TO THE DRAWINGS

1. Sheet A11: Replace the hardware groups in the door table:

| TABLEAU DES PORTES ET CADRES / DOORS AND FRAMES SCHEDULE | | | | | | | | | | | |
|---|------------------------|------------------|-------------------|------------------------|----------------------|--------------------|--------------------|----------------------|--------------------|---|----------------------|
| No. No. | ÉLÉVATION ELEVATION | PORTE DOOR | | | | | | CADRE FRAME | | GROUPE DE QUINCAILLERIE HARDWARE GROUP | REMARQUES REMARKS |
| | | LARGEUR WIDTH | HAUTEUR HEIGHT | ÉPAISSEUR THICKNESS | MATÉRIAU MATERIAL | FINITION FINISH | VITRAGE GLAZING | MATÉRIAU MATERIAL | FINITION FINISH | | |
| S142.2 | 1 | 915 | 2135 | 50 | AC | P | V1 | AC | P | 01 | - |
| S142.3 | 1 | 915 | 2135 | 50 | AC | P | V1 | AC | P | 01 | - |
| S146.1 | 2 | 915 | 2135 | 38 | AC | P | - | AC | P | 02 | - |
| S146.2 | 3 | 915 | 2135 | 50 | AC | P | V2 | AC | P | 03 | - |
| REMARQUES / REMARKS | | | | | | | | | | | |
| | | | | | | | | | | | |

END OF SECTION



PARTIE 1 GENERAL**1.1 RELATED SECTIONS**

- .1 Steel Structure Division

1.2 REFERENCE STANDARDS FOR FIRE PROTECTION

- .1 CAN/ULC-S101 or ASTM E-119 Standard Test Methods for Fire Tests
- .2 Standard Methods of Fire Endurance Tests of Building Construction and Materials.
 - .1 Directories of designs tested:
 - .1 Underwriters Laboratories Inc. (UL)
 - .2 Underwriters Laboratories of Canada (ULC)
- .3 Surface Preparation Standards - The Society for Protective Coatings (SSPC)

1.3 INFORMATIONAL SUBMITTALS

- .1 Submit a technical data sheet in accordance with the requirements of section 01 33 00 - Submittal Procedures.
- .2 Submit the manufacturer's application guide in accordance with the requirements of Section 01 61 00 - Common Product Requirements.
- .3 Test Results: Submit the reports listed in accordance with the requirements of Section 01 45 00 - Quality Control. The tested designs retained must apply to the column model planned on site and in drawings.

1.4 QUALITY ASSURANCE

- .1 Manufacturer: Manufacturer specializing in the manufacture of fire protection products.
- .2 Installer: Company specializing in the implementation of fire retardant intumescent coating, with five (5) years of experience, supporting references and approved by the Manufacturer.
- .3 Products: Manufactured in accordance with UL or ULC's follow-up services program. Each container must bear the UL or ULC label.

1.5 REGULATORY REQUIREMENTS

- .1 Complies with the standards of fire-resistance rating prescribed by the Code de construction du Québec, in force.
- .2 Submit a certificate attesting that the fire retardant materials installed meet the regulatory body's requirements and test results.

1.6 DELIVERY OF THE COATING, STORAGE AND HANDLING

- .1 Deliver and store materials in their original sealed containers, clearly marked with trade name, type, and other identifying information. Store in a dry place without exposure to direct sunlight.

- .2 Packaged materials must bear the appropriate label, seal and UL tag for the fire-resistance rating.
- .3 Until time of installation, store the containers in a room where a temperature ranging from 5°C (41°F) to 25°C (77°F) can be maintained. If containers are delivered in cold weather, consider storage time in the heated room of 24 to 48 hours before use.
- .4 Discard materials that have been in contact with contaminants.
- .5 Do not freeze.

1.7 CONDITIONS ON SITE

- .1 Maintain the temperature of the ambient air and the support material at 10 degrees C and above during the entire application period as well as for the following 24 hours. Provide natural ventilation during and after application to allow flame retardant to cure properly. If the application is carried out in an enclosed space without an opening allowing natural ventilation, take the necessary measures to ensure air circulation inside as well as the extraction of stale air to the outside during and after application to allow the flame retardant to cure properly.
- .2 Maintain relative humidity within the limits recommended by the fire retardant's manufacturer.

1.8 SEQUENCING OF WORK ON SITE

- .1 The applicator must collaborate in the coordination and planning of the fire protection work in order to avoid delays in the progress of the work.
- .2 The installation of piping, ducting, and other suspended material should not be done before the application of the thin film of fire-resistant material in the area in question.

1.9 GUARANTEE

- .1 The work must be guaranteed for a period of 2 years following the date of substantial completion of the work.

PARTIE 2 PRODUCTS

2.1 MATERIALS - GENERAL

- .1 Assemblies: Plan the desired fire retardant treatment method, including auxiliary materials, in accordance with the requirements of each approved fire retardant design and the manufacturer's written instructions.
- .2 Provenance: For each type of flame retardant coating, obtain the required product from a single supplier.
- .3 Type of Flame Retardant Coating: As indicated on the drawings and as tested by a qualified testing agency. Identify products using appropriate markings.
 - .1 Fire-resistance ratings: 2 hours.
- .4 Asbestos: Provide products that do not contain any detectable trace of asbestos.

2.2 INTUMESCENT FIRE RETARDANT

- .1 Water-based intumescent fire retardant coating system applied in thin layers to structural steel:
 - .1 Acceptable products: Subject to compliance with requirements, the acceptable products to be used according to the manufacturer's recommendations for each type of application as indicated are:
 - .1 A/D Firefilm III from A/D Firefilm Protection Systems
 - .2 Isolatek International - Cafco SprayFilm WB 3 or WB
 - .3 Sherwin-Williams FIRETEX FX 5120
 - .4 Approved equivalent.
 - .2 Application: For general exterior or interior use, as designated by a qualified testing organization.
 - .3 Thickness: as required by the type of flame retardant coating prescribed; measured according to the requirements of approved fire-resistance designs.
Required fire-resistance: 2 hours.
 - .4 Surface combustion: According to ASTM E84 standard; inspection by a qualified testing organization. Identify products using the appropriate brands of the organization.
 - .1 Flame Spread Index: 25 or less
 - .2 Smoke Development Index: 50 or less
 - .5 Hardness: Unless otherwise recommended by the manufacturer, provide a hardness of at least 65 (measured with a type D durometer and according to ASTM D2240 standard).

2.3 PRIMER AND FINISH

- .1 General requirements: Provide auxiliary materials compatible with the flame retardant and the substrate, and which have been approved by the ULC or another inspection and testing body recognized by the authorities governing the use of the intended types of coating.
- .2 Substrate Primers: Primers must have been approved by the manufacturer of the flame retardant and meet one of the following requirements:
 - .1 Primer and substrate must be identical to those tested for each fire-resistance design by ULC or another inspection and testing organization recognized by the competent authorities.
- .3 Reinforcement fabric: Based on fiberglass or carbon; type, weight, and shape in accordance with the prescribed types of flame retardant coating; approved and supplied by the manufacturer of the flame retardant.
- .4 Top coat: Suitable for application over fire retardant coating; of the kind recommended in writing by the manufacturer of the flame retardant for each approved fire-resistant assembly.

- .5 Color and finish: At the discretion of the architect, among the complete range offered by the manufacturer.

PARTIE 3 EXECUTION

3.1 MANUFACTURER'S INSTRUCTIONS

- .1 Compliance: Comply with manufacturer's written requirements, recommendations, and specifications, including any available technical bulletins, instructions for handling, storing, and application, and data sheet instructions.

3.2 EMPLACEMENT

- .1 The location of the structural elements to be covered with an intumescent coating is indicated on the drawings.

3.3 EXAMINATION

- .1 Examine the substrates, surfaces, and application conditions in the presence of the installer to verify compliance with the requirements related to the substrates and other conditions affecting the execution of the work, taking into account the intended type of flame retardant coating. Check compliance with the requirements below:
 - .1 The substrate is free of dirt, oil, grease, stripping agents, rolling compounds, lubricant, scales, excessive rust, incompatible primer, paint, confinement agent, encapsulating agents, and other foreign substances which may compromise the adhesion of the coating under normal conditions of use or under the action of flame.
 - .2 Objects passing through the coating (clips, hangers, brackets, sleeves, etc.) are firmly anchored in the substrate.
 - .3 No ventilation ducts, pipes, equipment, or other suspended devices that could interfere with the application of the flame retardant are installed in front of or against the substrate.
- .2 Perform tests in accordance with the written recommendations of the manufacturer of the flame retardant, in order to verify that the substrate is free from substances liable to compromise the adhesion of the coating.
- .3 Prepare a written report, approved by the installer, listing the conditions that may affect the execution of the work.
- .4 Proceed with installation only when unsatisfactory conditions have been corrected.

3.4 PREPERATION

- .1 Cover other structures likely to be damaged by excess flame retardant material during application.
- .2 Free the substrates from substances liable to compromise the adhesion of the fire retardant coating.
- .3 Apply a primer to the substrate if it is an integral part of the approved fire retardant design and if the manufacturer of the flame retardant recommends it in writing, unless a

compatible primer paint has already been applied in workshop and the current condition allows it to receive the fire retardant coating.

- .4 If the coating is intended to remain exposed upon project completion, repair the substrate to remove defects that may affect the uniformity of the finished surface, in terms of texture and thickness. Remove small bumps and fill in any voids that may rise through the applied flame retardants.

3.5 APPLICATION

- .1 Construct fire-resistant assemblies in conformance with the prescribed type and the fire-resistance designs tested and validated by the test reports, whether it be the thickness, the primers used, the finishing coats applied, the finish or other materials or procedures related to the fire retardant work.
- .2 Comply with the instructions given by the manufacturer of the flame retardant in writing regarding the mixing materials, the application procedures and the type of equipment to be used for mixing, transporting, and applying the product, taking into account the particular installation conditions and the fire-resistance ratings to be obtained.
- .3 Coordinate with other trades to avoid having to cut or remove sections of fire retardant coating as much as possible.
 - .1 Do not start to apply the product until the clips, hangers, supports, sleeves and other devices involving the crossing of the flame retardant layer have been put in place.
 - .2 Postpone the installation of ventilation ducts, pipes, and other equipment that may interfere with the application of the retardant.
- .4 Install auxiliary materials as required, as indicated and in accordance with the approved fire-resistant design chosen as well as the written recommendations of the manufacturer of the fire retardant, taking into account the exposure conditions and the intended use. For auxiliary materials, use fasteners and anchors of the type recommended by the manufacturer of the fire retardant in writing.
- .5 Apply product by spraying as much as possible. Finish the treated surface by applying the product with a trowel or by another method that the manufacturer of the fire retardant has recommended in writing.
- .6 Spread the fire retardant to the required thickness over the entire surface of each substrate to be protected.
- .7 Apply coating in one operation, unless the manufacturer of the fire retardant has recommended another method in writing.
- .8 Ensure a uniform finish corresponding to the description given for each type of fire retardant material as well as to the finish approved on the basis of the samples.

- .9 Apply a curing product to the fire-resistant coating in accordance with the manufacturer of the flame retardant's written recommendations.
- .10 Do not recoat with other materials until fire retardant coating has been applied, inspected, tested and, if necessary, repaired.

3.6 ON SITE QUALITY CONTROL

- .1 On site checks by the manufacturer
 - .1 Obtain a written report from the manufacturer confirming the work's compliance with the specified requirements for handling, application of products as well as for the protection and cleaning of the work .
 - .2 The manufacturer must make recommendations on the use of the product(s), and make periodic visits to verify whether the application was carried out as recommended.

3.7 RESURFACING

- .1 Repair intumescent fire retardant coating damaged during testing or work performed by other trades.

3.8 CLEANING

- .1 Clean in accordance with Section 01 74 11 - Cleaning.
- .2 Remove protective covers and other means of protection and clean adjacent surfaces after application.
- .3 After completion of application work and of performance monitoring, remove surplus materials and equipment, waste, tools, and equipment from the site.

END OF SECTION



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***Les changements apportés aux documents de soumission énumérés et décrits ci-après, deviennent effectifs immédiatement. Le présent addenda fera partie des documents du contrat.
Changes made in tender request documentation listed and described below are accounted right away.
The current addendum is part of the contract documentation.***

1.0 ÉLECTRICITÉ / ELECTICITY

.2 DEVIS / SPECIFICATION

1. Section 26 50 00

1. Ajout de la section 26 50 00 au devis.
Addition of section 26 50 00 to the specification document.
2. Le tout tel que montré dans la section 26 50 00 révisée en date du 2022-01-12 et annexée au présent addenda.
As shown in section 26 50 00, reviewed on 2022-01-12 and linked to the current addendum.

FIN DE L'ADDENDA N° ME-01 / END OF ADDENDUM ME-01



Alexandre Boutin-Frenette, ing.

Part 1 Général

1.1 DOCUMENTS/ÉCHANTILLONS À SOUMETTRE POUR APPROBATION/INFORMATION

- .1 Soumettre les documents et les échantillons requis conformément à la section 01 33 00 - Documents et échantillons à soumettre.
- .2 Fiches techniques
 - .1 Soumettre les fiches techniques requises ainsi que les spécifications et la documentation du fabricant. Les fiches techniques doivent indiquer les caractéristiques des produits, les critères de performance, les dimensions, les limites et la finition.
 - .2 Soumettre les données photométriques complètes des luminaires proposés, établies par un laboratoire d'essais indépendant, et les faire approuver par le Représentant du Ministère.
 - .3 Ces données photométriques doivent comprendre ce qui suit, s'il ya lieu : tableau illustrant le taux de CVP .

1.2 LAMPES ET DRIVERS DE RECHANGE

- .1 Fournir 5% additionnel de chaque type de lampe pour en avoir de rechange.
- .2 Fournir (2) deux drivers de rechange pour chaque type de driver.

Part 2 Produit

2.1 GÉNÉRALITÉS

- .1 Tous les appareils d'éclairage doivent avoir été approuvés par l'un des organismes accrédités par le Conseil canadien des normes et en porter la marque.

2.2 DEL

- .1 Munir tous les luminaires de diode électroluminescente ou de plaques à diode convenant au type de fixture et ayant les caractéristiques suivantes :
 - .1 IRC de 80 minimum;
 - .2 3 500°K, selon indication
 - .3 95 LM/W minimum
- .2 Éclairage intérieur
 - .1 Tous les appareils d'éclairage doivent être positionnés de façon à ce qu'ils soient accessibles facilement et rapidement pour l'entretien des lampes et des ballasts.

- .2 Les appareils et les lampes DEL doivent respecter les exigences suivantes :
 - .1 Chaque plaquette doit être conforme aux recommandations d'IESNA LM-80.
 - .2 Chaque luminaire à semi-conducteurs doit rencontrer une des méthodes d'essai suivantes :
 - .1 IESNA LM-79
 - .2 CISPR15
 - .3 D.O.E. (Department of Energy) Lighting Facts
- .3 Les appareils à DEL devront avoir une durée de vie minimale de 50 000 heures mesurée à 90 % du flux lumineux à une température ambiante de 25 °C, et correspondant à un taux de mortalité maximum des lampes de 10 %.
- .4 Les appareils d'éclairage à DEL utilisés devront empêcher la vision directe du faisceau émis par les DEL et utiliser des dispositifs optiques pour limiter la luminance perçue directement ou réfléchi. Le type de lumière émise par ces appareils ne devra pas être dommageable pour les yeux.
 - .1 L'éblouissement direct de chaque appareil d'éclairage intérieur ne doit pas être transmis à l'extérieur par les fenêtres.
 - .2 Aucune lampe nue ne devrait être directement visible pour tout angle de vue normale.
 - .3 Limiter la quantité de rayons UV ÉMIS par les appareils d'éclairage.

2.3 DRIVERS

- .1 Les « drivers » pour appareils « LED » devront être conçus pour supporter une tension d'entrée à 120 V avec une variation de $\pm 10\%$. Ils devront avoir un taux de distorsion harmonique inférieur à 20 %, un facteur de puissance supérieur à 0,90 et un niveau d'isolation de classe II. Les « drivers » devront être approuvés pour usage intérieur. Ils devront être de capacité suffisante pour alimenter la charge raccordée à la sortie sans surchauffe et/ou dommage.

2.4 FINITION

- .1 Traitement du métal avant le peinturage :
 - .1 Revêtement de conversion anticorrosion conforme à la norme CGSB31-GP-103Ma.
 - .2 Revêtement de conversion pour peinturage de fond, conforme aux normes CGSB 31-GP-105Ma et 31-GP-106a.

- .2 Les surfaces métalliques du boîtier et du réflecteur doivent être recouvertes d'une couche d'émail cuit au four à fini très brillant afin d'assurer au métal une apparence lisse et uniforme, exempte de piqure de corrosion et autres imperfections.
- .3 Caractéristiques de la couche de finition du réflecteur et des autres surfaces internes :
 - .1 Blancheur, facteur de réflexion d'au moins 85 %.
 - .2 Épaisseur du feuillet de peinture : en moyenne 30 micromètres au moins et jamais inférieure à 25 micromètres.

Part 3 Exécution

3.1 INSTALLATION

- .1 Installer les luminaires aux endroits prévus, selon les indications.
- .2 Les luminaires doivent être adéquatement supportés pour le type de système de plafond dans lequel ils sont montés.

3.2 CÂBLAGE

- .1 Raccorder les luminaires aux circuits d'éclairage.
 - .1 Poser le câblage dans des conduits rigides ou flexibles, selon les indications.

3.3 SUPPORTS DES LUMINAIRES

- .1 Les luminaires doivent être supportés indépendamment du plafond.

3.4 ALIGNEMENT DES LUMINAIRES

- .1 Les luminaires montés en bandes lumineuses doivent être correctement alignés, de manière à former une bande rectiligne ininterrompue.
- .2 Les luminaires montés individuellement doivent être parallèles ou perpendiculaires aux lignes d'implantation du bâtiment.

FIN DE LA SECTION

Part 1 General

1.1 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Provide complete photometric data prepared by independent testing laboratory for luminaires where specified, for approval by Departmental Representative
 - .3 Photometric data to include: VCP Table where applicable.

1.2 ADDITIONAL LAMPS AND DRIVES

- .1 Provide 5% of additional lamps for each type so there is extra.
- .2 Provide (2) two drivers for replacement fro each driver type.

2.1 GENERAL

- .1 All lighting devices must be approved by a Standards Council of Canada accredited organism and be labeled as is.

2.2 LED

- .1 Provide all light fixtures with electroluminescent diode or diode plates approved for the fixture type and having the specification as follow:
 - .1 CRI of 80 minimum;
 - .2 3 500°K, according to the indications
 - .3 95 LM/W minimum
- .2 Interior lightitng
 - .1 All lighting devices must be positioned so maintenance on ballasts and lamps is easily accessible and quick.
 - .2 LED devices and lamps must respect the following recommendations:
 - .1 Every plate must be in accordance with IESNA LM-80.

- .2 Every semiconductor light fixture must be tested at least by one of the following methods:
 - .1 IESNA LM-79
 - .2 CISPR15
 - .3 D.O.E. (Department of Energy) Lighting Facts
- .3 LED devices must last a minimum of 50 000 hours for 90% of light flux at 25°C of ambient temperature, with a minimum of 10% defective lamps.
- .4 LED devices must not allow direct eye contact with the light beam emitted by the LED and use optic devices to reduce the direct or reflected brightness.
 - .1 Interior lighting devices direct glare must not spread outside through windows.
 - .2 No bare lamps should be visible at any normal angle.
 - .3 Limit the emitted UV rays for lighting devices.

2.3 DRIVERS

- .1 Drivers for LED devices must allow a 120V tension within 10% variation. Harmonic distortion must be lower than 20%, power factor must be higher than 0,90 and insulation level must be class II. Drivers must be approved for interior use and must have enough capacity to feed charges connected without heating or damages.

2.4 FINITION

- .1 Metal treatment prior to painting:
 - .1 Anti rust coating as per CGSB31-GP-103Ma.
 - .2 Primer coating as per CGSB-31-GP-105Ma and 31-GP-106a.
- .2 Metal faces for the fixture and the reflector must be covered by a layer of bright baked enamel so the metal looks smooth and uniform, without rust points or any other imperfections.
- .3 Finish coating specification for the reflector and other internal faces:
 - .1 Whitening, brightness of at least 85 %.
 - .2 Paint layer thickness of 30 micrometers at least and never below 25 micrometers.
- .1 Locate and install luminaires as indicated.
- .2 Provide adequate support to suit ceiling system.

3.2 WIRING

- .1 Connect luminaires to lighting circuits:
 - .1 Install flexible or rigid conduit for luminaires as indicated.

3.3 LUMINAIRE SUPPORTS

- .1 Support luminaires independently of ceiling.

3.4 LUMINAIRE ALIGNMENT

- .1 Align luminaires mounted in continuous rows to form straight uninterrupted line.
- .2 Align luminaires mounted individually parallel or perpendicular to building grid lines.

END OF SECTION