



## RETURN BIDS TO:

## RETOURNER LES SOUMISSIONS À:

Bid Receiving Public Works and Government  
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Vancouver  
British Columbia  
V6Z 0B9  
Bid Fax: (604) 775-9381

## 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  
Public Works and Government Services Canada - Pacific  
Region  
800 Burrard Street, Room 219  
800, rue Burrard, pièce 219  
Vancouver  
British C  
V6Z 0B9

<b>Title - Sujet</b> Tofino New HRV	
<b>Solicitation No. - N° de l'invitation</b> EZ899-202956/A	<b>Amendment No. - N° modif.</b> 001
<b>Client Reference No. - N° de référence du client</b>	<b>Date</b> 2020-05-07
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$PWY-040-8767	
<b>File No. - N° de dossier</b> PWY-9-42265 (040)	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2020-05-15</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Pacific Daylight Saving Time PDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Taron (PWY), Rebecca	<b>Buyer Id - Id de l'acheteur</b> pwy040
<b>Telephone No. - N° de téléphone</b> (250) 857-2810 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> RCMP - 450 Gibson Street, Tofino, BC	

Instructions: See Herein

Instructions: Voir aux présentes

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

Solicitation No. - N° de l'invitation  
EZ899-202956/A

Amd. No. - N° de la modif.  
001

Buyer ID - Id de l'acheteur  
PWY040

Client Ref. No. - N° de réf. du client  
EZ899-202956

File No. - N° du dossier  
PWY-9-42265

CCC No./N° CCC - FMS No./N° VME

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**Amendment No. 001 issued to amend the above noted solicitation as follows:**

- i. To publish Addendum #1**

**All other terms and conditions remain the same.**

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The following changes in the tender documents are effective immediately. This addendum will form part of the contract documents.

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## **1.0      SPECIFICATIONS**

### **1.1      Section 02 81 01 Hazardous Materials – Existing Conditions:**

Delete:

#### **3.1.1.1.3 Mould**

1. The intent of this work is to remove (clean) surface mould from the ceiling surfaces in the Southeast Bedroom and Corner Bedroom areas in the building. Cleaning will involve the application of a cleaning solution to identified mould growth, cleaning of mould growth, and the application of an oil-based primer, containing a mould-inhibitor.

Add:

#### **3.1.1.1.3 Mold**

1. The intent of this work is to remove (clean) surface mold from the ceiling surfaces in the Bedroom and Bathroom areas in the building as identified in Architectural Drawings. Cleaning will involve the application of a cleaning solution to identified mold growth, cleaning of mold growth, and the application of an oil- based primer, containing a mold-inhibitor.

### **1.2      Section 07 21 16 Blanket Insulation – Thermal & Moisture Protection:**

Delete:

#### **2.1.3 Density 45kg/m<sup>3</sup> minimum.**

Add:

#### **2.1.3 Thermal Performance:**

ASTM C 518

R14 (RSI 2.47) – 89mm thick (3.5")

R22 (RSI 3.87) - 140mm thick (5.5")

R24 (RSI 4.23) - 140mm thick (5.5")

R28 (RSI 4.93) - 184mm thick (7.25")

R32 (RSI 5.64) - 203mm thick (8")

### **1.3      Section 09 91 21 Painting – Finishes**

Add:

#### **2.5.5 Spray Textures Surfaces (ceilings):**

- .1      INT 9.1B Latex gloss level 1 finish (over alkyd sealer).

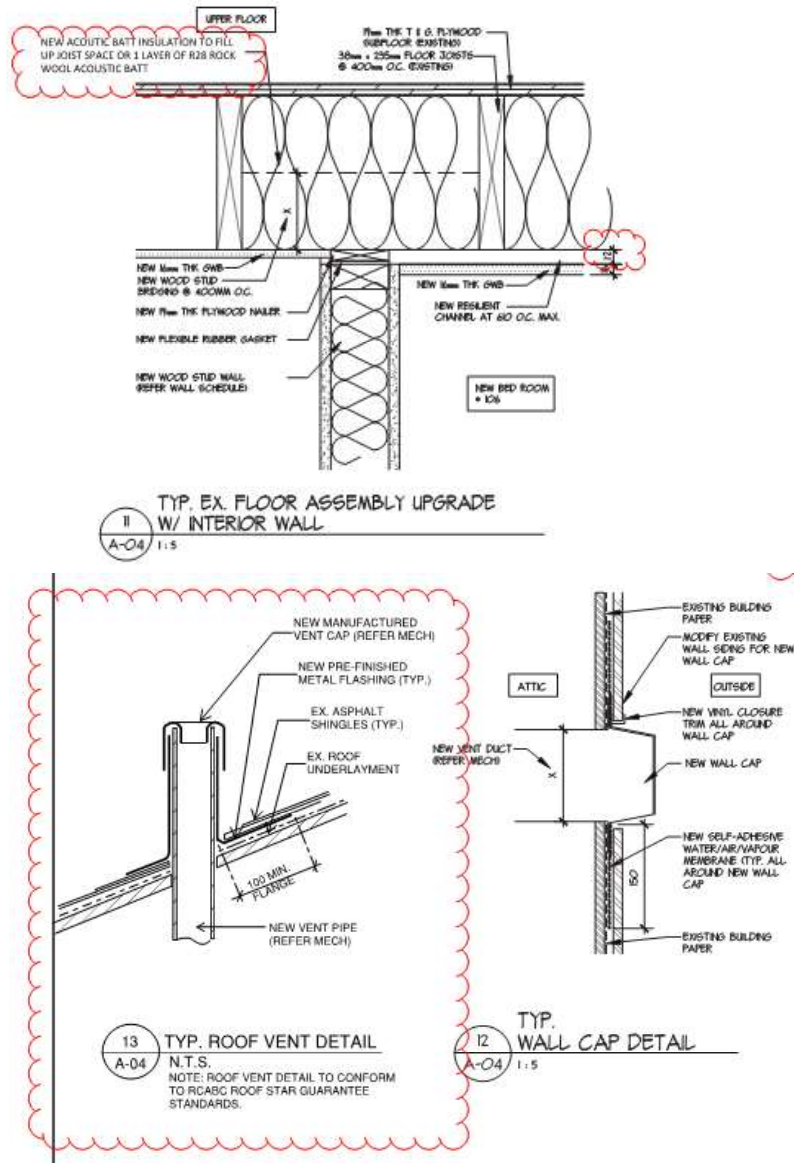
#### **2.6.5 Spray Textures Surfaces (ceilings):**

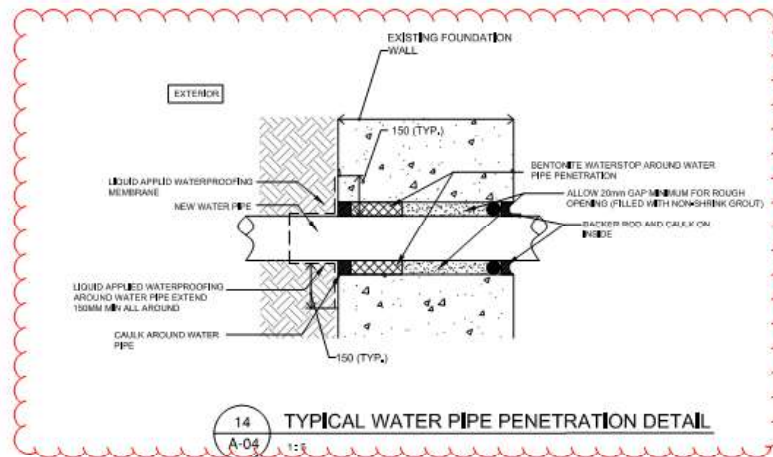
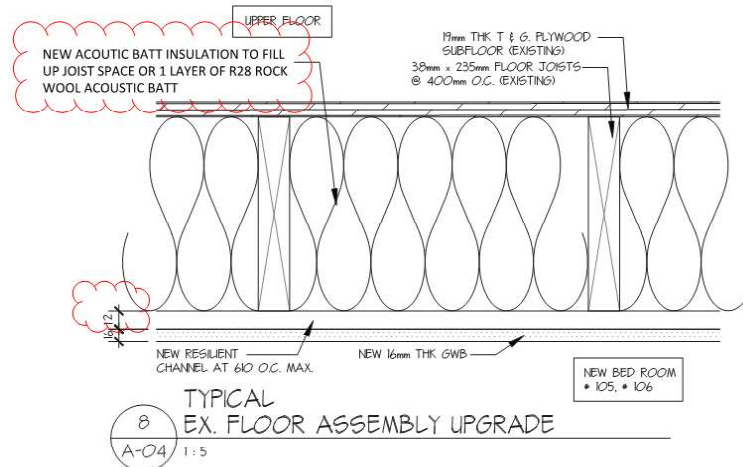
- .1      RIN 9.1A Latex flat finish (over stain-blocking primer).

## 2.0 DRAWING

### 2.1 A-04 Details Millwork Details – changes as clouded on drawing (11-A04, 13-A04, 8-A04, 14-A04).

#### A-04 Details Millwork Details





#### KEYNOTE

- ① REMEDIATE POLY VAPOUR BARRIER WHERE IT IS REMOVED FOR MOULD REMEDIATION AND WHERE IT IS DISRUPTED BY NEW CONSTRUCTION AND REPLACE WITH NEW INSULATION (BATT OR BROWN IN) THROUGHOUT THE WHOLE ATTIC
- ② REPLACE AFFECTED GWB CEILING WITH NEW GWB CEILING RESULTING FROM MOLD TREATMENT AND FROM MECH/ELEC RE& RE OR NEW INSTALLATIONS. FINISHED AFFECTED AREA IN TEXTURE SPRAY AND PAINT WHOLE ROOM TO MATCH EXISING.
- ③ REMOVE EXISTING SOFFIT PANEL + REMOVE EX. PLYWOOD ABOVE. RE-INSTALL EX. SOFFIT PANEL
- ④ BULKHEAD TO ACCOMMODATE MECH DUCT (REFER MECH)

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### **3. BIDDER QUESTIONS**

- 3.1**      **Q:** I see where the attic will be re-insulated and I assume that it will be blown. They also ask for new poly but I don't understand how that will work with most of the drywall remaining in place. Would it be correct to allow new poly for the localized areas affected by new construction/mold remediation only? If they wanted a new vapour barrier maybe they could look to a vapour barrier paint.  
**A:** New vapour barrier is only required to replace the existing where it is affected by new construction.
- 3.2**      **Q:** As an aside, the upper floor ceilings are repainted where texture is re-applied. It is important that the painter use an appropriate sealer otherwise the paint will draw out years' worth of stains. Our quote will exclude this sealer but the ceiling finish is unacceptable without it.  
**A:** Stain-blocking sealer is required as per MPA approved paint system.
- 3.3**      **Q:** Regarding the new attic insulation. Will fiberglass blowing wool be acceptable? There is no blown insulation spec and the blanket insulation spec contemplates acoustical mineral wool only.  
**A:** Fiberglass blown-in insulation or batt insulation, rock wool blown-in or batt insulation are acceptable to achieve R40.)
- 3.4**      **Q:** The details for the upgraded floor refer to a 22mm high resilient channel. Resilient channel are 12.5mm and the 22mm product is closer to a hatrack. Would the proper resilient channel be OK for the project? It is less expensive and a better sound isolator than hatrack.  
**A:** The 22mm dimension should be replaced with 12mm in detail 8/A04 and 11/A04 to represent the correct size of resilient channel.
- 3.5**      **Q:** The acoustical insulation specified at 07 21 16 – 2.1 is a bit of a mystery to me. The headscratcher is the density of 45kg/m<sup>3</sup>. I can't find a product through Rockwool that matches that density.  
**A:** 07 21 16 Blanket Insulation paragraph 2.1.3 re: density requirement is to be deleted.
- 3.6**      **Q:** The partitions get a 3" mineral wool. Typically this is referring to Safe'N'Sound acoustical insulation but the density is 38kg/m<sup>3</sup>. It is however a common acoustical batt, manufactured by Rockwool for residential applications. Should we allow this for partitions?  
**A:** Rockwool batt insulation is acceptable.
- 3.7**      **Q:** In the upgraded floor they refer to batt insulation to fill the 2x10 joist space. Would an R28 Comfortbatt be acceptable? It is only 7.25" thick with a 32kg/m<sup>3</sup> density. However this is a popular acoustical floor batt in Tofino and allows us to use one layer of locally available insulation.  
**A:** 1 layer of R28 Comfortbatt is acceptable.

**END OF ADDENDUM 01**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 01 01 50 – General Instructions
- .2 Section 01 33 00 – Submittal Procedures
- .3 Section 01 35 33 - Health and Safety Requirements
- .4 Section 01 74 21 – Construction Demolition Waste Management and Disposal
- .5 Section 01 74 11 – Cleaning
- .6 Section 02 82 00.02 – Asbestos Abatement – Intermediate Precautions
- .7 Section 02 87 13.15 – Precautions for Mould Remediation – Maximum Precautions

**1.2 REFERENCES**

- .1 Reports (herein referred to as the Previous Environmental Reports):
  - .1 DST Consulting Engineers Inc. report – Building #E0841 – 450 Gibson Street, Tofino, BC, Pre-Renovation Hazardous Material Assessment, dated July 29, 2019.
  - .2 Pinchin Ltd. report – Asbestos Building Materials Survey Report – Building #E0841, dated March 14, 2019.
  - .3 WSP Canada Inc. report – Building Name – RCMP Housing, 450 Gibson Street, Tofino, BC, Building Envelope Condition Assessment, dated April 1, 2019.
    - .1 Copies of the Previous Environmental Reports are attached in Appendix C of the Project Specifications.
- .2 Definitions:
  - .1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
  - .2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
  - .3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.
  - .4 Hazardous Building Material: component of a building or structure that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when altered, disturbed or removed during maintenance, renovation or demolition.
- .3 Reference Standards:
  - .1 Canadian Environmental Protection Act, 1999 (CEPA 1999)
    - .1 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).

- .2 Department of Justice Canada
  - .1 Transportation of Dangerous Goods Act, 1992 (TDG Act) 1992, (c. 34).
  - .2 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286).
- .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .4 National Research Council Canada Institute for Research in Construction (NRC-IRC)
  - .1 National Fire Code of Canada (2015).
- .5 WorkSafe BC
  - .1 British Columbia's Occupational Health and Safety Regulation (BC Reg. 296/97, including amendments to date of work)
  - .2 "Safe Work Practices for Handling Asbestos" (latest edition)
  - .3 "Safe Work Practices for Handling Lead" (latest edition)
- .6 British Columbia Hazardous Waste Regulation (BC Reg. 63/88)
- .7 The Federal PCB Regulations (SOR/2008-273).
- .8 The British Columbia Waste Management Act - Ozone Depleting Substances and Other Halocarbons Regulation (BC Reg. 387/99).
- .9 The Federal Halocarbons Regulation (July 2003).
- .10 Canadian Construction Association
  - .1 Standard Construction Document CCA 82 "Mould Guidelines for the Canadian Construction Industry" (2004)

### **1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data for hazardous materials to be used by the Contractor to complete the Work:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets, and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements to Departmental Representative for each hazardous material required prior to bringing hazardous material on site.
  - .3 Submit hazardous materials management plan to Departmental Representative that identifies hazardous materials, usage, location, personal protective equipment requirements, and disposal arrangements.
  - .4 Construction/Demolition Waste Management:
    - .1 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating percentage of construction/demolition wastes were recycled or salvaged
  - .5 Low-Emitting Materials: submit listing of adhesives and sealants used in building, comply with VOC and chemical component limits or restrictions requirements.

### **1.4 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle hazardous materials to be used by the Contractor to complete the Work in accordance with manufacturer's written instructions.



- .2 Delivery and Acceptance Requirements: deliver hazardous materials to be used by the Contractor to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Transport hazardous materials and wastes in accordance with Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .4 Storage and Handling Requirements:
  - .1 Co-ordinate storage of hazardous materials to be used by the Contractor to complete the Work with Departmental Representative and abide by internal requirements for labelling and storage of materials and wastes.
  - .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
  - .3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.
  - .4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
    - .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.
    - .2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Departmental Representative.
  - .5 Transfer of flammable and combustible liquids is prohibited within buildings.
  - .6 Transfer flammable and combustible liquids away from open flames or heat-producing devices.
  - .7 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.
  - .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
  - .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
  - .10 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
    - .1 Store hazardous materials and wastes in closed and sealed containers.
    - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
    - .3 Store hazardous materials and wastes in containers compatible with that material or waste.
    - .4 Segregate incompatible materials and wastes.
    - .5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.
    - .6 Store hazardous materials and wastes in secure storage area with controlled access.
    - .7 Maintain clear egress from storage area.
    - .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.

- .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
- .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
- .11 When hazardous waste is generated on site:
  - .1 Co-ordinate transportation and disposal with Departmental Representative.
  - .2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.
  - .3 Use licensed carrier authorized by provincial authorities to accept subject material.
  - .4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.
  - .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.
  - .6 Only trained personnel handle, offer for transport, or transport dangerous goods.
  - .7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.
  - .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to Departmental Representative.
  - .9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.
- .12 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .13 Report spills or accidents immediately to Departmental Representative. Submit a written spill report to Departmental Representative within 24 hours of incident.
- .5 Include provisions for Work of this Section in Waste Reduction Workplan as outlined in Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Description:
  - .1 Bring on site only quantities hazardous material required to perform Work.
  - .2 Maintain MSDS in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

**Part 3 Execution**

**3.1 HAZARDOUS MATERIALS ABATEMENT**

.1 Scope of Abatement Activities.

.1 Abatement shall be conducted to handle, alter, remove and/or dispose of hazardous building materials as identified in the Previous Environmental Reports in accordance with applicable regulations, guidelines, standards and/or best practices for such work, where such identified hazardous building materials will be impacted (handled, altered, damaged, removed) by the Work.

.2 Contractor is responsible for reviewing plans, specifications and reports such that they understand the locations and amounts of hazardous materials that will be impacted by the Work of this contract, and such that appropriate plans and budgets can be included in their overall bids.

.3 The listing below is a summary of the identified hazardous building material categories and associated removal and disposal regulations, guidelines and/or standards, based on the project scope of work.

.1 Asbestos-Containing Materials (ACMs)

.1 Refer to the Previous Environmental Reports for identities and locations of ACMs that may require disturbance during the Work, including, but not limited to include:

- .1 Drywall joint compound located throughout the building.
- .2 Ceiling texture coating applied to ceilings throughout the building.

.2 Actions that will disturb identified ACMs are to be conducted in accordance with the requirements of the WorkSafe BC publication "Safe Work Practices for Handling Asbestos", latest edition, by appropriately trained personnel, further detailed below.

- .1 Submit WorkSafeBC Notice of Project Form no less than five (5) business days prior to start of work, to Departmental Representative.
- .2 Submit proof of Contractor's Asbestos Liability Insurance.
- .3 Submit to Departmental Representative necessary permits for transportation and disposal of asbestos containing waste and proof that asbestos containing waste has been received and properly disposed of, within twenty (20) business days after disposal.
- .4 Submit proof that all asbestos workers and/or supervisor have received appropriate training and education by a competent person in the hazards of asbestos exposure, good personal hygiene and work practices while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing, within five (5) business days prior to start of work, to Departmental Representative. Instruction and training related to respirators is to include, at a minimum:
  - .5 Fitting of equipment.
  - .6 Inspection and maintenance of equipment.
  - .7 Disinfecting of equipment.

- .8 Limitations of equipment.
  - .9 Waste transportation to be conducted in accordance with BC Reg. 63/88 and the Federal Transportation of Dangerous Goods Regulation.
  - .10 Waste disposal to be conducted in accordance with BC Reg. 63/88.
  - .11 Notify Departmental Representative immediately of suspected ACM discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material pending instructions from Departmental Representative.
- .2 Lead and Lead-Containing Paints (LCPs)
- .1 Refer to the Previous Environmental Reports for identification and locations of lead-containing materials (including LCPs) that may require disturbance during the Work.
  - .2 Actions that will disturb lead-containing materials (including paints and materials coated with LCPs) are to be conducted in accordance with the requirements of the current version of the WorkSafe BC publication "Safe Work Practices for Handling Lead", latest edition, keeping airborne exposure to lead dust to less than the 8-hour Occupational Exposure Limit (OEL) for lead of 0.05 milligram per cubic metre (mg/m<sup>3</sup>).
  - .3 Disturbance to LCPs are not expected to be required during the Work.
    - .1 Refer to the provisions of the WorkSafe BC publication "Safe Work Practices for Handling Lead", latest edition, for removal of LCPs from surfaces before any welding and torch-cutting, should the Contractor plan to use such methods to complete the Work.
      - .1 Contractor will be responsible for verification testing of surfaces where LCPs have been removed. Confirmation of acceptable results is to be provided to the Departmental Representative for review before proceeding with any welding or torch-cutting on surfaces where LCPs were present.
  - .4 Waste transportation to be conducted in accordance with BC Reg. 63/88 and the Federal Transportation of Dangerous Goods Regulation.
  - .5 Waste disposal to be conducted in accordance with BC Reg. 63/88.
- .3 Mold
- .1 **The intent of this work is to remove (clean) surface mold from the ceiling surfaces in the Bedroom and Bathroom areas in the building as identified in Architectural Drawings. Cleaning will involve the application of a cleaning solution to identified mold growth, cleaning of mold growth, and the application of an oil-based primer, containing a mold-inhibitor.**
  - .2 Removal (surface cleaning) of mould-impacted framing members and roof sheeting in the attic space of the building.

- .3 Removal and disposal of fiberglass insulation contaminated by mould spores.
- .4 Removal and disposal of installed soffit baffles located in the attic of the building.
- .5 Upon completion of surface cleaning, encapsulation of framing members and roof sheeting in the attic space of the building using an oil-based primer, containing a mould-inhibitor.
- .6 All mould remediation is to be completed in accordance with the requirements of the Canadian Construction Association, Mould Guideline for the Canadian Construction Industry, latest edition.
- .4 Mercury
  - .1 Removal, alteration and/or disposal of mercury-containing equipment is not anticipated to be required during the Work.
- .5 Ozone-Depleting Substances (ODSs)
  - .1 Removal, alteration and/or disposal of ozone-depleting substances is not anticipated to be required during the Work.
- .6 Silica
  - .1 Removal, alteration and/or disposal silica-containing materials is not anticipated to be required during the Work.

### **3.2 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 – Cleaning. Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 – Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling.
  - .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
  - .2 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
  - .3 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
  - .4 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
  - .5 Dispose of hazardous wastes in weekly in accordance with applicable federal and provincial regulations.
  - .6 Minimize generation of hazardous waste to so all hazardous waste generated daily is packaged in accordance with applicable federal and provincial acts, regulations, and guidelines. Take necessary precautions to avoid mixing clean and contaminated wastes.
  - .7 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
    - .1 Hazardous wastes recycled in manner constituting disposal.
    - .2 Hazardous waste burned for energy recovery.
    - .3 Lead-acid battery recycling.

- .4 Hazardous wastes with economically recoverable precious metals.

**END OF SECTION**

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Gypsum Board Assemblies Section 09 21 16
- .2 Non-Structural Metal Framing Section 09 22 16

### 1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM C 553-02, Specification for Mineral Fibre Blanket Thermal Insulation for Commercial and Industrial Applications.
  - .2 ASTM C 665-01e1, Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
  - .3 ASTM C 1320-05, Standard Practice for Installation of Mineral Fiber Batt and Blanket Thermal Insulation for Light Frame Construction.
- .2 Canadian Gas Association (CGA)
  - .1 CAN/CGA-B149.1-05, Natural Gas and Propane Installation Code Handbook.
  - .2 CAN/CGA-B149.2-05, Propane Storage and Handling Code.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
- .4 Underwriters Laboratories of Canada (ULC)
  - .1 CAN/ULC-S604-M1991, Type A Chimneys.
  - .2 CAN/ULC-S702-1997, Standard for Mineral Fibre Insulation

### 1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Manufacturer's Instructions:
  - .1 Submit manufacturer's installation instructions.

### 1.4 QUALITY ASSURANCE

- .1 Test Reports: certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
- .3 Convene pre-installation meeting one week prior to beginning work of this Section and on-site installations in accordance with Section 01 32 16.07 - Construction Progress Schedule-Bar (GANTT) Chart.
  - .1 Verify project requirements.
  - .2 Review installation and substrate conditions.
  - .3 Co-ordinate with other building sub-trades.

- .4 Review manufacturer's installation instructions and warranty requirements.
- .4 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 33 - Health and Safety Requirements.

## 1.5 WASTE MANAGEMENT & DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan.

## 2.0 PRODUCTS

### 2.1 INSULATION

- .1 Acoustic Batt & blanket mineral wool: Comply Type 1 CAN/ULC-5702-09, Type 1 for ASTM C665, Comply ASTM C553.
  - .1 Fire Performance:

CAN4 S114	Test for Non-Combustibility	Non-Combustible
ASTM E 136	Behavior of Materials at 750°C (1382°F)	Non-Combustible
CAN/ULC S102	Surface Burning Characteristics	Flame Spread = 0
		Smoke Developed = 0
ASTM E84 (UL 723)	Surface Burning Characteristics	Flame Spread = 0
		Smoke Developed = 0
CAN/ULC S129	Smolder Resistance	0.09%
  - .2 Acoustical Performance:

ASTM E 90	Airborne Sound Transmission	Tested
ASTM # 413	Rating Sound Insulation	Tested
ASTM C 423	Sound Absorption coefficients	Tested
ASTM E 1050	Impedance and Absorption of Acoustical Materials	Tested
  - .3 Thermal Performance:  
**ASTM C 518**  
**R14 (RSI 2.47) - 89mm thick (3.5")**  
**R22 (RSI 3.87) - 140mm thick (5.5")**  
**R24 (RSI 4.23) - 140mm thick (5.5")**  
**R28 (RSI 4.93) - 184mm thick (7.25")**  
**R32 (RSI 5.64) - 203mm thick (8")**

### 2.2 ACCESSORIES

- .1 Insulation clips:
  - .1 Impale type, perforated 50 x 50 mm cold rolled carbon steel 0.8 mm thick, adhesive back, spindle of 2.5 mm diameter annealed steel, length to suit insulation, 25 mm diameter washers of self-locking type.
- .2 Nails: galvanized steel, length to suit insulation plus 25 mm, to CSA B111.



- .3 Staples: 12 mm minimum leg.
- .4 Tape: as recommended by manufacturer.

### 3.0 EXECUTION

#### 3.1 MANUFACTURER'S INSTRUCTIONS

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

#### 3.2 INSULATION INSTALLATION

- .1 Install insulation to maintain continuity of thermal protection to building elements and spaces.
- .2 Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
- .3 Do not compress insulation to fit into spaces.
- .4 Keep insulation minimum 75 mm from heat emitting devices such as recessed light fixtures, and minimum 50 mm from CAN/CGA-B149.1 and CAN/CGA-B149.2 Type B and L vents.
- .5 Do not enclose insulation until it has been reviewed and approved by Departmental Representative.

#### 3.3 CLEANING

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers. security devices.

END OF SECTION 07 21 16

1.0 GENERAL

1.1 RELATED REQUIREMENTS

- |    |                         |                     |
|----|-------------------------|---------------------|
| .1 | Finish Carpentry        | Section 06 20 00    |
| .2 | Architectural Woodwork  | Section 06 40 00    |
| .3 | Flush Wood Doors        | Section 08 14 16    |
| .4 | Room Finish Schedule    | Section 09 06 00 13 |
| .5 | Gypsum Board Assemblies | Section 09 21 16    |

1.2 REFERENCES

- |    |   |
|----|---|
| .1 | Department of Justice Canada (Jus)  |
| .1 | Canadian Environmental Protection Act (CEPA), 1999, c. 33   |
| .2 | Environmental Protection Agency (EPA)   |
| .1 | EPA Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 - 1995, (for Surface Coatings). |
| .3 | Health Canada / Workplace Hazardous Materials Information System (WHMIS)  |
| .1 | Material Safety Data Sheets (MSDS).   |
| .4 | Master Painters Institute (MPI)   |
| .1 | MPI Architectural Painting Specifications Manual, latest edition.   |
| .5 | National Fire Code of Canada - 1995   |
| .6 | Society for Protective Coatings (SSPC)  |
| .1 | SSPC Painting Manual, Volume Two, 8th Edition, Systems and Specifications Manual.   |
| .7 | Transport Canada (TC)   |
| .1 | Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.  |

1.3 QUALITY ASSURANCE

- |    |   |
|----|---|
| .1 | Qualifications:   |
| .1 | Contractor: minimum of five years proven satisfactory experience. Provide list of last three comparable jobs including, job name and location, specifying authority, and project manager.   |
| .2 | Journeyman: qualified journeymen who have "Tradesman Qualification Certificate of Proficiency" engaged in painting work.  |
| .3 | Apprentices: working under direct supervision of qualified trade's person in accordance with trade regulations.   |
| .2 | Conform to the standards contained in the Master Painters Institute Architectural Painting Specification Manual, latest edition (hereafter referred to as MPI Painting Specification Manual) for all painting products including preparation and application of materials. MPI Painting Specification Manual as issued by the local MPI Accredited Quality Assurance Association having jurisdiction. |
| .3 | All paint manufacturers and products used shall be as listed under the "Approved Products" section of the MPI Painting Specification manual.  |

- .4 Other paint materials shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.
- .5 Single-Source Responsibility: provide primers and undercoat paint produced by the same manufacturer as the finish coat.
- .6 All painting and decorating work shall be inspected by Paint Inspection Agency (inspector) acceptable to the specifying authority and the local MPI Accredited Quality Assurance Association. The painting contractor shall notify the Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of the project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .7 All surfaces requiring painting or repainting shall be inspected by the inspection agency who shall advise on all aspects of painting work including preparation, notifying the Consultant, the Contractor and the Trade Contractor of any defects or problems prior to commencing painting work or after the prime coat shows defects in the substrate, and as the work progresses.
- .8 Standard of Acceptance:
  - .1 Wall: No defects visible from a distance of 1000mm at 90° to surface.
  - .2 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .9 Mock-Ups:
  - 1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
    - .1 Prepare and paint designated surface, area, room or item (in each colour scheme) to specified requirements, with specified paint or coating showing selected colours, gloss/sheen, textures.
    - .2 Mock-up will be used:
      - .1 To judge workmanship, substrate preparation, operation of equipment and material application and workmanship to MPI Architectural Painting Specification Manual standards.
    - .3 Locate where directed.
    - .4 Allow 24 hours for inspection of mock-up before proceeding with work.
    - .5 When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may remain as part of finished work.
- .10 Pre-Installation Meeting:
  - .1 Convene pre-installation meeting one week prior to beginning work of this Section and on-site installations in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart
    - .1 Verify project requirements.
    - .2 Review installation and substrate conditions.
    - .3 Coordination with other building subtrades.
    - .4 Review manufacturer's installation instructions and warranty requirements.
- .11 Health and Safety:
  - .1 Do construction occupational health and safety in accordance with Section 01 35 33 -

Health and Safety Requirements.

**1.4 PERFORMANCE REQUIREMENTS**

- .1 Environmental Performance Requirements:
  - .1 Provide paint products meeting MPI "Environmentally Friendly" E1, E2, E3 ratings based on VOC (EPA Method 24) content levels.
- .2 Green Performance in accordance with MPI Standard GPS-

**1.5 SCHEDULING**

- .1 Submit work schedule for various stages of painting to Departmental Representative for review. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from Departmental Representative for changes in work schedule.
- .3 Schedule painting operations to prevent disruption of occupants.

**1.6 SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit product data and instructions for each paint and coating product to be used.
  - .2 Submit product data for the use and application of paint thinner.
  - .3 Submit two copies of Workplace Hazardous Materials Information System (WHMIS) Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOCs during application.
- .3 Samples:
  - .1 Submit triplicates 200 x 300 mm sample panels of each paint, stain, or clear coating with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards submitted on following substrate materials:
    - .1 3 mm plate steel for finishes over metal surfaces.
    - .2 10 mm hardboard plywood for finishes over wood surfaces.
    - .3 13 mm gypsum board for finishes over gypsum board and other smooth surfaces.
  - .2 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.
  - .3 Test reports: submit certified test reports for paint from approved independent testing laboratories, indicating compliance with specifications for specified performance characteristics and physical properties.
    - .1 Lead, cadmium and chromium: presence of and amounts.
    - .2 Mercury: presence of and amounts.
    - .3 Organochlorines and PCBs: presence of and amounts.
  - .4 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .5 Manufacturer's Instructions:
    - .1 Submit manufacturer's installation instructions.
  - .6 Closeout Submittals: submit maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals include following:
    - .1 Product name, type and use.
    - .2 Manufacturer's product number.
    - .3 Colour numbers.
    - .4 MPI Environmentally Friendly classification system rating.

**1.7 MAINTENANCE**

- .1 Extra Materials:
  - .1 Deliver to extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Section 01 78 00 - Closeout Submittals.
  - .2 Quantity: provide one - 4 litre (1 gallon) can of each type and colour of primer stain finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
  - .3 Delivery, storage and protection: comply with Departmental Representative requirements for delivery and storage of extra materials.

**1.8 DELIVERY, STORAGE AND HANDLING**

- .1 Packing, Shipping, Handling and Unloading:
  - .1 Pack, ship, handle and unload materials in accordance with Section 01 61 00 - Common Product Requirements and manufacturer's written instructions.
- .2 Acceptance at Site:
  - .1 Identify products and materials with labels indicating:
    - .1 Manufacturer's name and address.
    - .2 Type of paint or coating.
    - .3 Compliance with applicable standard.
    - .4 Colour number in accordance with established colour schedule.
- .3 Remove damaged, opened and rejected materials from site.
- .4 Storage and Protection:
  - .1 Provide and maintain dry, temperature controlled, secure storage.
  - .2 Store materials and supplies away from heat generating devices.
  - .3 Store materials and equipment in well-ventilated area with temperature range 7 degrees C to 30 degrees C.
- .5 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .6 Keep areas used for storage, cleaning and preparation clean and orderly. After completion of operations, return areas to clean condition.
- .7 Remove paint materials from storage only in quantities required for same day use.
- .8 Fire Safety Requirements:
  - .1 Provide one Type ABC fire extinguisher adjacent to storage area.
  - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
  - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.
- .9 Waste Management and Disposal:
  - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
  - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
  - .3 Collect and separate for disposal paper, plastic, polystyrene corrugated cardboard and

- packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).
- .4 Separate for recycling and place in designated containers Steel, Metal, Plastic waste in accordance with Waste Management Plan (WMP).
  - .5 Place materials defined as hazardous or toxic in designated containers.
  - .6 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal, regulations.
  - .7 Ensure emptied containers are sealed and stored safely.
  - .8 Unused paint, coating materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
  - .9 Paint, stain and wood preservative finishes and related materials (thinners and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
  - .10 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
  - .11 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
  - .12 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
    - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
    - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
    - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
    - .4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
    - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).
  - .13 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
  - .14 Set aside and protect surplus and uncontaminated finish materials. Deliver to or arrange collection by organizations for verifiable re-use or re-manufacturing.

#### 1.9 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
  - .1 Provide heating facilities to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
  - .4 Provide temporary ventilating and heating equipment where permanent facilities are not available or supplemental ventilating and heating equipment if ventilation and heating from existing system is inadequate to meet minimum requirements.
  - .5 Provide minimum lighting level of 323 Lux on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
  - .1 Unless pre-approved written approval by Paint Inspection Agency Authority and product manufacturer, perform no painting when:
    - .1 Ambient air and substrate temperatures are below 10 degrees C.
    - .2 Substrate temperature is above 32 degrees C unless paint is specifically

- formulated for application at high temperatures.
- .3 Substrate and ambient air temperatures are not expected to fall within MPI or paint manufacturer's prescribed limits.
- .4 The relative humidity is under 85% or when the dew point is more than 3 degrees C variance between the air/surface temperature. Paint should not be applied if the dew point is less than 3 degrees C below the ambient or surface temperature. Use sling psychrometer to establish the relative humidity before beginning paint work.
- .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
- .6 Ensure that conditions are within specified limits during drying or curing process, until newly applied coating can itself withstand 'normal' adverse environmental factors.
- .2 Perform painting work when maximum moisture content of the substrate is below:
  - .1 Allow new concrete and masonry to cure minimum of 28 days.
  - .2 15% for wood.
  - .3 12% for plaster and gypsum board.
- .3 Test for moisture using calibrated electronic Moisture Meter. Test concrete floors for moisture using "cover patch test".
- .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
  - .3 Apply paint when previous coat of paint is dry or adequately cured.
- .4 Additional interior application requirements:
  - .1 Apply paint finishes when temperature at location of installation can be satisfactorily maintained within manufacturer's recommendations.
  - .2 Apply paint in occupied facilities during silent hours only. Schedule operations to approval of Departmental Representative such that painted surfaces will have dried and cured sufficiently before occupants are affected.

#### 1.10 GUARANTEE

- .1 Furnish a 100% two (2) year Maintenance Bond.
- .2 Painting and decorating Subcontractors providing a Maintenance Bond shall provide a maintenance bond consent from a reputable surety company licensed to do business in Canada. Cash or certified cheque are not acceptable in lieu of surety consent.

#### 2.0 PRODUCTS

##### 2.1 MATERIALS

- .1 Paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Provide paint materials for paint systems from single manufacturer.
- .3 Only qualified products with E2 "Environmentally Friendly" rating are acceptable for use on this project.

- .4 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .5 Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) in accordance with MPI Architectural Painting Specification Manual "Approved Product" listing.
- .6 Linseed oil, shellac, and turpentine: highest quality product from approved manufacturer listed in MPI Architectural Painting Specification Manual, compatible with other coating materials as required.
- .7 Provide paint products meeting MPI "Environmentally Friendly" E2 ratings based on VOC (EPA Method 24) content levels.
- .8 Use MPI listed materials having minimum E2 rating where indoor air quality (odour) requirements exist.
- .9 Paints, coatings, adhesives, solvents, cleaners, lubricants, and other fluids:
  - .1 Water-based.
  - .2 Non-flammable.
  - .3 Manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
  - .4 Manufactured without compounds which contribute to smog in the lower atmosphere.
  - .5 Do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
- .10 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .11 Flash point: 61.0 degrees C or greater for water-borne surface coatings and recycled water-borne surface coatings.
- .12 Ensure manufacture and process of both water-borne surface coatings and recycled water-borne surface coatings does not release:
  - .1 Matter in undiluted production plant effluent generating 'Biochemical Oxygen Demand' (BOD) in excess of 15 mg/L to natural watercourse or sewage treatment facility lacking secondary treatment.
  - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
- .13 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.
- .14 Recycled water-borne surface coatings must not contain:
  - .1 Lead in excess of 600.0 ppm weight/weight total solids.
  - .2 Mercury in excess of 50.0ppm weight/weight total product.
  - .3 Cadmium in excess of 1.0ppm weight/weight total product.
  - .4 Hexavalent chromium in excess of 3.0 ppm weight/weight total product.
  - .5 Organochlorines or polychlorinated biphenyls (PCBS) in excess of 1.0 ppm weight/weight total product.

## 2.2 COLOURS

- .1 Refer to Interior Finish Material and Colour Schedule, Section 09 06 00 Finish Schedule and drawings for identification and location of colours.



- .2 Interior Finish Material and Colour Schedule:
  - .1 This schedule will be issued as a separate document and may list specific manufacturers related to patterns and colours upon which the colour scheme for the project is based.
  - .2 The following material specifications, which are prescriptive in nature, are presented in order to establish a quality of product upon which a price can be tendered.
  - .3 The Departmental Representative will consider substitute Products which meet or exceed the properties of the specified Product and are similar in material, construction, thickness, colour, texture, and overall quality, provided that proposals are submitted to the Departmental Representative complete with samples and whatever other data the Departmental Representative may require in order to evaluate the proposed substitute Product. If the Departmental Representative approves the proposed substitute Product, the Contractor will have the option
- .3 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

### 2.3 MIXING AND TINTING

- .1 Perform colour tinting operations prior to delivery of paint to site. Obtain written approval from Departmental Representative for tinting of painting materials.
- .2 Mix paste, powder or catalyzed paint mixes in accordance with manufacturer's written instructions.
- .3 Use and add thinner in accordance with paint manufacturer's recommendations. Do not use kerosene or similar organic solvents to thin water-based paints.
- .4 Thin paint for spraying in accordance with paint manufacturer's instructions.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

### 2.4 GLOSS/SHEEN RATINGS

- .1 Paint gloss is defined as sheen rating of applied paint, in accordance with following values:

	Gloss @ 60 degrees	Sheen @ 85 degrees
Gloss Level 1 Matte	Max.5	Max.10
Finish (flat) Gloss Level 2 -Velvet-Like Finish	Max.10	10 to 35
Gloss Level 3 -Eggshell Finish	10 to 25	10 to 35
Gloss Level 4 -Satin-Like Finish	20 to 35	Min.35
Gloss Level 5 -Traditional Semi-Gloss Finish	35 to 70	
Gloss Level 7 -High Gloss Finish	More than 85	

- .2 Gloss level ratings of painted surfaces as indicated.

**2.5 PAINTING SYSTEMS –NEW CONSTRUCTION**

- .1 Metal Fabrications: steel
  - .1 INT 5.1B – Waterborne light industrial gloss level 3 coating.
- .2 Steel – high heat: ( boilers, furnaces, heat exchangers, breeching, pipes, flues ,stacks, etc.' with temperature range as noted):
  - .1 INT 5.2C – Inorganic zinc rich coating, maximum 400 degrees C.
- .3 Dresser lumber: doors, casings, mouldings:
  - .1 INT 6.3A – High performance architectural latex gloss level 3 finish.
- .4 Plaster and gypsum board: gypsum wallboard, drywall, “sheet rock type material”, and textured finishes:
  - .1 INT 9.2A – Latex gloss level 3 finish (over latex sealer) for wall typical, gloss level 3 for ceiling.
- .5 **Spray Textured Surfaces (ceilings):**
  - .1 **INT 9.1B Latex gloss level 1 finish (over alkyd sealer).**

**2.6 INTERIOR REPAINTING SYSTEM – EXISTING CONSTRUCTION**

- .1 Structural Steel and Metal Fabrications:
  - .1 RIN 5.1B Waterbourne light industrial gloss level 3 coating.
- .2 Galvanized Metal: doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.
  - .1 RIN 5.3B Waterbourne light industrial gloss level 4 coating.
- .3 Plaster and Gypsum Board Surfaces: gypsum wallboard, drywall, “sheet rock type material”:, etc.
  - .1 RIN 9.2A Latex, gloss level 3 finish for wall typical, gloss level 1 finish for ceiling typical.
- .4 Dresser lumber: doors, casings, mouldings:
  - .1 RIN 6.3T – High performance architectural latex gloss level 3 finish.
- .5 **Spray Textured Surfaces (ceilings):**
  - .1 **RIN 9.1A Latex flat finish. (over stain-blocking primer).**

**2.7 SOURCE QUALITY CONTROL**

- .1 Perform following tests on each batch of consolidated post-consumer material before surface coating is reformulated and canned. Testing by laboratory or facility which has been accredited by Standards Council of Canada.
  - .1 Lead, cadmium and chromium are to be determined using ICP-AES (Inductively Coupled Plasma - Atomic Emission Spectroscopy) technique no. 6010 as defined in EPA SW-846.
  - .2 Mercury is to be determined by Cold Vapour Atomic Absorption Spectroscopy using Technique no. 7471 as defined in EPA SW-846.
  - .3 Organochlorines and PCBs are to be determined by Gas Chromatography using Technique no. 8081 as defined in EPA SW-846.

**3.0 EXECUTION**

**3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and data sheet.

### 3.2 GENERAL

- .1 Perform preparation and operations for interior painting in accordance with MPI Architectural Painting Specifications Manual except where specified otherwise.
- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

### 3.3 EXAMINATION

- .1 Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Departmental Representative damages, defects, unsatisfactory or unfavourable conditions before proceeding with work.
- .2 Conduct moisture testing of surfaces to be painted using properly calibrated electronic moisture meter, except test concrete floors for moisture using simple "cover patch test". Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
- .3 Maximum moisture content as follows:
  - .1 Stucco, plaster and gypsum board: 12%.
  - .2 Wood: 15%.

### 3.4 PREPARATION

- .1 Protection:
  - .1 Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage by suitable non-staining covers or masking. If damaged, clean and restore surfaces as directed by Departmental Representative.
  - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
  - .3 Protect factory finished products and equipment.
  - .4 Protect passing pedestrians, building occupants and general public in and about the building.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
  - .1 Remove dust, dirt, and other surface debris by wiping with dry, clean cloths or compressed air.
  - .2 Wash surfaces with a biodegradable detergent and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
  - .3 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
  - .4 Allow surfaces to drain completely and allow to dry thoroughly.
  - .5 Prepare surfaces for water-based painting, water-based cleaners should be used in place of organic solvents.
  - .6 Use trigger operated spray nozzles for water hoses.
  - .7 Many water-based paints cannot be removed with water once dried. Minimize use of mineral spirits or organic solvents to clean up water-based paints.

- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before prime coat is applied and between applications of remaining coats. Apply primer, paint, or pretreatment as soon as possible after cleaning and before deterioration occurs.
- .5 Where possible, prime non-exposed surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
  - .1 Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
  - .2 Apply wood filler to nail holes and cracks.
  - .3 Tint filler to match stains for stained woodwork.
- .6 Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
- .7 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes or vacuum cleaning.
- .8 Touch up of shop primers with primer as specified.
- .9 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.

### 3.5 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush, roller, air or airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
- .2 Brush and Roller Application:
  - .1 Apply paint in uniform layer using brush and/or roller type suitable for application.
  - .2 Work paint into cracks, crevices and corners.
  - .3 Paint surfaces and corners not accessible to brush using spray daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
  - .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces free of roller tracking and heavy stipple.
  - .5 Remove runs, sags and brush marks from finished work and repaint.
- .3 Spray application:
  - .1 Provide and maintain equipment that is suitable for intended purpose, capable of atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
  - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
  - .3 Apply paint in uniform layer, with overlapping at edges of spray pattern. Back roll first coat application.
  - .4 Brush out immediately all runs and sags.
  - .5 Use brushes and rollers to work paint into cracks, crevices and places which are not adequately painted by spray.
- .4 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.

- .5 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .6 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .7 Sand and dust between coats to remove visible defects.
- .8 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .9 Finish closets and alcoves as specified for adjoining rooms.
- .10 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

### 3.6 MECHANICAL/ELECTRICAL EQUIPMENT

- .1 Paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated.
- .2 Boiler room, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.
- .3 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .5 Do not paint over nameplates.
- .6 Keep sprinkler heads free of paint.
- .7 Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
- .8 Paint fire protection piping red.
- .9 Paint disconnect switches for fire alarm system and exit light systems in red enamel.
- .10 Paint natural gas piping yellow.
- .11 Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.
- .12 Do not paint interior transformers and substation equipment.

### 3.7 SITE TOLERANCES

- .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
- .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting

source.

- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

### 3.8 FIELD QUALITY CONTROL

- .1 Interior painting and decorating work shall be inspected by a Paint Inspection Agency (inspector) acceptable to the specifying authority and local Painting Contractor's Association. Painting contractor shall notify Paint Inspection Agency a minimum of one week prior to commencement of work and provide a copy of project painting specification, plans and elevation drawings (including pertinent details) as well as a Finish Schedule.
- .2 Interior surfaces requiring painting shall be inspected by Paint Inspection Agency who shall notify Departmental Representative and General Contractor in writing of defects or problems, prior to commencing painting work, or after prime coat shows defects in substrate.
- .3 Where "special" painting, coating or decorating system applications (i.e. elastomeric coatings) or non-MPI listed products or systems are to be used, paint or coating manufacturer shall provide as part of this work, certification of surfaces and conditions for specific paint or coating system application as well as on site supervision, inspection and approval of their paint or coating system application as required at no additional cost to Departmental Representative.
- .4 Standard of Acceptance:  
.1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.  
.2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.  
.3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.
- .5 Field inspection of painting operations to be carried out by independent inspection firm as designated by Departmental Representative.
- .6 Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
- .7 Cooperate with inspection firm and provide access to areas of work.
- .8 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.

### 3.9 RESTORATION

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashing on exposed surfaces that were not painted. Remove smears and patters immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

### 3.10 PAINT COLOUR SCHEDULE

- .1 All interior wall, ceiling, doors and frames, wood base and other areas required painting to be field paint PT.
- .2 Refer to Interior Finish Material and Finish Schedule for colors selection.

END OF SECTION 09 91 23