

**HEALTH CANADA
LCDC BUILDING
SPACE OPTIMIZATION PROJECT
H.C. PROJECT NO. 171681**

**SPECIFICATION
Issued for Tender**

Prepared by:



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PROJECT TITLE: LCDC Building Space Otimization Project

PROJECT LOCATION: Tunney's Pasture, Ottawa, Ontario

PROJECT NUMBER: 171681

DATE: July, 2013

INTERIOR DESIGNER	Hay Design Inc.	
ARCHITECT	Not Applicable	
MECHANICAL ENGINEER	Not Applicable	
ELECTRICAL ENGINEER	Not Applicable	

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PART 1 GENERAL1.1 TAXES

- .1 Pay all taxes properly levied by law (including Federal, Provincial and Municipal).

1.2 FEES, PERMITS and CERTIFICATES

- .1 Pay all fees and obtain all permits. Provide authorities with plans and information for acceptance certificates. Provide inspection certificates as evidence that work conforms to requirements of Authority having jurisdiction.

1.3 CONSTRUCTION PROGRESS SCHEDULE

- .1 Schedule and execute work with least possible interference or disturbance to the normal use of premises and as follows:
 - .1 Schedule work as directed by the Departmental Representative
- .2 On award of Contract submit bar chart construction schedule for work, indicating anticipated progress stages within time of completion. When the Departmental Representative has reviewed schedule, take necessary measures to complete work within scheduled time. Do not change schedule without notifying Departmental Representative.
- .3 Carry out work during "regular hour", Monday to Friday from 07:00 to 18:00 hours and on Saturdays, Sundays and Statutory holidays.
- .4 Carry out the following work during "off hours" Monday to Friday from 18:00 to 07:00 hours and on Saturdays, Sundays, and statutory holidays:
 - .1 Flooring Installation.
 - .2 Painting
- .5 Give the Departmental Representative 48 hours notice for work to be carried out during "off hours".

1.4 SUBMITTAL PROCEDURES

- .1 Submit promptly to Departmental Representative submittals listed for review, in orderly sequence to not cause delay in work.

- .2 Do not proceed with work affected by submittals until review is complete.
- .3 Shop Drawings:
 - .1 Submit three (3) copies of shop drawings
 - .2 The review is for the sole purpose of ascertaining conformance with the general design concept, and does not mean approval of the design details inherent in the shop drawings, responsibility for which shall remain with the Contractor. Such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents.
- .4 Product Data:
 - .1 Submit three (3) copies of product data: Manufacturers catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products.
 - .2 Cross reference product data information to applicable portions on Contract Documents.
- .5 Samples:
 - .1 Submit samples: examples of materials, equipment, quality, finishes and workmanship.
 - .2 Where colour, pattern or texture is criterion, submit full range of samples.
 - .3 Reviewed and accepted samples will become standard of material and workmanship, against which installed work will be verified.
- .6 Submit photographs of surrounding properties, objects and structures liable to be damaged or be the subject of subsequent claims

1.5 REGULATORY REQUIREMENTS

- .1 References and Codes:
 - .1 Materials shall be new and work shall conform to the minimum applicable standards of the "References" indicated in the specification sections, the National Building Code of Canada 2010 (NBC) and all applicable Provincial and Municipal codes. In the case of conflict or discrepancy the most stringent requirement shall apply.

- .2 Building Smoking Environment:
 - .1 Smoking is not permitted in the Building. Obey smoking restrictions on building property.
- .3 Hazardous Material Discovery:
 - .1 Stop work immediately when material resembling spray or trowel-applied asbestos, Polychlorinated Biphenyl (PCB), mould or other hazardous substance is encountered during demolition work.
 - .1 Take preventative measure and promptly notify Departmental Representative.
 - .2 Do not proceed until written instructions have been received from Departmental Representative.

1.6 FIRE SAFETY REQUIREMENTS

- .1 Comply with both the National Building Code of Canada 2010 and the National Fire Code of Canada 2010 for safety of persons in buildings in the event of a fire and the protection of buildings from the effects of fire, as follows;
 - .1 The National Building Code (NBC): for fire safety and fire protection features that are required to be incorporated in a building during construction.
 - .2 The National Fire Code (NFC):
 - .1 The on-going maintenance and use of the fire safety and fire protection features incorporated in buildings.
 - .2 The conduct of activities that might cause fire hazards in and around buildings.
 - .3 Limitations on hazardous contents in and around buildings.
 - .4 The establishment of fire safety plans.
 - .5 Fire safety at construction and demolition sites.
- .2 Comply with Human Resources and Skills Development Canada (HRSDC), Fire Commissioner of Canada Standards:
 - .1 FC 301, Standard for Construction Operations, June 1982 - Standards
 - .2 FC 302, Standard for Welding and Cutting, June 1982 - Standards
 - .3 FC 374, Fire Protection Standard for General Storage (Indoor and Outdoor), September 1994 - Standards

- .4 Retain all fire safety documents and standards on site.
- .3 Welding and cutting:
 - .1 At least 48 hours prior to commencing cutting, welding or soldering procedure, provide to Departmental Representative:
 - .1 Notice of intent, indicating devices affected, time and duration of isolation or bypass.
 - .2 Completed welding permit as defined in FC 302.
 - .3 Return welding permit to Departmental Representative immediately upon completion of procedures for which permit was issued.
 - .2 "Fire Watchers" as described in FC 302 shall be assigned when welding or cutting operations are carried out in areas where combustible materials within 10m may be ignited by conduction or radiation.
- .4 Where work requires interruption or cause activation of fire alarms or fire suppression, extinguishing or protection systems:
 - .1 Provide "Watchman Service" as described in FC 301; In general, watchman service is defined as an individual conversant with "Fire Emergency Procedures", performing fire picket duty within an unprotected and unoccupied (no workers) area once per hour.
 - .2 Retain services of Manufacturer for fire protection systems on daily basis or as approved by Departmental Representative, to isolate and protect all devices relating to:
 - .1 modification of fire alarms, fire suppression, extinguishing or protection systems; and/or
 - .2 cutting, welding, soldering or other construction activities that might activate fire protection systems.
 - .3 Immediately upon completion of work, restore fire protection systems to normal operation and verify that all devices are fully operational.
 - .4 Inform fire alarm system Monitoring Agency and local Fire Department immediately prior to isolation and immediately upon restoration of normal operation.

1.7 QUALITY CONTROL

- .1 Testing Laboratory Services:
 - .1 Departmental Representative will appoint and pay for costs of inspection and testing services, unless indicated otherwise.
 - .2 Provide safe working areas and assist with testing procedures, including provisions for materials or services and co-ordination, as required by testing agency and as authorized by Departmental Representative.
 - .4 Where tests indicate non-compliance with specifications, contractor to pay for initial test and all subsequent testing of work to verify acceptability of corrected work.

1.8 HAZARDOUS MATERIALS

- .1 Hazardous Materials: product, substance, or organism that may cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .2 Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and the provision of Material Safety Data Sheets (MSDS) acceptable to Human Resources and Skills Development Canada (HRSDC), Labour Program.
- .3 For work in occupied buildings, give the Department Representative 48 hours notice for work involving hazardous substances (Canada Labour Code Part II Section 10), and before painting, caulking, installing tile floor or using adhesives and other materials, that cause off gassing.

1.9 TEMPORARY UTILITIES

- .1 Existing services required for work, may be used by the Contractor without charge. Ensure capacity is adequate prior to imposing additional loads. Connect and disconnect at own expense and responsibility.
- .2 Notify the Departmental Representative and utility companies of intended interruption of services and obtain requisite permission.

- .3 Give the Departmental Representative 48 hours notice related to each necessary interruption of any mechanical or electrical service throughout the course of the work. Keep duration of these interruptions to a minimum. Carry out all interruptions after normal working hours of the occupants, preferably on weekends.

1.10 CONSTRUCTION FACILITIES

- .1 Designated elevators: to be used by construction personnel and transporting of materials.
 - .1 Co-ordinate with Departmental Representative.
 - .2 Protect from damage, safety hazards and overloading of existing equipment.
- .2 Site Storage:
 - .1 Do not unreasonably encumber site with materials or equipment.
 - .2 Move stored products or equipment that interfere with operations of Departmental Representative or other contractors.
 - .3 Obtain and pay for use of additional storage or work areas needed for operations.
 - .4 Do not load or permit to load any part of work with weight or force that will endanger work.
- .3 Where security is reduced by work provide temporary means to maintain security.
- .4 Sanitary facilities: will be assigned for Contractor's personnel. Others shall not be used. Keep facilities clean.
- .5 Signage:
 - .1 Provide common-use signs related to traffic control, information, instruction, use of equipment, public safety devices, etcetera, in both official languages or by the use of commonly understood graphic symbols and to approval of the Departmental Representative.
 - .2 No advertising will be permitted on this Project.

- .3 Maintain approved signs and notices in good condition for duration of project and dispose of off site, on completion of project or earlier, as directed by Departmental Representative.

1.11 TEMPORARY BARRIERS AND ENCLOSURES

- .1 Maintain existing services to building and provide for personnel and vehicle access.
- .2 Hoarding:
 - .1 Design, erect and maintain temporary site enclosure as required by authority having jurisdiction.
- .3 Dust Control:
 - .1 Provide dust tight screens or partitions to localize dust-generating activities, and for protection of workers, finished areas of work and public.
 - .2 Maintain and relocate protection until such work is complete.
- .4 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.
- .5 Protection:
 - .1 Protect work against damage until take-over.
 - .2 Protect adjacent work against the spread of dust and dirt beyond the work areas.
 - .3 Protect operatives and other users of site from all hazards.

1.12 COMMON PRODUCT REQUIREMENTS

- .1 Quality of Work:
 - .1 Carry out work using qualified licenced workers or apprentices in accordance with Provincial Act respecting manpower vocational training and qualification.
 - .2 Permit employees registered in Provincial apprenticeship program to perform specific tasks only if under direct supervision of qualified licensed workers.

- .3 Determine permitted activities and tasks by apprentices, based on level of training attended and demonstration of ability to perform specific duties.
- .2 Storage, Handling and Protection:
 - .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions.
 - .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove packaging or bundling until required in work.
- .3 Manufacturer's Instructions: unless otherwise indicated in specifications, install or erect products in accordance with Manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from Manufacturers

1.13 EXAMINATION and PREPARATION

- .1 Examine site and conditions likely to affect work and be familiar and conversant with existing conditions.
- .2 Before commencing work, establish location and extent of services lines in area of work and notify Departmental Representative of findings.

1.14 EXECUTION

- .1 Cut, Patch and Make Good:
 - .1 Cut existing surfaces as required to accommodate new work.
 - .2 Remove all items so shown or specified.
 - .3 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture.
- .2 Sleeves, Hangers and Inserts: co-ordinate setting and packing of sleeves and supply and installation of hangers and inserts. Obtain Departmental Representative's approval before cutting into structure.
- .3 Unless otherwise specified, materials for removal become the Contractor's property and shall be taken from site.

1.15 CLOSEOUT SUBMITTALS

.1 Operational and Maintenance Manuals:

- .1 Two (2) weeks prior to any scheduled training, submit to Departmental Representative three (3) copies of approved Operations Data and Maintenance Manual in both official languages, compiled as follows:
 - .1 Bind data in vinyl hard cover 3 "D" ring type loose-leaf binders for 212 x 275|mm size paper. Binders must not exceed 75|mm thick or be more than 2/3 full.
 - .2 Enclose title sheet labelled "Operation Data and Maintenance Manual," project name, date and list of contents. Project name must appear on binder face and spine.
 - .3 Organize contents into applicable sections of work to parallel project specifications breakdown. Mark each section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .2 Include following information plus data specified:
 - .1 Maintenance instruction for finished surface and materials.
 - .2 Copy of hardware and paint schedules.
 - .3 Description: operation of the equipment and systems defining start-up, shut-down and emergency procedures, and any fixed or adjustable set points that affect the efficiency of the operation. Include nameplate information such as make, size, capacity and serial number.
 - .4 Maintenance: use clear drawings, diagrams or manufacturers' literature which specifically apply and detail the following:
 - .1 lubrication products and schedules;
 - .2 trouble shooting procedures;
 - .3 adjustment techniques; and
 - .4 operational checks.
 - .5 Suppliers' names, addresses and telephone numbers and components supplied by them must be included in this section. Components must be identified by a description and Manufacturers part number
- .6 Guarantees showing:

GENERAL INSTRUCTIONS

- .1 name and address of projects;
 - .2 guarantee commencement date (date of Interim Certificate of Completion);
 - .3 duration of guarantee;
 - .4 clear indication of what is being guaranteed and what remedial action will be taken under guarantee; and
 - .5 signature and seal of Guarantor.
 - .7 Additional material used in project listed under various Sections showing name of Manufacturer and source of supply.
- .3 Spare parts: list all recommended spares to be maintained on site to ensure optimum efficiency. List all special tools appropriate to unique application. All parts/tools detailed must be identified as to Manufacturer, Manufacturer part number and Supplier (including address).
 - .4 Include one complete set of final shop drawings (bound separately) indicating corrections and changes made during fabrication and installation.
- .2 Records:
 - .1 As work progresses, maintain accurate records to show deviations from contract drawings. Just prior to Departmental Representative's inspection for issuance of final certificate of completion, supply to the Departmental Representative one (1) set of white prints with all deviations neatly inked in. The Departmental Representative will provide two sets of clean white prints for this purpose.
 - .3 Guarantees and Warranties:
 - .1 Before completion of work collect all Manufacturer's guarantees or warranties and deposit with Departmental Representative.

1.16 CLEANING

- .1 Clean up as work progresses. At the end of each work period, and more often if ordered by the Departmental Representative, remove debris from site, neatly stack material for use, and clean up generally.

- .2 Upon completion remove scaffolding, temporary protection and surplus materials. Make good defects noted at this stage.
- .3 Clean and polish glass, mirrors, ceramic tile, aluminium, chrome, stainless steel, baked or porcelain enamel, plastic laminate and other plastic surfaces, floors, hardware and washroom fixtures. Clean manufactured articles in accordance with the Manufacturer's written instructions.
- .4 Clean areas under contract to a condition equal to what previously existed and to approval of Departmental Representative.

1.17 SECURITY CHECK

- .1 The Company will be checked that they are cleared. If an Employee is not they will be escorted during and after hours.
- .2 Personnel will be checked daily at start of work shift and given a pass, which must be worn at all times. Pass must be returned at end of work shift and personnel checked out.

1.18 SECURITY ESCORT

- .1 All personnel employed on this Project shall be escorted when executing work in non-public areas during normal working hours. Personnel shall be escorted in all areas after normal working hours.
- .2 Submit an Escort request to Departmental Representative at least three (3) days before the service is needed. For requests submitted within the time mentioned above, the Departmental Representative will pay for the costs of the Security Escort. The cost incurred by a late request will be charged to the Contractor.
- .3 Any escort request may be cancelled free of charge if notification of cancellation is given at least 24 hours before the scheduled time of the Escort. The cost incurred by a late cancellation will be charged to the Contractor.

- .4 The calculation of costs will be based on the average hourly rate of a Security Officer for a minimum of 8 hours per day for a late service request and 4 hours for late cancellations.

1.19 COST BREAKDOWN

- .1 Before submitting first progress claim, submit breakdown of Contract Amount in detail as directed by Departmental Representative and aggregating the Contract Amount. After approval by Departmental Representative cost breakdown will be used as the basis of progress payments.

1.20 PRECEDENCE

- .1 For Federal Government Projects, Division 01 Sections take precedence over technical specification sections in other Divisions of this Project Manual

PART 2 PRODUCTS

1.2 NOT USED

PART 3 EXECUTION

3.1 NOT USED

END OF SECTION

PART 1 GENERAL1.1 SECTIONS INCLUDES:

- .1 Health and safety considerations required to ensure that Health Canada shows due diligence towards health and safety on construction sites, and meets the requirements laid out in PWGSC/RPB Departmental Policy DP 073 - Occupational Health and Safety - Construction.

1.2 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .3 Province of Ontario
 - .1 Occupational Health and Safety Act, R.S.O. 1990 Updated 2005.

1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 00 10 - General Instructions
- .2 Submit site-specific Health and Safety Plan: Within 7 days after date of Notice to Proceed and prior to commencement of Work. Health and Safety Plan must include:
 - .1 Results of site specific safety hazard assessment.
 - .2 Results of safety and health risk or hazard analysis for site tasks and operation
- .3 Submit 2 copies of Contractor's authorized representative's work site health and Safety Inspection Reports to authority having jurisdiction, weekly.
- .4 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.
- .5 Submit copies of incident and accident reports.
- .6 Submit WHMIS MSDS - Material Safety Data Sheets.

- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 3 days after receipt of plan. Revise plan as appropriate and resubmit plan to Departmental Representative within 3 days after receipt of comments from Departmental Representative
- .8 Departmental Representative's review of Contractor's final Health and Safety plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety.
- .9 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.

1.4 FILING OF NOTICE.

- .1 File Notice of Project with Provincial authorities prior to beginning of Work.

1.5 SAFETY ASSESSMENT

- .1 Perform site specific safety hazard assessment related to project.

1.6 MEETINGS

- .1 Schedule and administer Health and Safety meeting with Departmental Representative to commencement of Work.

1.7 PROJECT/SITE CONDITIONS..

- .1 Work at site will involve contact with:
 - .1 Departmental Representative

1.8 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan based on hazard assessment prior to beginning site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Departmental Representative may respond in writing, where deficiencies or concerns are noted and may request re-submission with correction of deficiencies or concerns.

1.9 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.10 COMPLIANCE REQUIREMENTS .

- .1 Comply with Ontario Health and Safety Act, R.S.O.
- .2 Comply with Occupational Health and Safety Regulations, 1996.
- .3 Comply with Occupational Health and Safety Act, General Safety Regulations, O.I.C. 2004-14.
- .4 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations.

1.11 UNFORSEEN HAZARDS

- .1 When unforeseen or peculiar safety-related factor, hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.12 HEALTH AND SAFETY CO-ORDINATOR.

- .1 Employ and assign to Work, competent and authorized representative as Health and Safety Co-ordinator.
Health and Safety Co-ordinator must:
 - .1 Have working knowledge of occupational safety and health regulations.
 - .2 Be responsible for implementing, enforcing daily and monitoring site-specific Contractor's Health and Safety Plan.

1.13 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction, and in consultation with Departmental Representative.

1.14 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative may stop Work if non-compliance of health and safety regulations is not corrected.

1.15 BLASTING

- .1 Blasting or other use of explosives is not permitted.

1.16 POWDER ACTUATED DEVICES

- .1 Use powder actuated devices only after receipt of written permission from Departmental Representative
- .2 Submit written request to the Departmental Representative 48 hours prior to work taking place

1.17 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.

PART 2 PRODUCTS

2.1 NOT USED

- .1 Not used.

PART 3 EXECUTION

3.1 NOT USED

.1 Not used.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-2008, Stipulated Price Contract.

1.2 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative shall pay cost of examination and replacement.

1.3 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective Products or damage and whether incorporated in Work or not, which has been rejected by Departmental as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

END OF SECTION

PART 1 - GENERAL

1.1 WASTE
MANAGEMENT GOALS

- .1 Prior to start of Work conduct meeting with Departmental Representative to review and discuss Waste Management Plan and Goals.
- .2 The Waste Management Goal 75 percent of total Project Waste to be diverted from landfill sites. Provide Departmental Representative documentation certifying that waste management, recycling, reuse of recyclable and reusable materials have been extensively practiced.
- .3 Accomplish maximum control of solid construction waste.
- .4 Preserve environment and prevent pollution and environment damage.

1.2 REFERENCES

- .1 LEED Canadian Green Building Council (CGBC), Green Building Rating System, For New Construction and Major Renovations LEED Canada-NC, Version 1.0 - December 2004.

1.3 DEFINITIONS

- .1 Class III: non-hazardous waste - construction renovation and demolition waste.
- .2 Inert Fill: inert waste - exclusively asphalt and concrete.
- .3 Materials Source Separation Program (MSSP): consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .4 Recyclable: ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse.

- .5 Recycle: process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .6 Recycling: process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .7 Reuse: repeated use of product in same form but not necessarily for same purpose.
Reuse includes:
 - .1 Salvaging reusable materials from re-modeling projects, before demolition stage, for resale, reuse on current project or for storage for use on future projects.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .8 Salvage: removal of structural and non-structural materials from deconstruction/disassembly projects for purpose of reuse or recycling.
- .9 Separate Condition: refers to waste sorted into individual types.
- .10 Source Separation: acts of keeping different types of waste materials separate beginning from first time they became waste.

1.5 SUBMITTALS

- .1 Submit before final payment summary of waste materials salvaged for reuse, recycling or disposal by project using deconstruction/disassembly material audit form.
 - .1 Failure to submit could result in hold back of final payment.
 - .2 Provide receipts, scale tickets, waybills, and show quantities and types of materials reused, recycled, co-mingled and separated off-site or disposed of.
 - .3 For each material reused, sold or recycled from project, include amount in quantities by number, type and size of items and the destination.
 - .4 For each material land filled or incinerated from project, include amount in tonnes of material and identity of landfill, incinerator or transfer station.

1.6 MATERIALS
SOURCE SEPARATION
PROGRAM (MSSP)

- .1 Prepare MSSP and have ready for use prior to project start-up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Departmental Representative.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated materials in areas which minimize material damage.

- .7 Collect, handle, store on-site, and transport off-site, salvaged materials in separate condition.
 - .1 Transport to approved and authorized recycling facility.
- .8 Collect, handle, store on-site, and transport off-site, salvaged materials in combined condition.
 - .1 Ship materials to site operating under Certificate of Approval.
 - .2 Materials must be immediately separated into required categories for reuse or recycling.

1.7 STORAGE,
HANDLING AND
PROTECTION

- .1 Store, materials to be reused, recycled and salvaged in locations as directed by Departmental Representative.
- .2 Unless specified otherwise, materials for removal do not become Contractor's property.
- .3 Protect surface drainage, mechanical and electrical from damage and blockage.
- .4 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities.
 - .1 On-site source separation is recommended.
 - .2 Remove co-mingled materials to off-site processing facility for separation.
 - .3 Provide waybills for separated materials.

1.8 DISPOSAL OF
WASTES

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of waste into waterways, storm, or sanitary sewers.

- .3 Keep records of construction waste including:
 - .1 Number and size of bins.
 - .2 Waste type of each bin.
 - .3 Total tonnage generated.
 - .4 Tonnage reused or recycled.
 - .5 Reused or recycled waste destination.
 - .4 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- 1.9 USE OF SITE AND FACILITIES
- .1 Execute work with least possible interference or disturbance to normal use of premises.
 - .2 Maintain security measures established by existing facility.
- 1.16 SCHEDULING
- .1 Co-ordinate Work with other activities at site to ensure timely and orderly progress of Work.
- PART 2 - PRODUCTS
- .1 Not Used.
- PART 3 - EXECUTION
- 3.2 APPLICATION
- .1 Handle waste materials not reused, salvaged, or recycled in accordance with appropriate regulations and codes.
- 3.3 CLEANING
- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
 - .2 Clean-up work area as work progresses.
 - .3 Source separate materials to be reused/recycled into specified sort areas.

END OF SECTION

PART 1 - GENERAL

1.1 REFERENCES

- .1 Canadian Standards Association (CSA International)
 - .1 CSA S350-M1980 R2003, Code of Practice for Safety in Demolition of Structures.

1.2 SUBMITTALS

- .1 Prior to beginning of Work on site submit detailed Waste Reduction Workplan in accordance with Sections 01 74 21 - Construction/Demolition Waste Management and Disposal and 01 00 10 - General Instructions and indicate:
 - .1 Descriptions of and anticipated quantities in percentages of materials to be salvaged, reused, recycled and land filled.
 - .2 Schedule of selective demolition.
 - .3 Number and location of dumpsters.
 - .4 Name and address of waste facilities and waste receiving organizations.

1.3 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 01 00 10 - General Instructions.

1.4 SITE CONDITIONS

- .1 Should material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify Departmental Representative immediately.
 - .1 Do not proceed until written instructions have been received from Departmental Representative
- .2 Notify Departmental Representative before disrupting building access or services.

PART 2 - EXECUTION

2.1 PROTECTION

- .1 Keep noise, dust, and inconvenience to occupants to minimum.
- .2 Protect building systems, services and equipment.
- .3 Provide temporary dust screens, covers, railings, supports and other protection as required.
- .4 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Section 09 21 16 - Gypsum Board Assemblies

1.2 REFERENCES

- .1 ASTM International
 - .1 ASTM A123/A123M-09, Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 CSA International
 - .1 CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
 - .2 CSA O121-08, Douglas Fir Plywood.
 - .3 CSA O141-05 (R2009), Softwood Lumber.
 - .4 CSA O325-07, Construction Sheathing.
 - .5 CAN/CSA-Z809-08, Sustainable Forest Management.
- .3 National Lumber Grades Authority (NLGA)
 - .1 Standard Grading Rules for Canadian Lumber 2010

1.3 QUALITY ASSURANCE

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.
- .3 Plywood, OSB and wood based composite panel construction sheathing identification: by grade mark in accordance with applicable CSA standards.

1.4 DELIVERY, STORAGE, AND HANDLING

.1 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.

PART 2 PRODUCTS

2.1 LUMBER MATERIAL

- .1 Lumber: unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards:
 - .1 CSA O141.
 - .2 NLGA Standard Grading Rules for Canadian Lumber.
 - .3 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Furring, blocking, nailing strips, grounds, rough bucks
 - .1 Board sizes: "standard" or better grade.
 - .2 Dimension sizes: "standard" light framing or better grade.

2.2 PANEL MATERIAL

- .1 Douglas fir plywood: to CSA O121, standard construction.
 - .1 Urea-formaldehyde free.
 - .2 CAN/CSA-Z809 or FSC or SFI certified. Canadian softwood plywood (CSP): to CSA O151, standard construction.
 - .3 Urea-formaldehyde free.
 - .4 CAN/CSA-Z809 or FSC or SFI certified.
- .2 Plywood, OSB and wood based composite panels: to CSA O325.
 - .1 Urea-formaldehyde free.
 - .2 CAN/CSA-Z809 or FSC or SFI certified.
 - .3 All plywood to be fire retardant and come to the site labelled

2.3 ACCESSORIES

- .1 Nails, spikes and staples: to CSA B111.
- .2 Bolts: 12.5 mm diameter unless indicated otherwise, complete with nuts and washers.
- .3 Proprietary fasteners: toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, recommended for purpose by Manufacturer.

2.4 FINISHES

- .1 Galvanizing: to ASTM A123/A123M use galvanized fasteners for interior highly humid areas fire-retardant.
- .2 Stainless steel: use stainless steel for exposed fasteners.

2.5 WOOD PRESERVATIVE

- .1 Wood preservatives of any kind are not permitted on this Project

PART 3 EXECUTION

1.2 INSTALLATION

- .1 Comply with requirements of NBC, supplemented by the following paragraphs.
- .2 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.
- .3 Use caution when working with particle board. Use dust collectors and high quality respirator masks.

3.2 ERECTION

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED
SECTIONS

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

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 Canadian Standards Association (CSA International)
 - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .3 Underwriters Laboratories of Canada (ULC)
 - .1 CAN/ULC-S702-1997, Standard for Mineral Fibre Insulation.

1.3 SUBMITTALS

- .1 Product Data:
 - .1 Submit Manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 00 10 - General Instructions.
- .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 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 30 - Health and Safety Requirements.

1.5 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Separate waste materials for 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 packaging material for recycling in accordance with Waste Management Plan.

PART 2 - PRODUCTS

2.1 INSULATION

- .1 Batt and blanket mineral fibre: to ASTM C 665.
 - .1 Type: 1.
 - .2 Minimum 35% recycled content.

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.

PART 3 - 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 sound absorption.
- .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.

3.3 CLEANING

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

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 00 10 - General Instructions
- .2 Section 01 74 21 - Construction/Demolition Waste Management and Disposal

1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-19.13-M87, Sealing Compound, One-component, Elastomeric, Chemical Curing.
 - .2 CGSB 19-GP-14M-1984, Sealing Compound, One Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing (Reaffirmation of April 1976).
 - .3 CAN/CGSB-19.24-M90, Multi-component, Chemical Curing Sealing Compound.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 00 10 - General Instruction.
- .2 Product Data:
 - .1 Manufacturer's product to describe:
 - .1 Caulking compound.
 - .2 Primers.
 - .3 Sealing compound, each type, including compatibility when different sealants are in contact with each other.
- .3 Samples:
 - .1 Submit 2 samples of each type of material and colour.
 - .2 Cured samples of exposed sealants for each colour where required to match adjacent material.
- .4 Manufacturer's Instructions:
 - .1 Submit instructions to include installation instructions for each product used.

1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Operation and Maintenance Data: submit operation and maintenance data for incorporation into manual.

1.5 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 00 10 - General Instructions
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials indoors and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

1.6 SITE CONDITIONS

- .1 Ambient Conditions:
 - .1 Proceed with installation of joint sealants only when:
 - .1 Ambient and substrate temperature conditions are within limits permitted by joint sealant manufacturer or are above 4.4 degrees C.
 - .2 Joint substrates are dry.
- .2 Joint-Width Conditions:
 - .1 Proceed with installation of joint sealants only where joint widths are more than those allowed by joint sealant manufacturer for applications indicated.
- .3 Joint-Substrate Conditions:
 - .1 Proceed with installation of joint sealants only after contaminants capable of interfering with adhesion are removed from joint substrates.

1.7 ENVIRONMENTAL REQUIREMENTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to Health Canada.
- .2 Departmental Representative will arrange for ventilation system to be operated on maximum outdoor air and exhaust during installation of caulking and sealants. Ventilate area of work as directed by Departmental Representative by use of approved portable supply and exhaust fans.

PART 2 PRODUCTS

2.1 SEALANT MATERIALS

- .1 Do not use caulking that emits strong odours, contains toxic chemicals or is not certified as mould resistant in air handling units.
- .2 When low toxicity caulks are not possible, confine usage to areas which off gas to exterior, are contained behind air barriers, or are applied several months before occupancy to maximize off gas time..
- .3 Where sealants are qualified with primers use only these primers.

2.2 SEALANT MATERIAL DESIGNATIONS

- .1 Acoustical sealant: to ASTM C919.2.3

2.3 SEALANT SELECTION

- .1 Seal all openings in new plenum barriers with acoustic sealant as detailed on drawings

2.4 JOINT CLEANER

- .1 Non-corrosive and non-staining type, compatible with joint forming materials and sealant in accordance with sealant manufacturer's written recommendations.
- .2 Primer: in accordance with sealant Manufacturer's written recommendations.

PART 3 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for joint sealants installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.2 SURFACE PREPARATION

- .1 Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealants.
- .2 Clean bonding joint surfaces of harmful matter substances including dust, rust, oil grease, and other matter which may impair Work.
- .3 Do not apply sealants to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.
- .4 Ensure joint surfaces are dry and frost free.
- .5 Prepare surfaces in accordance with manufacturer's directions.

3.3 PRIMING

- .1 Where necessary to prevent staining, mask adjacent surfaces prior to priming and caulking.
- .2 Prime sides of joints in accordance with sealant Manufacturer's instructions immediately prior to caulking.

3.4 BACKUP MATERIAL

- .1 Apply bond breaker tape where required to Manufacturer's instructions.
- .2 Install joint filler to achieve correct joint depth and shape, with approximately 30% compression.

3.5 MIXING

- .1 Mix materials in strict accordance with sealant Manufacturer's instructions.

3.6 APPLICATION

- .1 Sealant:
 - .1 Apply sealant in accordance with Manufacturer's written instructions.
 - .2 Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.
 - .3 Apply sealant in continuous beads.
 - .4 Apply sealant using gun with proper size nozzle.
 - .5 Use sufficient pressure to fill voids and joints solid.
 - .6 Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.
 - .7 Tool exposed surfaces before skinning begins to give slightly concave shape.
 - .8 Remove excess compound promptly as work progresses and upon completion.
- .2 Curing:
 - .1 Cure sealants in accordance with sealant Manufacturer's instructions.
 - .2 Do not cover up sealants until proper curing has taken place.

3.7 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01-00-10 - General Instructions
 - .1 Remove excess and droppings, using recommended cleaners as work progresses.
 - .2 Remove masking tape after initial set of sealant.

- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 00 10 - General Instructions
- .3 Waste Management: separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal

3.8 PROTECTION

- .1 Protect installed products and components from damage during construction.

END OF SECTION

PART 1 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 01 00 10 - General Instructions
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3 Section 06 10 00.01 - Rough Carpentry
- .4 Section 07 92 00 - Joint Sealing
- .5 Section 09 91 23 - Interior Painting.

1.2 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM A653/A653M-06a, Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA W59-03, Welded Steel Construction (Metal Arc Welding).
- .3 Canadian Steel Door Manufacturers' Association (CSDMA)
 - .1 CSDMA, Recommended Specifications for Commercial Steel Doors and Frames, 2000.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide shop drawings: in accordance with Section 01 00 10 - General Instructions
 - .1 Indicate frame material, core thickness, reinforcements, location of anchors and exposed fastenings and reinforcing.
 - .2 Include schedule identifying unit, with numbers relating to numbering on drawings and door schedule.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 00 10 - General Instructions
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Hot dipped galvanized steel sheet: to ASTM A653M, ZF75 minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.
- .2 Reinforcement channel: to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A653M, ZF75.

2.2 PRIMER

- .1 Touch-up prime CAN/CGSB-1.181.
 - .1 Maximum VOC limit 50 g/L to GC-03.

2.3 PAINT

- .1 Field paint frame in accordance with Section 09 91 23 - Interior Painting. Protect weather strips from paint. Provide final finish free of scratches or other blemishes.

2.4 ACCESSORIES.

- .1 Door silencers: single stud rubber/neoprene type.
- .2 Metallic paste filler: to manufacturer's standard.

2.5 FRAMES FABRICATION GENERAL.

- .1 Fabricate frame in accordance with CSDMA specifications.
- .2 Fabricate frame to profiles and maximum face sizes as indicated.

- .3 Manufacturer's nameplates on frames and screens are not permitted.
- .4 Conceal fastenings except where exposed fastenings are indicated.
- .5 Provide factory-applied touch up primer at areas where zinc coating has been removed during fabrication.

2.6 FRAME ANCHORAGE

- .1 Provide appropriate anchorage to floor and wall construction.
- .2 Locate each wall anchor immediately above or below each hinge reinforcement on hinge jamb and directly opposite on strike jamb.
- .3 Provide 2 anchors for rebate opening heights up to 1520 mm and 1 additional anchor for each additional 760 mm of height or fraction thereof.

2.7 FRAMES: WELDED TYPE

- .1 Welding in accordance with CSA W59.
- .2 Accurately mitre or mechanically joint frame product and securely weld on inside of profile.
- .3 Grind welded joints and corners to a flat plane, fill with metallic paste and sand to uniform smooth finish.
- .4 Securely attach floor anchors to inside of each jamb profile.
- .5 Weld in 2 temporary jamb spreaders per frame to maintain proper alignment during shipment.

PART 3 EXECUTION

3.1 INSTALLATION GENERAL

- .1 Install frame to CSDMA Installation Guide.

3.2 FRAME INSTALLATION

- .1 Set frame plumb, square, level and at correct elevation.

- .2 Secure anchorages and connections to adjacent construction.
- .3 Brace frames rigidly in position while building-in. Install temporary horizontal wood spreader at third points of door opening to maintain frame width. Provide vertical support at centre of head for openings over 1200 mm wide. Remove temporary spreaders after frames are built-in.
- .4 Make allowances for deflection of structure to ensure structural loads are not transmitted to frames.
- .5 Caulk perimeter of frames between frame and adjacent material.

3.3 FINISH REPAIRS

- .1 Touch up with primer finishes damaged during installation.
- .2 Fill exposed frame anchors and surfaces with imperfections with metallic paste filler and sand to a uniform smooth finish.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED
SECTIONS

- .1 Section 01 00 10 - General Instructions.
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3 Section 07 21 16 - Batt and Blanket Insulation.
- .4 Section 07 92 00 - Joint Sealing
- .5 Section 09 22 16 - Non-Structural Metal Framing.
- .6 Section 09 91 23 - Interior Painting.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C 36/C36M-03, Specification for Gypsum Wallboard.
 - .2 ASTM C 475-02, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .3 ASTM C 514-04, Specification for Nails for the Application of Gypsum Board.
 - .4 ASTM C 840-04a, Specification for Application and Finishing of Gypsum Board.
 - .5 ASTM C 954-04, Specification for Steel Drill Screws for the Application of Gypsum Panel Products to Steel Studs.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-71.25-M88, Adhesive, for Bonding Drywall to Wood Framing and Metal Studs.
- .3 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-03, Surface Burning Characteristics of Building Materials and Assemblies.

1.3 DELIVERY,
STORAGE AND
HANDLING

- .1 Deliver materials in original packages, containers or bundles bearing Manufacturers brand name and identification.

- .2 Store materials inside, level, under cover. Keep dry. Protect from weather, other elements and damage from construction operations and other causes.
- .3 Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

1.4 SITE ENVIRONMENTAL REQUIREMENTS

- .1 Maintain temperature minimum 10 degrees C, maximum 21 degrees C for 48 hours prior to and during application of gypsum boards and joint treatment, and for at least 48 hours after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.
- .3 Ventilation: Ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials 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 packaging material for recycling in accordance with Waste Management Plan.
- .4 Divert unused paint and caulking material from landfill to official hazardous material collections site.

- .5 Do not dispose of unused paint and caulking materials into sewer systems, into lakes, streams, onto ground or in other locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Standard board: to ASTM C 36/C36M regular, 12.7 mm thick, 1200 mm wide x maximum practical length.
- .2 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30, galvanized.
- .3 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .4 Resilient drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .5 Nails: to ASTM C 514.
- .6 Steel drill screws: to ASTM C 1002.
- .7 Stud adhesive: to CAN/CGSB-71.25.
- .8 Laminating compound: as recommended by manufacturer, asbestos-free.
- .9 Casing beads, corner beads, control joints and edge trim: 0.5 mm base thickness, perforated flanges, one piece length per location.
- .10 Sealants: in accordance with Section 07 92 00 - Joint Sealing.
- .11 Acoustic sealant.

- .12 Joint compound: to ASTM C 475, asbestos-free.
- .13 Sound insulation: mineral fibre batt: to CSA A101, thickness as indicated.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Do application and finishing of gypsum board in accordance with ASTM C 840 except where specified otherwise.
- .2 Install work level and plumb to tolerance of 1:1200.
- .3 Frame with furring channels, perimeter of openings for access panels and/or grilles.
- .4 Install wall furring for gypsum board wall finishes in accordance with ASTM C 840, except where specified otherwise.

3.2 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work is approved.
- .2 Apply single layer gypsum board to metal furring or framing using screw fasteners for first layer. Maximum spacing of screws 300 mm on centre.
- .3 Install gypsum board with face side out.
- .4 Do not install damaged or damp boards.
- .5 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.3 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm on centre using contact adhesive for full length.
- .2 Install casing beads around perimeter of suspended ceilings.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .4 Splice corners and intersections together and secure to each member with 3 screws.
- .5 Finish face panel joints and internal angles with joint system consisting of joint compound, joint tape and taping compound installed according to Manufacturer's directions and feathered out onto panel faces.
- .6 Gypsum Board Finish: finish gypsum board walls to following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:
 - .1 Levels of finish:
 - .1 Walls - Level 5: Embed tape for joints and interior angles in joint compound and apply three separate coats of joint compound over joints, angles, fastener heads and accessories; apply a thin skim coat of joint compound to entire surface; surfaces smooth and free of tool marks and ridges.

- .7 Finish corner beads, control joints and trim as required with two coats of joint compound and one coat of taping compound, feathered out onto panel faces.
- .8 Fill screw head depressions with joint and taping compounds to bring flush with adjacent surface of gypsum board so as to be invisible after surface finish is completed.
- .9 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .10 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED
SECTIONS

- .1 Section 01 00 10 - General Instructions
- .2 Section 07 92 00 - Joint Sealing
- .3 Section 09 21 16 - Gypsum Board Assemblies
- .4 Section 09 91 23 - Interior Painting

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C 645-00, Specification for Nonstructural Steel Framing Members.
 - .2 ASTM C 754-00, Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .2 Environmental Choice Program (ECP).
 - .1 ECP-50-93, Gypsum Wallboard.

1.3 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.

1.4 WASTE
MANAGEMENT AND
DISPOSAL

- .1 Separate and recycle waste materials 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 packaging material for recycling in accordance with Waste Management Plan.

- .4 Divert unused metal materials from landfill to metal recycling facility.
- .5 Divert unused gypsum materials from the landfill to recycling facility.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Non-load bearing channel stud framing:
 - .1 to ASTM C645
 - .2 stud size as indicated in Architectural drawings
 - .3 roll formed from 0.5 mm 25 gauge thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board
 - .4 knock-out service holes at 460 mm centres.
- .2 Floor and ceiling tracks:
 - .1 to ASTM C 645
 - .2 in widths to suite stud sizes
 - .3 32 mm flange height.
- .3 Acoustical sealant: to CAN/CGSB-19.21.
- .4 Caulking compound for Partition.
- .5 Acoustical batt insulation: as required to meet STC requirements illustrated on Departmental Representative drawings.
 - .1 to be constructed of Mineral wool in flexible batts.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Align partition tracks at floor and ceiling and secure at 300mm or 400 mm on centre maximum. (as noted in Architectural Drawing Package Wall Section Details)
- .2 Install damp proof course under stud shoe tracks of partitions on slabs on grade.

- .3 Place studs vertically at 400 mm on centre and not more than 50 mm from abutting walls, and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to Manufacturer's instructions.
- .4 Erect metal studding to tolerance of 1:1000.
- .5 Attach studs to tracks using screws.
- .6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .7 Co-ordinate erection of studs with installation of doors and special supports or anchorage for work specified in other Sections.
- .8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centers specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.
- .9 Install heavy gauge single jamb studs at openings.
- .10 Erect track at head of door openings of to accommodate intermediate studs. Secure track to studs at each end, in accordance with Manufacturer's instructions. Install intermediate studs above and below openings in same manner and spacing as wall studs.
- .11 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.

- .12 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .13 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to studs.
 - .1 Use 50 mm leg ceiling tracks secured to underside of deck and nest top of partition in ceiling track to hold partition rigidly while permitting movement of beam or structural slab.
 - .2 Fill void between top of partition and underside of track with fibrous batt insulation - do not compress insulation.
- .14 Install continuous insulating strips to isolate studs from un insulated surfaces.
- .15 Install two continuous beads of acoustical sealant under studs and tracks around perimeter of sound control partitions.

3.2 CLEANING

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

END OF SECTION

PART 1 - GENERAL1.1 REFERENCES

- .1 American Society for Testing and Materials International (ASTM)
 - .1 ASTM C 635-00, Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .2 ASTM E 1477-98a(2003), Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
- .4 Underwriter's Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102-2003, Surface Burning Characteristics of Building Materials and Assemblies.

1.2 SUBMITTALS

- .1 Submit samples in accordance with Section 01 00 10 - General Instructions.
 - .1 Submit duplicate 150mm x 150mm samples of acoustical units.
- .2 Product Data: submit WHMIS MSDS in accordance with Section 01 00 10 - General Instructions
- .3 Submit shop drawings in accordance with Section 01 00 10 - General Instructions.

- 1.3 DESIGN REQUIREMENTS .1 Maximum deflection: 1/360th of span to ASTM C 635 deflection test.
- 1.4 STORAGE AND HANDLING .1 Store materials inside, level, under cover. Protect from weather, damage from construction operations and other causes, in accordance with manufacturer's printed instructions.
- .2 Handle materials to prevent damage to edges or surfaces. Protect metal accessories and trim from being bent or damaged.
- PART 2 - PRODUCTS
- 2.1 ACOUSTICAL CEILING PANELS .1 Refer to Annex E for the tile specification
- 2.2 ACOUSTICAL SUSPENSION .1 Intermediate duty system to ASTM C 635.
- .2 Basic materials for suspension system: commercial quality cold rolled steel, zinc coated.
- .3 Suspension system: non fire rated, two directional exposed tee bar grid.
- .4 Exposed tee bar grid components: shop painted satin sheen, white colour. Components die cut. Main tee with double web, rectangular bulb and 25 mm rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection.
- .5 Additional Hanger wire: galvanized soft annealed steel wire, 3.6 mm diameter for access tile ceilings.

- .6 Hanger inserts: purpose made.
- .7 Accessories: splices, clips, wire ties, retainers and wall moulding to complement suspension system components, as recommended by system manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION OF ACOUSTIC PANELS

- .1 Install acoustical panels and tiles in ceiling suspension system. Do not install ceiling tiles until work above ceiling has been inspected by the Departmental Representative.
- .2 Co-ordinate ceiling work to accommodate components of other sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustical ceiling components.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELEATED SECTIONS .1 Section 01 00 10 - General Instructions
- .2 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .3 Section 01 78 00 - Closeout Submittals.
- 1.2 REFERENCES .1 American Society for Testing and Materials (ASTM International)
- .1 ASTM F 1066-04(2010)e1, Specification for Vinyl Composition Floor Tile.
- .2 Canadian General Standards Board (CGSB)
- .1 CAN/CGSB-25.20-95, Surface Sealer for Floors.
- 1.3 SAMPLES .1 Submit samples in accordance with Section 01 00 10 General Instructions
- .2 Submit duplicate tile in size specified, 300 mm x 300 mm and base at 300 mm long
- 1.4 CLOSEOUT SUBMITTALS .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- 1.5 WASTE MANAGEMENT AND DISPOSAL .1 Separate and recycle waste materials 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 and corrugated cardboard packaging material in appropriate on-site for recycling in accordance with Waste Management Plan.

- .4 Dispose of unused finish and adhesive materials at official hazardous material collections site approved by Departmental Representative.
- .5 Do not dispose of unused finish and adhesive materials into sewer system, into streams, lakes, onto ground or in other locations where it will pose health or environmental hazard.

1.6 ENVIRONMENTAL REQUIREMENTS

- .1 Maintain air temperature and structural base temperature at flooring installation area above 20° C for 48 hours before, during and for 48 hours after installation.

1.7 EXTRA MATERIALS

- .1 Provide maintenance materials of resilient tile flooring, base and adhesive in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide 5 m² of flooring material required for this Project for maintenance use.
- .3 Extra materials to be from same production run as installed materials.
- .4 Clearly identify each container of floor tile and each container of adhesive.
- .5 Deliver to the Departmental Representative upon completion of the work of this section.
- .6 Store where directed by the Departmental Representative

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Vinyl composition tile: to ASTM F1066, Composition 1 - non asbestos Class 2 - through pattern tile 3 mm, 300 x 300 mm size, in standard marbled colour indicated selected by Departmental Representative.

- .2 Resilient base: to vinyl coved , minimum 1200 mm length and 100 mm high including pre molded end stops and external corners for coved base only, colour as indicated on the Architectural Drawing Package
- .3 Primers and adhesives: waterproof, recommended by flooring Manufacturer for specific material on applicable substrate, above, at or below grade.
- .4 Metal edge strips: aluminum extruded, smooth, polished with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.
- .5 Wax: to CAN/CGSB-25.21 type recommended by flooring Manufacturer.

PART 3 - EXECUTION

3.1 INSPECTION

- .1 Ensure concrete floors are dry, by using test methods recommended by tile manufacturer.

3.2 SUB FLOOR TREATMENT

- .1 Ensure concrete floor is finished to Class 1 in accordance with CAN3-A23.1.
- .2 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .3 Clean floor and apply filler; trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
- .4 Remove old adhesives to prevent residual, old flooring adhesives from bleeding through to new flooring and/or interfering with the bonding of new adhesives.

3.3 TILE APPLICATION

- .1 Provide a high ventilation rate, with maximum outside air, during installation, and for 48 to 72 hours after installation. If possible, vent directly to the outside. Do not let contaminated air re-circulate through a district or whole building air distribution system. Maintain extra ventilation for at least one month following building occupation.
- .2 Apply adhesive uniformly using recommended trowel in accordance with flooring Manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.
- .3 Lay flooring with joints parallel to building lines to produce symmetrical tile pattern.
- .4 Cut tile and fit neatly around fixed objects.
- .5 Terminate flooring at centerline of door in openings where adjacent floor finish is dissimilar.
- .6 Install metal edge strips at unprotected or exposed edges where flooring terminates.

3.5 BASE APPLICATION

- .1 Lay out base to keep number of joints at minimum. Base joints at maximum length available or at internal or pre molded corners.
- .2 Clean substrate and prime with one coat of adhesive.
- .3 Apply adhesive to back of base.
- .4 Set base against wall and floor surfaces tightly by using 3 kg hand roller.
- .5 Install straight and level to variation of 1:1000.

- .6 Scribe and fit to door frames and other obstructions. Use pre molded end pieces at flush door frames.
 - .7 Cope internal corners. Use pre molded corner units for right angle external corners. Use formed straight base material for external corners of other angles, minimum 300 mm each leg.
- 3.6 INITIAL CLEANING AND POLISHING
- .1 Remove excess adhesive from floor, base and wall surfaces without damage.
 - .2 Clean and polish floor and base surface to flooring Manufacturer's instructions.
- 3.7 PROTECTION OF FINISHED WORK
- .1 Protect new floors from time of final set of adhesive until final sealing
 - .2 Prohibit traffic on floor for 48 hours after installation.

END OF SECTION

PART 1 - General

1.1 REFERENCES

- .1 American Association of Textile Chemists and Colorists (AATCC)
 - .1 AATCC 16-2004, Color Fastness to Light.
 - .2 AATCC 23-2010, Color Fastness to Burn Gas Fumes.
 - .3 AATCC 129-2011, Colour Fastness to Ozone in the Atmosphere Under High Humidities.
 - .4 AATCC 134-2011, Electrostatic Propensity of Carpet.
 - .5 AATCC 171-2010, Hot Water Extraction for colourization, dimensional stability and permanency of finishes
 - .6 AATCC 175-2008, Stain Resistance: Pile Floor Coverings.
 - .7 AATCC 189-2007, Fluorine Content of Carpet Fibers.
 - .8 AATCC 165, Colorfastness to Crocking
 - .9 AATCC 174, Antimicrobial
- .2 American Society for Testing and Materials (ASTM International)
 - .1 ASTM D 1055-09, Specification for Flexible Cellular Materials - Latex Foam.
 - .2 ASTM D 1667-05(2011), Standard Specification for Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam).
 - .3 ASTM D 3936-11 Standard Test Method for Resistance to Delamination of the Secondary Backing of Pile Yarn Floor Covering.
 - .4 ASTM D 5252-11, Standard Practice for the Operation of the Hexapod Drum Tester.
 - .5 ASTM E 648-10e01, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
 - .6 ASTM E 662-09, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

- .3 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-4.2 No.27.6-M91, Textile Test Methods - Flame Resistance - Methemine Tablet Test for Textile Floor Coverings.
 - .2 CAN/CGSB-4.2 No.77.1-94/ISO 4919:1978, Textile Test Methods - Carpets - Determination of Tuft Withdrawal Force.
 - .3 Aachner/ISO 2551 Dimensional Stability
 - .4 CAN/CGSB-4.129-93(R1997), Carpets for Commercial Use.
 - .5 CAN/CGSB-25.20-95, Surface Sealer Floors.
 - .6 CAN/CGSB-4.2 No. 18.8 Colourfastness of Light
 - .7 CAN/CGSB-4.2 method 77.1/ISO 4919 Carpet-Determination of Tuft withdrawal Force
- .4 Carpet and Rug Institute (CRI)
 - .1 CRI-104-2002, Standard Installation of Commercial Carpet.
 - .2 IAQ Carpet Testing Program.
- .5 National Floor Covering Association (NFCA)
 - .1 Floor Covering Specification Manual.
- .6 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102.2-10, Surface Burning Characteristics of Flooring, Floor Covering
- .7 LEED Canada-C1, Version 1.0, Environmental Credit 4.3

1.2 TESTING

- .1 At the time of product delivery to the work site, the Contractor must turn over a Representative sampling range of materials for testing to the Department Representative. **Note:** The Departmental Representative shall have full authority to select materials for testing from an unrestricted range of unopened, original containers or wrappings with Manufacturer's seals and labels intact, after materials have been delivered to the work site.
- .2 The following tests may be requested to be carried out by an independent laboratory and/or by the Department Representative. This list is representative only and should not be considered comprehensive. Although date may not be mentioned below, it is understood that the latest testing date is to be used (eg: AATCC-16-2004). Other test may be requested/conducted at the sole discretion of the Departmental Representative.
 - .1 AATCC 16-Option 5, Colour Fastness to Light, minimum L5 after 40 hours
 - .2 Testing against CAN/CGSB-4.129M, CAN/CGSB-4.161M, one quality in construction only for a light, medium and dark colour.
 - .3 Aachner/ISO 2551 Dimensional Stability, maximum 0.1% change.
 - .4 ASTM D 3936, Standard Test Method for Resistance to Delamination of the Secondary Backing of Pile Yarn Floor Covering. Minimum 3 lbs per inch/5 Newtons/cm
 - .5 Pile Density (calculation not test) - minimum 10 Kilotex. Provide calculations of determined Kilotex.
 - .6 Appearance Retention Hexapod Drum Test, ASTM D5252 for 12,000 cycles, minimum rating of 3.0 using CRI TM-101 Reference Scales.

- .7 AATCC 175, Stain Resistance: Pile Floor Coverings, minimum 2 washings to simulate removal of topical treatments by hot water extraction, followed by: AATCC 175, minimum of using AATCC Red Dye 40 Reference Scale.
- .8 Soil Resistance: An average of 3 fluorine analyses AATCC 189 of a single composite sample to be a minimum of 500 ppm fluorine by weight when new and an average of 3 fluorine analyses using AATCC 189 to be a maximum of 400 ppm fluorine by weight after 2 AATCC 171 (HWE) cleanings.
- .9 CAN/CGSB 4.2 method 77.1/ISO 4919 Carpet-Determination of Tuft withdrawal Force - minimum 35N force
- .10 CAN/CGSB 4.2, No. 27.6-M91, Textile Test Methods- Flame Resistance- Methemine Tablet Test for Textile Floor Coverings, sampling by CAN/CGSB-4.155, as required under the Hazardous Products Act.
- .11 Maximum flame spread rating 300, maximum smoke developed classification 500, when tested to CAN/ULC-S102.2.
- .12 Smoke Density: (ASTM E-662)<450.
- .13 AATCC 134, Electrostatic Propensity of Carpet: maximum 3kv at 20% RH and 22°C
- .14 AATCC 165 Colourfastness to Crocking, greater than or equal to Grey Scale 4 wet, dry.
- .15 AATCC 171 Carpets: Cleaning of: Hot water extraction method followed by AATCC 175 Stain resistant Pile Floor coverings. Rating to AATCC red 40 Stain scale.
- .16 AATCC 164, Colourfastness to Oxides of Nitrogen in the Atmosphere under High Humidity for 3 cycles. Rating to AATCC Grey Scale for Colour Change.

- .3 Testing to be conducted by an independent testing agency accredited to do the specified test, by the Standards Council of Canada or by the U.S. National Institute of Science and Technology's National Voluntary Accreditation Program (NVLAP)
- .4 To be considered independent, a testing agency shall not in any way be involved or have an interest in the manufacture or sale of the product being tested.

1.3 SUBMITTALS

- .1 Submit control submittals at time of Tender in accordance with Section 01 00 10 - General Instructions.
- .2 Submit verification to demonstrate compliance with CAN/ULC S102.2.
- .3 Submit proof that carpet has been tested and passed the Indoor Air Quality (IAQ) Carpet Testing Program requirements of the Carpet and Rug Institute (CRI), Green Label plus Indoor Air Quality Test Program and the Canadian Carpet Institute (CCI).
- .4 Submit report verifying that tuft bind meets requirements of CAN/CGSB-4.129 when tested to CAN/CGSB-4.2 No.77.1./ISO 4919
- .5 Submit carpet Manufacturer's installation instructions: Indicate special procedures and perimeter conditions requiring special attention.
- .6 Submit certification and description of carpet reclamation and recycling processes.
- .7 Annex A, completed indicating all information on carpet: product/supplier; nylon: supplier/type/percentages if more than one type; list of colours: colour names/descriptions

1.4 PRODUCT DATA

- .1 Submit product data in accordance with Section 01 00 10 - General Instructions.
- .2 Submit product data sheet for each carpet, adhesive, including "peel and stick" type, carpet protection and sub floor patching compound.
- .3 Submit WHMIS MSDS - Material Safety Data Sheets acceptable to Labour Canada and Health Canada for carpet adhesive and seam adhesive. Indicate VOC content.
- .4 Submit data on specified products, describing physical and performance characteristics, sizes, patterns, colours, and methods of installation.

1.5 CLOSE OUT
SUBMITTALS

- .1 Submit maintenance data in accordance with Section 01 00 10 General Instructions Include maintenance procedures, recommendations for maintenance materials and equipment, and suggested schedule for cleaning.
- .2 Schedule of carpet reclamation activities indicating following:
 - .1 Detailed sequence of removal work.
 - .2 Inventory of items to be removed and reclaimed.
 - .3 Proposed packing and transportation measures.
- .3 Reclamation agencies' records indicating receipt and disposition of use carpet.

- .4 Certification: Reclamation Agency to verify in writing that used carpet was removed and recycled in accordance with carpet manufacturers' reclamation program.
 - .1 Record off-site removal of debris and materials and provide following information regarding removed materials.
 - .1 Time and date of removal.
 - .2 Type of material.
 - .3 Weight and quantity of materials.
 - .4 Final destination of materials.

1.6 QUALIFICATIONS

- .1 Installer Qualifications:
 - .1 Flooring contractor requirements.
 - .1 Specialty contractor normally engaged in this type of work, with prior experience in installation of these types of materials.
 - .2 Certified by carpet manufacturer for carpet installation.
 - .3 Must not sub-contract labour without written approval of the Departmental Representative.
 - .2 Be responsible for proper product installation, including floor testing and preparation as specified and in accordance with carpet manufacturers written instructions.

1.7 REGULATORY REQUIREMENTS

- .1 Prequalification: compliance with Department of Consumers and Corporate Affairs regulations under "Hazardous Products Act", Part II of the Schedule, tested to CAN/CGSB-4.2-No.27.6.
- .2 Indoor Air Quality: compliance with CRI/CCI Green Label Indoor Air Quality Program, CRI/CCI-IAQ requirements for maximum total volatile chemicals released into air. Label each carpet product with CRI/CCI-IAQ label.

1.8 DELIVERY, STORAGE .1
& HANDLING

- .1 Label packaged materials. For modular products indicate nominal dimensions of tile and indicate installation direction.
- .2 Store packaged materials in original containers or wrapping with manufacturer's seals and labels intact.
- .3 Store carpeting and accessories in location as directed by the Departmental Representative. Store carpet and adhesive at minimum temperature of 18° C and relative humidity of maximum 65% for minimum of 48 hours before installation.
- .4 Prevent damage to materials during handling and storage. Keep materials under cover and free from dampness.
- .5 Store materials in area of installation for minimum period of 48 hours prior to installation.
- .6 Modular carpet: store on pallet form as supplied by Manufacturer. Do not stack pallets.
- .7 Refer to 3.7 Additional Materials.

1.9 WASTE MANAGEMENT .1
& DISPOSAL

- .1 Separate and recycle waste materials including scraps and waste from new carpet in accordance with Section 01 00 10 General Instructions and Waste Reductions Work Plan.
- .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 for recycling in accordance with Waste Management Plan
- .4 Vacuum used carpet before removal.

- .5 Maintain possession of removed used carpet.
- .6 Remove used broadloom in large pieces, roll tightly and pack in container. Use effective packing techniques to maximize amount of material in container.
- .7 Sort only clean, dry carpet materials for recycling. Clean is defined as carpet free contamination, garbage and tack strips.
- .8 Immediately remove used carpet from site and transport for recycling.
- .9 Existing Used Carpet: Submit parameters/third party certification for current carpet reclamation program - landfill is not an option.

1.10 PROJECT/SITE
ENVIRONMENTAL
REQUIREMENTS

- .1 Moisture: Ensure substrate is within moisture limits and alkalinity limits prescribed by manufacturer. Prepare moisture testing and provide report to Departmental Representative.
- .2 Temperature: Maintain ambient temperature of not less than 18° C from 48 hours before installation to at least 48 hours after completion of work.
- .3 Relative humidity: Maintain relative humidity between 10 and 65% RH for 48 hours before, during and 48 hours after installation.
- .4 Safety: Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
- .5 Ventilation: The Departmental Representative will arrange for ventilation system to be operating during installation of carpet.

- .6 Test existing floor leveling compound for presence of asbestos contamination. Notify Departmental Representative for additional instructions where asbestos is discovered.
- .7 Do not install carpet until wet-work in space is completed and nominally dry, work above ceilings is complete.

1.11 WARRANTY

- .1 Carpet Tile: Provide 15 year warranty for wear beyond 10% of pile fibre and static control.

PART 2 - Products

2.1 PROJECT REQUIREMENTS

- .1 Type 1: Field Carpet (refer to 2.2.18)

2.2 MODULAR CARPET

- .1 Project Requirements:
Type 1: Field Carpet:
One modular carpet pattern/colour/texture is required,
Or:
Minimum of 3 coordinating styles in coordinating colours and patterns varying in scale are required.
- .2 Carpet Tile Dimensions:
 - .1 Minimum 455 mm x 455mm, maximum 1000 mm x 1000 mm.
- .3 Carpet: to CAN/CGSB 4.129 and as follows:
 - .1 Certified for flammability to Health Canada regulations under "Hazardous Products (Carpet) Regulations" Part II of the schedule.
 - .2 Maximum flame spread rating 300, maximum smoke developed classification 500 when tested to CAN/ULC-S102.2.
 - .3 Certified to Carpet and Rug Institute and the Canadian Carpet Institute's IAQ requirements.
 - .4 Performance rating to ASTM D 5417.

- .4 Water Consumption for Final Product:
 - .1 100% Solution Dyed: less than 2 litres/m²
 - .2 Combination of solution dyed and maximum 30% yarn dyed: maximum 22 litres/m²

- .5 Emission Rates During Production:
 - .1 Must meet CRI Green Label plus Criteria for all chemicals.
 - .2 Total Volatile Organic Compound (TVOC's): maximum .5mg/m² when tested to ASTM D5116.
 - .3 Volatile Organic Compound (VOC's) for adhesive: Must meet CRI Label criteria

- .6 Construction:
 - .1 eg: Tufted-level Loop or multi-media loop.

- .7 Pile Fibre: CAN/CGSB 4.129
 - .1 100% first quality, bulk continuous filament nylon, branded and certified, externally extruded by a fibre producer offering a construction and performance standards testing program for the carpet specified, either: type 6.6 or 6, Triobal or Square Hollowfill Cross-Section. If fibre is internally extruded, provide third party testing results confirming the aforementioned Fibre shape to have maximum Modification Ratio of 2.8 for soil release capabilities. Fibre identification to AATCC 20.

- .8 Tuftbind: ASTM D 1335, minimum 35 N.

- .9 Colourfastness to light: CAN/CGSB 4.2 No.18.3, AATCC 16E, minimum L5.

- .10 Colourfastness to Atmospheric Fading: to AATCC 129 and AATCC 23.

- .11 Colourfastness to Crocking: AATCC 165> or - than 4.0 wet, dry.

- .12 Primary Backing: non-woven.
- .13 Secondary Backing: fiberglass or nylon reinforced vinyl composite; polyolefin.
 - .1 Density: as per ASTM D 1667
 - .2 Dimensional Stability: ISO 2551 (Achner Test), maximum 0.1% change.
 - .3 Delamination: ASTM D3936: minimum 5N/cm
- .14 Installation:
 - .1 eg: Random/Non-directional (installer places carpet on floor without any regard to arrows or patterning), standard lay, installer will have to follow arrows and manufacturer's instructions for all arrows in same direction (monolithic) or quarter turn or brick/ashlar etc.
 - .2 Contractor must verify and obtain written approval for installation with the Departmental Representative on-site prior to installation.
- .15 Adhesives
 - .1 Releasable, pressure sensitive adhesive to conform to carpet manufacturer's specifications.
 - .2 Acrylic polymer emulsion, resin mixture, latex adhesive.
- .16 Recycling
 - .1 New Carpet: Must be eligible for recycling by the supplying mill or fibre producer within an existing program in place; submit program parameters.
- .17 Recycled Content:
 - .1 Total recycled content: minimum of 35% recycled content.

- .18 Type 1 Carpet Tile (Field)
 - .1 Yarn Ply: Multiple Plies
 - .2 Pile Weight: minimum 576 gm/m² (17oz/sq yard)
 - .3 Density: minimum 9.5 kilotex/5400 Pile Density.
 - .4 Pile Thickness: minimum 2.00mm, maximum 5.00mm
 - .5 Yarn Dye Method: 100% solution dyed or a combination of solution dyed and maximum 30% yarn dyed.
 - .6 Total Weight: minimum 4374gm/m² for carpet tile with fiberglass or nylon reinforced vinyl composite secondary backing and 3187gm/m² for carpet tile with polyolefin secondary backing.
 - .7 Colour, texture and pattern to be selected from bidder's standard range of carpet product.
 - .1 Pattern should be integrated within the face material and not applied after surface manufacturing.
 - .2 Minimum "X" individual colours within one carpet tile.
 - .8 Pile Surface Appearance
eg: Textured Pattern

- .19 Type 2A Accent Carpet Tile, inserts only, no large areas (if applicable)
 - .1 Yarn Ply: Not less than 2 ply
 - .2 Pile Weight: minimum 678gm/m² (20oz/sq yard)
 - .3 Density: minimum 10 kilotex/5100 Pile Density
 - .4 Pile Thickness: minimum 2.00mm, maximum 5.00mm
 - .5 Yarn Dye Method: solution dyed or yarn dyed.
 - .6 Total Weight: minimum 4476gm/m² for carpet tile with fiberglass or nylon reinforced vinyl composite secondary backing and 3275gm/m² for carpet tile with polyolefin secondary backing.
 - .7 Pile Surface Appearance: Solid or heathered texture, giving the appearance of a solid colour to coordinate with Type 1

2.3 SPECIAL
REQUIREMENTS - ALL
PRODUCTS

- .1 Soil Resistance: An average of 3 fluorine analyses AATCC 189 of a single composite sample to be a minimum of 500 ppm fluorine by weight when new and an average of 3 fluorine analyses using AATCC 190 to be a maximum of 400 ppm fluorine by weight after 2 AATCC 171 (HWE).
- .2 Stain resistance: AATCC 171 minimum 2 washings to simulate removal of topical treatments by hot water extraction, followed by: AATCC 175, minimum of 8 using AATCC Red 40 Stain Scale.
- .3 Appearance Retention: Hexapod Drum ASTM D5252 for 12,000 cycles, minimum rating of 3.0 using CRI TM-101 Reference scales.
- .4 Permanent static control: to AATCC 134, 3 kv maximum at 20% RH and 22°C.

2.4 ACCESSORIES

- .1 Base: Vinyl Base 100MM high, colour to be selected by the Departmental Representative. Sample to be approved by the Departmental Representative before installation
- .2 Seaming tape: types recommended by carpet manufacturer for purpose intended.
- .3 Seaming sealer adhesive: type recommended by carpet manufacturer for purpose intended.
- .4 Binder bars: as recommended by carpet manufacturer and approved by Departmental Representative.
- .5 Carpet protection: non-staining heavy duty kraft paper.
- .6 Concrete floor sealer: to CAN/CGSB-25.20, Type 1.
- .7 Sub floor patching compound: Portland cement base filler, mix with latex and water to form a cementitious paste.

PART 3 - Execution

3.1 DEMOLITION

- .1 Remove and return carpet for recycling. Coordinate with Departmental Representative.

3.2 SUB FLOOR
TREATMENT

- .1 Concrete shall be inspected to determine special care required to make it a suitable foundation for carpet. Cracks 3 mm wide or protrusions over 0.8 mm will be filled and levelled with appropriate and compatible latex patching compound.
- .2 Do not exceed Manufacturer's recommendations for patch thickness.
- .3 Large patch areas are to be primed with a compatible primer.
- .4 Concrete substrates shall be cured, clean and dry.
- .5 Concrete substrates shall be free of paint, dirt, grease, oil, curing or parting agents, and other contaminates, including sealers, that may interfere with the bonding of the adhesive.
- .6 Wherever a powdery or porous concrete surface is encountered, a primer compatible with the adhesive shall be used to provide a suitable surface for glue-down installation.

3.3 PREPARATION

- .1 Prepare floor surfaces in accordance with CRI 104 Standard for Installation of Commercial Carpet.
- .2 Pre-condition carpeting following manufacturer's printed instructions.

3.4 INSTALLATION

- .1 Install carpeting using minimum of pieces.
- .2 Install in accordance with manufacturer's printed instructions and in accordance with Carpet and Rug Institute Standard for Installation of Commercial Carpet, CRI 104.
- .3 Finish installation to present smooth wearing surface free from conspicuous seams, burring and other faults.
- .4 Use material from same dye lot. Ensure colour, pattern and texture match within any one visual area. Maintain constant pile direction.
- .5 Fit neatly around architectural, mechanical, electrical and telephone outlets, and furniture fitments, around perimeter of rooms into recesses, and around projections.
- .6 Extend carpet into toe spaces, door reveals, closets, open-bottomed obstructions, removable flanges, alcoves, and similar openings.
- .7 Install carpet smooth and free of bubbles, puckers, and other defects.
- .8 Apply Acrylic release type Adhesive and install modular carpet tile in accordance with manufacturer's written instructions
- .9 Lay modular carpet with butt seams.
- .10 Roll modular carpet with appropriate roller for complete contact of carpet with mill-applied adhesive to sub-floor.

3.5 SEAMS

- .1 Seal edges of cut-outs as per manufacturer's recommendations.
- .2 Carpet visibility of seams and joints to acceptable industry standards.

3.6 PROTECTION OF FINISHED WORK

- .1 Vacuum carpets clean immediately after completion of installation. Protect traffic areas.
- .2 Prohibit traffic on carpet for a period of 24 hours until adhesive is cured
- .3 Install carpet protection to satisfaction of Departmental Representative.

3.7 ADDITIONAL MATERIALS

- .1 Provide additional materials as follows:
3% standard lay

Summary of LEED Points Possible with Carpet

Credit	MR/EQ ID	Point Carpet Only	Point Dependant Other aspects in Building	Note
2.1	MR		1	Divert 50% of Construction from Landfill
2.2	ME		1	Divert 75% of Construction from Landfill
4.1	MR		1	10% recycled content
4.2	MR		1	20% recycled content
5.1	MR		1	10% recycled materials
5.2	MR		1	20% recycled materials
4.1	EQ		1	Low emitting materials - Adhesives & Solvents
4.3	EQ	1		Low emitting materials - Carpet
1	ID		1	Innovation - low impact & cleaning maitenance
1	ID		1	Climate Neutral Products
1	ID		1	California Gold/Platinum Certification
Total		1	10	

END OF SECTION

PART 1 - GENERAL

1.1 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 - 1997, (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, 2004.
- .5 National Fire Code of Canada - 2005
- .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), 2009, c. 34 .

1.2 QUALITY ASSURANCE

- .1 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.3 SUBMITTALS

- .1 Submittals in accordance with Section 01 00 10 - General Instructions.
- .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 00 10 General Instructions. Indicate VOCs during application and curing.

.3 Samples:

- .1 Submit duplicate 200 x 300 mm sample panels of each paint with specified paint or coating in colours, gloss/sheen and textures required to MPI Architectural Painting Specification Manual standards.
- .2 Retain reviewed samples on-site to demonstrate acceptable standard of quality for appropriate on-site surface.

1.4 MAINTENANCE

.1 Extra Materials:

- .1 Deliver 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 - four litre can of each type and colour of 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 for requirements for delivery and storage of extra materials.

1.5 DELIVERY,
STORAGE AND
HANDLING

.1 Packing, Shipping, Handling and Unloading:

- .1 Pack, ship, handle and unload materials in accordance with Section 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 from 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 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, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan (WMP).
- .4 Place materials defined as hazardous or toxic in designated containers.
- .5 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .6 Ensure emptied containers are sealed and stored safely.
- .7 Unused paint materials must be disposed of at official hazardous material collections site as approved by Departmental Representative.
- .8 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.
- .9 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.

- .10 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .11 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).
- .12 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.

1.6 SITE CONDITIONS

- .1 Heating, Ventilation and Lighting:
 - .1 Provide continuous ventilation for seven days after completion of application of paint.
 - .2 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.

- .3 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.
- .4 Provide minimum lighting level of 323 Lux on surfaces to be painted.

PART 2 - 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 Departmental Representative Painting Specification Manual "Approved Product" listing.
- .6 Linseed oil, shellac, and turpentine: highest quality product from approved Manufacturer listed in MPI Departmental Representative 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 Formulate and manufacture water-borne surface coatings with no aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their compounds.
- .10 Flash point: 61.0 degrees C or greater for water-borne surface coatings and recycled water-borne surface coatings.
- .11 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 15mg/L to natural watercourse or a sewage treatment facility lacking secondary treatment.
- .12 Water-borne paints and stains, recycled water-borne surface coatings and water borne varnishes to meet minimum "Environmentally Friendly" E2 rating.
- .13 Recycled water-borne surface coatings to contain 50% post-consumer material by volume.
- .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 50.0 ppm weight/weight total product.

- .3 Cadmium in excess of 1.0 ppm 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 Colour schedule is to be based upon selection of four base colours and two accent colours as follows. Refer to finishes below and drawings for locations:

PT1:	Colour:	White
	Finish:	Eggshell
PT2:	Colour:	Gray
	Finish:	Eggshell
PT3:	Colour:	To be Determined
	Finish:	Eggshell
PT4:	Colour:	To be Determined
	Finish:	Eggshell
PT5:	Colour:	Medium Gray
	Finish:	Heat Resistant Semi Gloss
PT6:	Colour:	Brown
	Finish:	Semi Gloss

- .2 Selection of colours from Manufacturers full range of colours.
- .3 Where specific products are available in restricted range of colours, selection based on limited range.
- .4 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 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:
 - .1 Gloss Level 3 Eggshell Finish
Gloss @ 60 degrees - 10 to 25
Sheen @ 85 degrees - 10 to 35
 - .2 Gloss Level 5 Semi Gloss Finish
Gloss @ 60 degrees - 35 to 70
- .2 Gloss level rating of painted surfaces as indicated on the Architectural Drawing Package

2.5 INTERIOR PAINTING SYSTEMS

- .1 Metal Doors and Frames, misc. steel, pipes, overhead decking, and ducts.
 - .1 INT 5.3A - Latex finish.
wash primer and epoxy primer).
 - .2 INT 5.3J - Latex Semi Gloss finish
(over waterborne primer).
- .2 Plaster and gypsum board: gypsum wallboard, drywall, "sheet rock type material":
 - .1 INT 9.2A - Latex Eggshell finish (over latex sealer).

- 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 unfavorable 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 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 building occupants and general public in and about the building.
- .2 Surface Preparation:
- .1 Remove electrical cover plates, light fixtures, surface hardware on doors, 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 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 vacuuming and/or wiping with dry, clean cloths.
 - .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 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 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.
- .6 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 vacuum cleaning.
- .7 Touch up of shop primers with primer as specified.

3.5 APPLICATION

- .1 Apply paint by brush or roller. 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 Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access.
- .4 Apply coats of paint continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by Manufacturer.
- .6 Sand and dust between coats to remove visible defects.

3.6 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.

3.7 FIELD QUALITY
CONTROL

- .1 Advise Departmental Representative when surfaces and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

3.8 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 spatter 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.

END OF SECTION