

**Part 1        General**

**1.1           SECTION INCLUDES**

- .1       Interior panels for walls and ceilings.
- .2       Panel and joint treatment.
- .3       Non-loadbearing metal stud wall framing.
- .4       Metal channel ceiling framing.
- .5       Access doors.
- .6       Acoustic sound insulation.

**1.2           RELATED SECTIONS**

- .1       Section 07 84 00 - Firestopping:
- .2       Section 07 92 00 - Joint Sealants.
- .3       Section 09 91 00 - Painting
- .4       Mechanical and Electrical Divisions: Supply of access panels.

**1.3           REFERENCES**

- .1       ASTM C475/C475M-02 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- .2       ASTM C645-04 - Specifications for Non-Structural Steel Framing Members.
- .3       ASTM C754-00 - Installation of Steel Framing Members to Receive Screw-Attached Gypsum Board.
- .4       ASTM C840-04a - Standard Specification for Application and Finishing of Gypsum Board.
- .5       ASTM C1002-01 - Steel Self-Piercing, Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- .6       ASTM C1280-04 - Standard Specification for Application of Gypsum Sheathing.
- .7       ASTM C1396/C1396M-04 - Standard Specification for Gypsum Board.
- .8       ASTM E119-00a - Method for Fire Tests of Building Construction and Materials.
- .9       ASTM E90-04 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

- .10 GA-201 (Gypsum Association) - Gypsum Board for Walls and Ceilings.
- .11 GA-214 (Gypsum Association) - Recommended Specification: Levels of Gypsum Board Finish.
- .12 GA-216 (Gypsum Association) - Application and Finishing of Gypsum Board.
- .13 GA-801 (Gypsum Association) - Handling Gypsum Board.
- .14 RECM G13-01 Walls document for secure areas.

#### **1.4 SUBMITTALS FOR REVIEW**

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data: Provide data on metal framing, gypsum board, joint tape and joint compound.

#### **1.5 QUALITY ASSURANCE**

- .1 Perform Work in accordance with ASTM C840.
- .2 Handling Gypsum Board: Comply with GA-801.

### **Part 2 Products**

#### **2.1 FRAMING MATERIALS**

- .1 Studs and Tracks: ASTM C645; galvanized sheet steel, (20 gauge) 1.02mm thick unless indicated otherwise. Use 20 gauge steel stud at ne partitions with plywood backing. Use 2"x6" 18 gauge stud around secure records room.
- .2 Furring, Framing, and Accessories: ASTM C645 and GA-216.
- .3 Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.
- .4 Blocking: Galvanized sheet metal; minimum 18 gauge, 200 mm wide minimum.

#### **2.2 PANEL MATERIALS**

- .1 Gypsum Board: ASTM C1396/C1396M, STANDARD AND Type X, thickness as indicated, maximum available length in place; ends square cut, tapered edges.

#### **2.3 ACCESSORIES**

- .1 Access Panels: Supplied by others, installed by this Section.

- .2 Sound Attenuation Insulation:
  - .1 Glass Fibre Batt: to CAN/ULC-S702; Type: 1; un-surfaced; thickness: to suit partition thickness, full stud thickness.
- .3 Joint Materials: ASTM C475; paper reinforcing tape, joint compound, adhesive, and water.
- .4 Panel Fasteners: ASTM C1002, Type S12 screws.
- .5 Compressible Foam Gasket: sill plate gasket; polyethylene foam, minimum thickness 6 mm x full width of sill plate at all acoustic sound walls.
- .6 Gypsum sheathing board (GWB): to ASTM C1396, Type X, 16mm (5/8" thick, 1220 mm (48" wide x maximum practical length, ends square cut, edges beveled. Use this board for ceiling and bulkheads and for walls where indicated. Refer to drawings, legends and schedules for locations.
- .8 Metal furring runners, hangers, tie wires, inserts, anchors: to CAS A82.30, galvanized.
- .9 Drywall furring channels: .0.5mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .10 Acoustic resilient channel system. STC min. 52
- .11 Steel drill screws: to ASTM C 1002.
- .12 Laminating compound: as recommended by manufacturer, asbestos-free.
- .13 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, Z275 zinc finish, 0.5 mm base thickness, perforated flanges, fillable types only, one piece length per location.
- .14 Trim to GA-216, metal: corner bead, casing bead, L bead, control joint and others as required.
- .15 Sealants: As per Section 07 92 00, installed by 09 21 16.
- .16 Acoustic sealant: As per Section 07 92 00, installed by 09 21 16.
- .17 Joint compound: to ASTM C475, asbestos-free, moisture and mould resistant.
- .18 Joint tape: mould resistant, fibreglass mesh.

## **Part 3 Execution**

### **3.1 METAL STUD INSTALLATION**

- .1 Install studs in accordance with ASTM C754 and manufacturer's instructions.

- .2 Install sill plate gaskets below all tracks.
- .3 Metal Stud Spacing: as indicated.
- .4 Refer to Drawings for indication of partitions extending stud framing through the ceiling to the structure above.
  - .1 Maintain clearance under structural building members to avoid deflection transfer to studs.
  - .2 Provide extended leg ceiling runners.
- .5 The drywall contractor is required to coordinate his stud installation with all other trades, providing openings, bracing, bulkheads etc as required to ensure that partitions are stable and run full height to underside of deck above as noted.
  - .1 No extras will be provided for off-sets, etc.. not shown on drawings.
- .6 Drywall edges shall extend to u/s of floor above and joints sealed with fire caulk or acoustical sealant in non rated acoustic sound walls.
- .7 Door and Window Opening Framing: Install double studs at frame jambs.
  - .1 Install stud tracks on each side of opening, at frame head height, and between studs and adjacent studs.
- .8 Blocking: Install blocking for support of wall cabinets, frame opening, accessories, hardware, equipment, wall mounted door stops, firestopping and as required.
  - .1 Both ends of metal blocking and intermittent lap joints to be secured to studs back-up
- .9 Anchorage to Substrate:
  - .1 Rigidly secure studs to substrate at minimum mid-height to prevent deflection.
  - .2 Provide bracing above ceilings as required to prevent deflection.

### **3.2 WALL FURRING INSTALLATION**

- .1 Erect furring for direct attachment to substrate.
- .2 Shim wall as required and rigidly secure to substrate to prevent deflection.
- .3 Erect furring channels; space maximum 400 mm on centre, not more than 100 mm from floor and ceiling lines and abutting walls.
  - .1 Secure in place on alternate channel flanges at maximum 600 mm on centre.
  - .2 Provide metal angle at sides, bottom and top of walls for edge securement.

### **3.3 CEILING FRAMING INSTALLATION**

- .1 Install in accordance with ASTM C754 and manufacturer's instructions.
- .2 Coordinate location of hangers with other work.

- .3 Install ceiling framing independent of walls, columns, and above ceiling work.
- .4 Reinforce openings in ceiling suspension system which interrupt main carrying channels or furring channels, with lateral channel bracing.
  - .1 Extend bracing minimum 600 mm past each end of openings.
- .5 Laterally brace entire suspension system.

### **3.4 ACCESSORIES INSTALLATION**

- .1 Install access panels to locations required for access.
- .2 Install resilient channels at maximum 600 mm on centre.
  - .1 Locate joints over framing members.
  - .2 Provide metal angle at bottom and top of wall for edge securement.
- .3 Place acoustic insulation in partitions tight within spaces, around cut openings, behind and around electrical and mechanical items within or behind partitions, and tight to items passing through partitions.
  - .1 Secure with insulation clips or other means to prevent sagging.
  - .2 Stagger Joints.
- .4 Install acoustic sealant at gypsum board perimeter at:
  - .1 Metal Framing: Two beads.
  - .2 Base Layer.
  - .3 Face Layer.
  - .4 Caulk all penetrations of partitions by conduit, pipe, duct work, rough-in boxes.
- .5 Supply and install security mesh as detailed on drawings full height of wall to underside of slab above. Construct per RCMP –G13-01 requirements.

### **3.5 ERECTION**

- .1 Do application and finishing of gypsum board to ASTM C840 except where specified otherwise.
- .2 Do application of gypsum sheathing to ASTM C1280.
- .3 Erect hangers and runner channels for suspended gypsum board ceilings to ASTM C840 except where specified otherwise.
- .4 Support light fixtures by providing additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .5 Install work level to tolerance of 1:1200.
- .6 Frame with furring channels, perimeter of openings for access panels, light fixtures, diffusers, grilles.

- .7 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .8 Furr duct shafts, beams, columns, pipes and exposed services where indicated.
- .9 Erect drywall resilient furring transversely across studs and between the layers of gypsum board, spaced maximum 600 mm on centre and not more than 150 mm from ceiling/wall juncture. Secure to each support.
- .10 Install acoustic sound insulation.

### **3.6 APPLICATION**

- .1 Apply gypsum board after bucks, anchors, blocking, sound attenuation, electrical and mechanical work have been approved.
- .2 Apply single and double layer gypsum board to framing using screw fasteners stud adhesive for first layer, laminating adhesive screw fasteners for second layer. Maximum spacing of screws 300 mm on centre.
  - .1 Single-Layer Application:
    - .1 Apply gypsum board on ceilings prior to application of walls to ASTM C840.
    - .2 Apply gypsum board vertically or horizontally, providing sheet lengths that will minimize end joints.
  - .3 Apply 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning to seal gypsum board/structure junction where partitions abut fixed building components.
    - .1 Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.
  - .4 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
  - .5 Install gypsum board on walls vertically to avoid end-butt joints.
  - .6 Install gypsum board with face side out.
  - .7 Do not install damaged or damp boards.
  - .8 Locate edge or end joints over supports.
  - .9 Stagger vertical joints over different studs on opposite sides of wall.

### **3.7 INSTALLATION**

- .1 Erect accessories straight, plumb or level, rigid and at proper plane.
  - .1 Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured.
  - .2 Mitre and fit corners accurately, free from rough edges.

- .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.
  - .1 Seal joints with sealant.
- .4 Install insulating strips continuously at edges of gypsum board and casing beads abutting metal window and exterior door frames, to provide thermal break.
- .5 Construct control joints of preformed units two back-to-back casing beads set in gypsum board facing and supported independently on both sides of joint.
- .6 Provide continuous polyethylene dust barrier behind and across control joints.
- .7 Locate control joints approximate 10m spacing on long runs at approximate 15m spacing on ceilings.
- .8 Install control joints straight and true.
- .9 Construct expansion joints at building expansion and construction joints. Provide continuous dust barrier.
- .10 Install expansion joint straight and true.
- .11 Install access doors to electrical and mechanical fixtures specified in respective sections.
  - .1 Rigidly secure frames to furring or framing systems.
- .12 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.
- .13 Gypsum Board Finish: finish gypsum board walls and ceilings to level 5 finish in accordance with AWCI Levels of Gypsum Board Finish:
  - .1 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.
- .14 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.
- .15 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.
- .16 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .17 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.

- .18 Mix joint compound slightly thinner than for joint taping.
- .19 Apply thin coat to entire surface using trowel or drywall broad knife to fill surface texture differences, variations or tool marks.
- .20 Allow skim coat to dry completely.
- .21 Remove ridges by light sanding or wiping with damp cloth.

**END OF SECTION**



**Part 1 General**

**1.1 SECTION INCLUDES**

- .1 Suspended metal grid ceiling system and perimeter trim.
- .2 Acoustic panels.
- .3 Caulking of perimeter trim to wall.

**1.2 REFERENCES**

- .1 ASTM C635 - Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
- .2 ASTM C636 - Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
- .3 ASTM E1264 - Classification of Acoustical Ceiling Products.
- .4 CISCA (Ceilings and Interior Systems Contractors Association) – Acoustical Ceilings: Use and Practice.

**1.3 SUBMITTALS FOR REVIEW**

- .1 Submit in accordance with Section 01 33 00.
- .2 Product Data: Provide data on metal grid system components, and acoustic units.
- .3 Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

**1.4 QUALITY ASSURANCE**

- .1 Conform to CISCA requirements.

**1.5 ENVIRONMENTAL REQUIREMENTS**

- .1 Maintain uniform temperature of minimum 16 degrees C and a humidity of between 20 and 40 percent prior to, during, and after acoustic unit installation.

**1.6 PROJECT CONDITIONS**

- .1 Sequence work to ensure acoustic ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- .2 Install acoustic units after interior wet work is dry.

## **1.7 EXTRA MATERIALS**

- .1 Provide twelve (12) extra panels of each specified type; store where directed.

## **Part 2 Products**

### **2.1 SYSTEM MATERIALS**

- .1 Acoustical Tiles: to ASTM E1264, for suspended ceiling system, 610mm x 610mm (24" x 24") size, square edge, cut to suit reflected ceiling plan layout and existing tile size:
  - .1 Minimum Noise Reduction Coefficient (NRC) min. 0.55.
  - .2 Minimum Ceiling Attenuation Class (CAC) rating min. 35.
  - .3 Minimum Light reflectance range : Match existing
  - .4 Colour: white.
  - .5 Match existing in texture and finish
- .2 Suspension system: Non-fire rated, intermediate duty system to ASTM C 635, commercial quality galvanized rolled steel, standard white colour;
  - .1 Acceptable Products: Armstrong Prelude XL, CGC Donn DX, Chicago Metallic.
- .3 Accessories: Stabilizer bars, clips, splices, perimeter mouldings, hold down clips, required for suspended grid system.
- .4 Support Channels, Furring and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verify that layout of hangers will not interfere with other work.

### **3.2 INSTALLATION - LAY-IN GRID SUSPENSION SYSTEM**

- .1 Install suspension system in accordance with ASTM C636 and manufacturer's written instructions and as supplemented in this section.
- .2 Install system capable of supporting imposed loads to a deflection of 1/360 maximum.
- .3 Locate system according to reflected plan.
- .4 Install after major above ceiling work is complete.
  - .1 Coordinate the location of hangers with other work and before demountable wall system.

- .5 Hang suspension system independent of walls, columns, ducts, pipes and conduit.
  - .1 Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- .6 Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- .7 Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- .8 Support fixture loads by supplementary hangers located within 150 mm of each corner; or support components independently.
- .9 Do not eccentrically load system, or produce rotation of runners.
- .10 Form expansion joints to accommodate plus or minus 25 mm movement.
  - .1 Maintain visual closure.

### **3.3 INSTALLATION - ACOUSTIC UNITS**

- .1 Install acoustic units in accordance with manufacturer's instructions.
- .2 Fit acoustic units in place, free from damaged edges or other defects detrimental to appearance and function.
- .3 Install units after above ceiling work is complete.
- .4 Install acoustic units level, in uniform plane, and free from twist, warp, and dents.
- .5 Cutting Acoustic Units:
  - .1 Cut to fit irregular grid and perimeter edge trim.
  - .2 Cut square reveal edges to field cut units.

### **3.4 TOLERANCES**

- .1 Maximum variation from flat and level surface: 3 mm in 3 m.
- .2 Maximum variation from plumb of grid members caused by Eccentric Loads: 2 degrees.

**END OF SECTION**

**PART 1      General**

**1.1          SECTION INCLUDES**

- .1      Carpet tile.
- .2      Installation accessories.
- .3      Floor prep and leveling.

**1.2          REFERENCES**

- .1      Canadian General Standards Board (CGSB).
  - .1          CAN/CGSB-4.129-93 (R1977), Carpets for Commercial Use.
- .2      Carpet and Rug Institute (CRI).
  - .1          CRI 104-2002, Standard for Installation Specification of Commercial Carpet.
  - .2          IAQ Carpet Testing Program.

**1.3          SUBMITTALS**

- .1      Submit in accordance with Section 01 33 00.
- .2      Submit product data sheet for each carpet, carpet tile, adhesive, carpet protection and subfloor filler.
- .3      Upon selection of colours and patterns, submit duplicate 600 mm x 600 mm carpet samples in selected colours and patterns.

**1.4          QUALITY ASSURANCE**

- .1      Installer shall be responsible for field measurements to determine carpet layout.
- .2      Comply with CRI 104.
- .3      The Installer is responsible for reviewing carpet manufacturer's published installation instructions prior to installation.
  - .1          This includes understanding dye lots, pattern sequencing, pattern matching and any special instructions.
  - .2          Failure to abide by the manufacturer's instructions could result in a backcharge to the installer for corrections to the installation.
- .4      Installer is responsible for damages to Work performed by others.
- .5      The Installer is responsible for verification of quantities within fourteen (14) days.
- .6      The Installer shall provide take-offs of all carpet and padding, as required for a complete installation.
  - .1          No compensation will be allowed for materials and labour that may be required to install additional carpeting because of incorrect quantity takeoffs.

- .2 Installer is responsible for floor preparation and floor surface levelling.

## **1.5 SEQUENCING**

- .1 Do not install carpet until completion of painting operations.

## **1.6 ENVIRONMENTAL REQUIREMENTS**

- .1 Moisture: Ensure substrate is within moisture limits prescribed by manufacturer.
- .2 Temperature: Maintain ambient temperature of not less than 18°C from 72 hours before installation to at least 72 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:
  - .1 Ventilate area of work by use of approved portable supply and exhaust fans.
  - .2 Provide continuous ventilation during and after carpet application.
  - .3 Run ventilation system 24 hours per day during installation; provide continuous ventilation for 7 days after completion of carpet installation.
- .6 Subfloor Moisture Conditions: Verify that moisture emission rate of not more than 8 lb/1000 sq. ft./24 hours when tested by calcium chloride moisture test in compliance with CRI 104, with subfloor temperatures not less than 12 degrees C.
- .7 Subfloor Alkalinity Conditions: Verify that a pH range of 5 to 9 when subfloor is wetted with potable water and pH hydrion paper is applied.
- .8 Where installing over existing hard tile to remain, float flooring independent of tile below using adhesive tabs supplied by carpet manufacturer. Maintain hard tile installation below in good condition.

## **1.7 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .3 Prevent damage to materials during handling and storage.
- .4 Keep materials under cover and free from dampness.

- .5 Maintain temperature of store room at a minimum of 18°C, and a relative humidity of 65% for at least 48 hours before the start of the installation work.

## **PART 2 Products**

### **2.1 MATERIALS**

- .1 Construction
- .1 Green Label Plus Certified; Recycled content to include fish net by-product (in theme with the Bio-Facilities' marine-related research)
  - .2 Carpet types for patterning must be from the same manufacturer and paired in the same manufacturer's collection:  
Narrow plank style shape
  - .3 Backing System: fibreglass or nylon reinforced vinyl composite: polyolefin;
  - .4 Pile Fibre: CAN/CGSB 4.129: 100% first quality, bulk continuous filament nylon, branded and certified, externally extruded by a fibre producer offering a construction and performance standard testing program for the carpet specified, either type 6.6 or 6, Trilobal or Square Hollowfill Cross-section. Fibre shape to have maximum Modification Ratio of 2.6 for soil release capabilities. Fibre identification to AATCC 20.
  - .5 Colour System: 100% Solution Dyed;
  - .6 Construction:
    - .1 CPT1 to have loop pile.
    - .2 CPT2 to have tufted cut and loop pile
  - .7 Mold Resistant as per ASTM E2471
  - .8 Soil/Stain Protection:
    - .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 (HWB) cleanings.
    - .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 ATTCC Red Dye 40 Reference Scale.
  - .9 Total Weight: minimum 4376 gmlm<sup>2</sup> for carpet tile with fiberglass or nylon reinforced vinyl composite secondary backing and 3187 gmlm<sup>2</sup> for carpet tile with polyolefin secondary backing .
  - .10 Pile Thickness: minimum 2.0 mm, maximum 5.00mm.
  - .11 Pile Density min. 9.5 Kilotex or 5400 density.
  - .12 Recycled Content:
    - .1 Min. 71% post-consumer content
    - .2 Yarn to be 100% recycled nylon
  - .13 Permanent static control: to AATCC 134, 3500 V maximum at 20% RH and 22°C.
  - .14 Colour, texture and pattern to be selected from manufacturer's standard range, available in minimum 8 colours as manufacturing standards.
  - .15 Tuftbind: ASTM D1335 minimum 35H.

- .2 Pattern mix: Two coordinating colours within the carpet series are required to complete the carpet pattern: Refer to floor finishes drawing.
- .3 Acceptable Manufacturers: Interface, Shaw/Patcraft, Tandus, Peerless Contract
- .4 Standard of Acceptance:

CPT1:  
Herringbone with tones  
To coordinate w/ CPT2



CPT2:  
'Textile' texture with teal blue tones  
Mid-century design aesthetic  
Coordinating yarn colours to CPT1



## 2.2 ACCESSORIES

- .1 Adhesives:
  - .1 Liquid adhesive application allowable in Meeting Room 301A only. All other carpeted areas to be floated over existing ceramic tile flooring without damage to subfloor below with Manufacturer's adhesive tabs.
  - .2 Releasable, pressure sensitive adhesive tabs to conform to carpet manufacturers specifications.
  - .3 Acrylic polymer emulsion, resin mixture, latex adhesive.
- .2 Accessories:
  - .1 Seaming tape: types recommended by carpet manufacturer for purpose intended.
  - .2 Seaming sealer adhesive: type recommended by carpet manufacturer for purpose intended.
  - .3 Carpet protection: non-staining heavy-duty Kraft paper.
  - .4 Concrete floor sealer: to CAN/CGSB 25.20, Type 1.
- .3 Primers and adhesives: of types recommended by carpet flooring manufacturer for specific material on applicable substrate, above, on or below grade.
- .4 Sub floor patching/ filler leveling compound: Portland cement base filler, mix with latex and water to form a cementations paste.
- .5 Metal edge strips: Aluminum extruded, smooth, mill finish or stainless steel; with lip to extend under floor finish
  - .1 Type T1: Carpet to existing hard tile
    - .1 Profile to capture and secure edge of carpet in level plane with adjacent tile.



- .2 Type T2: Carpet overlaid on existing hard tile.
  - .1 Ramp down at edge required or have profile no less than .25" height.
  - .2 Profile to capture or abut edge of carpet to secure.





## **PART 3       Execution**

### **3.1       SITE VERIFICATION OF CONDITIONS**

- .1       Ensure concrete floors are clean and dry by using test methods recommended by flooring manufacturer.

### **3.2       PREPARATION**

- .1       Remove existing flooring.
- .2       Remove and prepare slab surface for new flooring to meet manufacturer's installation instructions.
- .3       Remove sub-floor ridges and bumps.
- .4       Profile concrete sub-floor using floor profiler, scarifier or other mechanical method acceptable to Departmental Representative.
  - .1       Provide ICRI CSP 3 surface profile.
- .5       Fill low spots, floor depressions, control or construction joints, cracks, joints, holes and other defects with sub-floor filler.
  - .1       Level floor using cement based leveller feathered out a minimum of 600 mm (24 inches) from edge of area to 0 mm thickness.
  - .2       Prohibit traffic until filler cured and dry.
- .6       Prime Seal concrete slab to flooring manufacturer's printed instructions.
- .7       Test cementitious substrate for porosity, moisture content and alkalinity.
- .8       Ensure substrate has an acceptable level of absorbency.
- .9       For direct glue-down installation, ensure minimum substrate temperature is 18°Celsius.

### **3.3       INSTALLATION - GENERAL**

- .1       Install carpet to pattern as indicated on drawing A6.
- .2       Install carpet and accessories in accordance with manufacturer's recommendations and as specified.
- .3       Apply adhesive and install modular carpet in accordance with manufacturer's written instructions.
- .4       Lay modular carpet with butt seams.
- .5       Fit neatly around architectural, mechanical, electrical and furniture fitments, around perimeter of rooms into recesses, and around projections. Carpet is to be installed prior to demountable wall system.

- .6 Roll modular carpet with appropriate roller for complete contact of carpet with mill-applied adhesive to sub-floor.

### **3.4 CLEANING AND DISINFECTION**

- .1 Follow carpet manufacturer's recommendations for all cleaning procedures.
- .2 Remove adhesive from carpet face, accessories and adjacent surfaces.
- .3 Vacuum clean carpet after installation, as soon as traffic is allowed and during final cleaning of building.
- .4 Protect carpet from damage and soiling due to construction traffic until Final Inspection.

**END OF SECTION**

**Part 1        General**

**1.1        RELATED SECTIONS**

- .1        Section 09 21 16 - Gypsum Board Assemblies.

**1.2        REFERENCES**

- .1        Master Painters Institute (MPI)
  - .1        MPI Architectural Painting Specifications Manual, Latest Edition
- .2        American Society for Testing and Materials (ASTM)
  - .1        ASTM E84 Standard Test Method for Surface Burning Characteristics

**1.3        QUALITY ASSURANCE**

- .1        The Work must be performed by skilled workers under the regulations in the local jurisdiction.
- .2        Apprentices may be employed provided they work under the direct supervision of a skilled worker, in accordance with the regulations governing this trade.
- .3        Comply with the requirements of manufacturer's installation specifications for substrate preparation.

**1.4        SUBMITTALS**

- .1        Submittals in accordance with Section 01 33 00.
- .2        Submit product data and instructions for each wallcovering and wall covering adhesive used.
- .3        Samples: Submit memo samples of wall covering. Min. 150mm x 150mm

**1.5        DELIVERY, STORAGE AND HANDLING**

- .1        Provide extra material from same product run, that matches products installed and that are packaged with protective covering for storage and identified with labels describing contents.
- .2        Packing, Shipping, Handling and Unloading: in accordance with manufacturer's written instructions.
- .3        Remove damaged, opened and rejected materials from site.
- .4        Storage and Protection:
  - .1        Provide and maintain dry, temperature controlled, secure storage.
  - .2        Store materials and supplies away from heat generating devices.
  - .3        Store materials and equipment in well ventilated area with temperature range 7°C to 30°C.

## **1.6 SITE CONDITIONS**

- .1 Heating, Ventilation and Lighting:
  - .1 Provide heating facilities to maintain ambient air and substrate temperatures above 10°C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 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 the required lighting equipment to maintain a lighting level of 323 lux on the surfaces to be painted.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Type II vinyl wall covering
  - .1 min. 20oz weight

### **2.2 COLOURS/Patterns**

- .1 Departmental Representative to approve final selection
- .2 Colour to be of metallic aged copper properties with fine line hexagonal geometric shapes.

Basis of design:



## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

- .1 Comply with wall-covering manufacturers' written installation instructions applicable to products and applications indicated, and as follows:
  - .1 Acclimate material.
  - .2 Keep wall covering off the floor at all times.
  - .3 Lay out wallcovering on a flat, raised table that is greater than the size of the wallcovering.
  - .4 Position sheets with wood facing upward, allowing it to lay perfectly flat for 12 to 24 hours.
  - .5 Keep sheets, as delivered, in sequence

### **3.2 EXAMINATION**

- .1 Examine substrates conditions, with Installer present, for compliance with requirements for levelness, wall plumbness, maximum moisture content, and other conditions affecting performance of the Work..
- .2 Proceed with installation only after unsatisfactory conditions have been corrected..

### **3.3 PREPARATION**

- .1 Comply with Manufacturer's written instructions for surface preparation.
  - .1 Verify that substrate moisture content does not exceed 10% using a moisture meter.
  - .2 Gypsum board Substrate Finish: Level 4 in compliance with AWCI.
- .2 Clean substrates of substances that could impair bond of wall covering, including dirt, oil, grease, mold, mildew, and incompatible primers.
- .3 Prepare substrates to achieve a smooth, dry, clean, structurally sound surface free of flaking, unsound coatings, cracks, and defects.
  - .1 Moisture Content: Maximum of 5 percent on new plaster, concrete, and concrete masonry units when tested with an electronic moisture meter.
  - .2 plaster: Allow new plaster to cure. Neutralize areas of high alkalinity. Prime with primer recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
  - .3 Metals: If not factory primed, clean and apply primer recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
  - .4 Gypsum Board: Prime with primer as recommended in writing by primer/sealer manufacturer and wall-covering manufacturer.
  - .5 Painted Surfaces: Treat areas susceptible to pigment bleeding.
  - .6 Remove electrical cover plates, light fixtures, surface hardware on doors, accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .7 Remove any existing wall coverings or wall applied graphic murals. Skim coat gypsum surface to level 5 finish where wall coverings are removed.

- .4 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements.
- .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.

### **3.4 APPLICATION**

- .1 Comply with wall-covering manufacturers' written installation instructions applicable to products and applications indicated, and as follows:
  - .1 Acclimate material.
  - .2 Keep wall covering off the floor at all times.
  - .3 Lay out wallcovering on a flat, raised table that is greater than the size of the wallcovering.
  - .4 Position sheets with wood facing upward, allowing it to lay perfectly flat for 12 to 24 hours.
  - .5 Keep sheets, as delivered, in sequence. Retain one or more of first six paragraphs below for other wall coverings. Delete if specifying only wood-veneer wall covering.
- .2 Cut wall-covering strips in roll number sequence. Change the roll numbers at partition breaks and corners.
- .3 Install strips in same order as cut from roll.
- .4 Install wall covering without lifted or curling edges and without visible shrinkage.
- .5 Match pattern 60 inches (1525mm) above the finish floor.
- .6 Install seams vertical and plumb at least 6 inches (150 mm) from outside corners and 6 inches (150 mm) from inside corners unless a change of pattern or color exists at corner. Horizontal seams are not permitted.
- .7 Trim edges and seams for color uniformity, pattern match, and tight closure. Butt seams without overlaps or gaps between strips.
- .8 Fully bond wall covering to substrate. Remove air bubbles, wrinkles, blisters, & other defects.

### **3.5 CLEANING**

- .1 Remove excess adhesive at seams, perimeter edges, and adjacent surfaces.
- .2 Use cleaning methods recommended in writing by wall covering manufacturer
- .3 Replace strips that cannot be cleaned.
- .4 Re-install hardware and hardware accessories, electrical plates and covers, and similar items.

**END OF SECTION**

**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 01 81 13- Sustainable Design Requirements

**1.2 REFERENCES**

- .1 American Society for Testing and Materials International (ASTM)
  - .1 ASTM C 423-77, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34-M86(R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CAN/CGSB-92.1-M89, Sound Absorptive Prefabricated Acoustical Units.
- .3 Canadian Standards Association (CSA International)
  - .1 CSA B111-1974(R2003), Wire Nails, Spikes and Staples.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .5 Underwriter Laboratories of Canada (ULC)
  - .1 CAN/ULC-S702-14, Standard for Thermal Insulation, Mineral Fiber, for Buildings.
  - .2 Fire Testing: ASTM E-84 Class A/CAN/ULC S102-10 FAR 25.853(a)

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.
- .3 Provide samples in accordance with Section 01 33 00- Submittal Procedures.
  - .1 Submit duplicate 300 x 300mm sample of each type acoustical unit.
- .4 Shop drawings:
  - .1 Provide shop drawings showing panel mounting systems, including hardware and spacing for each application.

**1.4 QUALITY ASSURANCE**

- .1 Materials and products in accordance with Section 01 81 13 – Sustainable Design Requirements.

**1.5 ENVIRONMENTAL REQUIREMENTS**

- .1 Commence installation after building enclosed and dust generating activities are completed.
- .2 Permit wet work to dry prior to commencement of installation.
- .3 Maintain uniform minimum temperature of 15 degrees C and relative humidity of 20- 40% prior to, during and after installation.

## **1.6 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
- .2 Collect and separate for disposal corrugated cardboard, polystyrene, and plastic packaging material in accordance with Waste Management Plan.

## **1.7 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Suspended acoustical divider felt panel offering visual and acoustical privacy barrier.
  - .1 Colour: full standard range. To be selected by Departmental Representative.
  - .2 Size: 1000 mm x 2400 mm
  - .3 Composition: 100% felted natural wool
  - .4 Environment:
    - .1 100% biodegradable
    - .2 100% VOC free
    - .3 synthetic polyester product is not acceptable
  - .5 Thickness range: 10-12mm
  - .6 Fire Testing:
    - .1 ASTM E-84 Class A/CAN/ULC S102-10 FAR 25.853(a)
    - .2 Must be in accordance to Section 2.3 of the National Fire Code for flame spread rating and smoke development.
  - .7 Acoustics: NRC min. 0.75
  - .8 Anti-static
  - .9 Pattern: CNC cut pattern to be selected by Departmental Representative from manufacturer standard patterns.
  - .10 Installation: to be installed at floor and ceiling on felt manufacturer's hardware.
  - .11 Colour range to include colours made up of mixed fiber colours
- .2 Standard of Acceptance:
  - .1 *Flizfelt*™, *CSI PoshFelt*™, *Interior Felt*™

## **Part 3 Execution**



### **3.1 MANUFACTURER'S INSTRUCTIONS**

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

### **3.2 INSTALLATION**

- .1 Felt panels to be coordinated with furniture. Felt panels should be installed after installation of workstation.
  - .1 Align hanging felt panels with workstation panels.
  - .2 Felt panels to be installed to floor and gypsum wallboard above using manufacturer's standard hardware.

### **3.3 CLEANING**

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Keep acoustic installation and all components clean. Remove blemishes immediately.

### **3.4 PROTECTION**

- .1 Protect finished acoustical wall treatment from damage, per manufacturer's recommendations.
- .2 Remove prior to substantial completion.

**END OF SECTION**

**Part 1            General**

**1.1            RELATED SECTIONS**

- .1        Section 09 21 16 - Gypsum Board Assemblies.

**1.2            REFERENCES**

- .1        Master Painters Institute (MPI)
  - .1        MPI Architectural Painting Specifications Manual, Latest Edition
- .2        American Society for Testing and Materials (ASTM)
  - .1        ASTM D2369-04, Standard Test Method for Volatile Content of Coatings.

**1.3            QUALITY ASSURANCE**

- .1        The Work must be performed by skilled workers under the regulations in the local jurisdiction.
- .2        Apprentices may be employed provided they work under the direct supervision of a skilled worker, in accordance with the regulations governing this trade.
- .3        Comply with the latest requirements of the MPI including those for surface preparation and application of primary or print painting.
- .4        Products used must be on the list of approved products given in the MPI Painting Specification Manual and all the products forming the coating system selected must be from the same manufacturer.

**1.4            SUBMITTALS**

- .1        Submittals in accordance with Section 01 33 00.
- .2        Submit product data and instructions for each paint and coating product to be used.
- .3        Samples: Submit full range colour sample draw-downs.
  - .1        Once colours are selected, provide colour samples of each colour selected on 8 ½ " x 11" paint card for approval.
  - .2        Indicate number of coats on the paint card.
  - .3        Provide number of coats as required to cover completely.

**1.5            DELIVERY, STORAGE AND HANDLING**

- .1        Packing, Shipping, Handling and Unloading: in accordance with manufacturer's written instructions.
- .2        Remove damaged, opened and rejected materials from site.
- .3        Storage and Protection:

- .1 Provide and maintain dry, temperature controlled, secure storage.
- .2 Store materials and supplies away from heat generating devices.
- .3 Store materials and equipment in well ventilated area with temperature range 7°C to 30°C.

## **1.6 SITE CONDITIONS**

- .1 Heating, Ventilation and Lighting:
  - .1 Provide heating facilities to maintain ambient air and substrate temperatures above 10°C for 24 hours before, during and after paint application until paint has cured sufficiently.
  - .2 Provide continuous ventilation for seven days after completion of application of paint.
  - .3 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 the required lighting equipment to maintain a lighting level of 323 lux on the surfaces to be painted.
- .2 Surface and Environmental Conditions:
  - .1 Apply paint finish in areas where dust is no longer being generated by related construction operations or when wind or ventilation conditions are such that airborne particles will not affect quality of finished surface.
  - .2 Apply paint to adequately prepared surfaces and to surfaces within moisture limits.
  - .3 Apply paint when previous coat of paint is dry or adequately cured.
- .3 Existing finishes to remain unless otherwise noted in Wall Finishes plan.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Paint materials shall be listed on the current edition of the MPI Approved Products List.
  - .1 Where selection of finishes from MPI Approved Products List is limited, selection of alternate materials will be at the option of the Departmental Representative.
- .2 Under no circumstance shall paint materials be applied without prior review of VOC limits by the Departmental Representative.
- .3 Provide interior paint products with a VOC range of 0g/L to 151 g/L.

- .4 Provide paint materials for paint systems from single manufacturer.
- .5 Conform to latest MPI requirements for interior painting work including preparation and priming.

## **2.2 COLOURS**

- .1 Departmental Representative will provide Colour Schedule after Contract award.
- .2 Colormatch all colours provided.
  - .1 EX PT – colour to match existing adjacent conditions
  - .2 PT1 – New wall colour 1
  - .3 PT2 – New wall colour 2
- .3 Second coat in three coat system to be tinted slightly lighter colour than top coat to show visible difference between coats.

## **2.3 MIXING AND TINTING**

- .1 Perform colour tinting operations prior to delivery of paint to site.
- .2 Use and add thinner in accordance with paint manufacturer's recommendations.
  - .1 Do not use kerosene or similar organic solvents to thin water-based paints.
- .3 Thin paint for spraying in accordance with paint manufacturer's instructions.

## **2.4 GLOSS/SHEEN RATINGS**

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

<b>Gloss Level</b>	<b>Gloss @ 60 degrees</b>	<b>Sheen @85</b>
G1- matte (flat)	Max 5	Max 10
G 2 – velvet-like	Max 10	10 to 35
G 3 – eggshell	10 to 25	10 to 35
G 4 – satin-like	20 to 35	min 35
G 5 - semi-gloss - traditional	35 to 70	
G 6 – gloss- traditional	70 to 85	
G 7 – high gloss	More than 85	

- .2 Gloss levels (in general) unless noted otherwise:
  - .1 Ceiling : G1 (confirm match to existing adjacent conditions.)
  - .2 New Walls & Meeting Room Walls: G2
  - .3 Existing Walls: Match existing adjacent conditions.
  - .3 Metals : Match existing adjacent conditions

## **Part 3 Execution**

### **3.1 MANUFACTURER'S INSTRUCTIONS**

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

### **3.2 GENERAL**

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

### **3.3 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.
    - .1 If damaged, clean and restore surfaces as directed by Departmental Representative.
    - .2 Take exceptional care not to damage exposed concrete surfaces as cleaning is difficult once damaged.
  - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
  - .3 Protect factory finished products and equipment.
  - .4 Protect passing pedestrians, building occupants and general public in and about the building.
- .2 Surface Preparation:
  - .1 Remove electrical cover plates, light fixtures, surface hardware on doors, accessories and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Identify and store items in secure location and re-installed after painting is completed.
  - .2 Move and cover furniture and portable equipment as necessary to carry out painting operations. Replace as painting operations progress.
  - .3 Place "WET PAINT" signs in occupied areas as painting operations progress. Signs to approval of Departmental Representative.
  - .4 Remove any existing wall coverings or wall applied graphic murals. Skim coat gypsum surface to level 5 finish where wall coverings are removed.
- .3 Clean and prepare surfaces in accordance with MPI Architectural Painting Specification Manual requirements.
- .4 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.

### **3.4 APPLICATION**

- .1 Conform to manufacturer's application instructions unless specified otherwise.
- .2 Apply coats of paint continuous film of uniform thickness.
  - .1 Repaint thin spots or bare areas before next coat of paint is applied.
- .3 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .4 Sand and dust between coats to remove visible defects.
- .5 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as tops of interior cupboards and cabinets and projecting ledges.
- .6 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

### **3.5 INTERIOR PAINT AND COATING SYSTEMS**

- .1 Interior painting systems to be based on MPI Premium grade unless noted otherwise.
- .2 The following is list of principal items only.
  - .1 Surfaces not included in this schedule shall be painted at the discretion of the Departmental Representative.
- .3 Galvanized Metal: interior steel man doors and frames.
  - .1 Shop primed or site primed,
  - .2 Two finish coats Pitt-Glaze WB Water Borne Acrylic Epoxy
- .4 Plywood Mounting Boards: electrical room.
  - .1 INT 6.4P - Pigmented Fire Retardant finish:
    - .1 Apply to ULC approved procedures.
    - .2 Use MPI#64 Fire Retardant Coating, Latex, Interior, Flat (ULC Approved); VOC range 51 g/L.
- .5 Gypsum Board - Dry Areas: Drywall surfaces, cement board, other wall and ceiling panels incl. wall-mounted equipment to be painted-out.
  - .1 INT 9.2B - HIPAC Latex:
    - .1 One coat Latex Primer Sealer,
    - .2 Two coats HIPAC Latex.

### **3.6 MECHANICAL AND ELECTRICAL EQUIPMENT**

- .1 Where wall paint scope is noted, paint finished area exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment with colour and finish to match adjacent surfaces, except as indicated.

- .2 Other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
- .3 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .4 Do not paint over nameplates.
- .5 Keep sprinkler heads free of paint.

### **3.7 SITE TOLERANCES**

- .1 Walls: no defects visible from a distance of 1000 mm at 90 degrees to surface.
- .2 Ceilings: no defects visible from floor at 45 degrees to surface when viewed using final lighting source.
- .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area. Min. 3 coats for dark colours.

### **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 splashings on exposed surfaces that were not painted.
- .4 Remove smears and spatter immediately as operations progress, using compatible solvent.
- .5 Protect freshly completed surfaces from paint droppings and dust to the satisfaction of the Departmental Representative.
- .6 Avoid scuffing newly applied paint.

**END OF SECTION**