

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 07 92 00 – Joint Sealants.
- .2 Section 08 31 00 – Access Doors – Mechanical.
- .3 Section 09 91 23 - Painting.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C475/C475M-12. Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .2 ASTM C557-03(2009)e1. Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
 - .3 ASTM C840-11. Standard Specification for Application and Finishing of Gypsum Board.
 - .4 ASTM C954-11. Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
 - .5 ASTM C1002-07, Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .6 ASTM C1047-10a. Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - .7 ASTM C1288-99(2010). Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets.
 - .8 ASTM C1396/C1396M-13. Standard Specification for Gypsum Board.
 - .9 ASTM C1280-09, Standard for Application of Gypsum Sheathing Board.
- .2 Association of the Wall and Ceilings Industry (AWCI).
 - .1 AWCI 101a-1997. Recommended Levels of Gypsum Board Finish - Matrix Edition.
- .3 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-51.34-M86(R1988). Vapour Barrier, Polyethylene Sheet for Use in Building Construction.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures. Submit 300 mm long samples of vinyl faced gypsum board and 300 mm long samples of corner and casing beads.

GYPSUM BOARD ASSEMBLIES**1.4 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 other elements and damage from construction operations and other causes.
- .3 Handle gypsum board panels to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

1.5 SITE ENVIRONMENTAL REQUIREMENTS

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

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Waste Management and Disposal plan as specified in Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities. Collect and separate for disposal paper, plastic, polystyrene and corrugated cardboard packaging material in appropriate on-site containers for recycling in accordance with Waste Management Plan.
- .3 Divert unused gypsum, metal and wood components from landfill to appropriate recycling facility for disposal approved by Departmental Representative.

Part 2 Products**2.1 MATERIALS**

- .1 Standard board: to ASTM C1396/C1396M. Type X, minimum 12.7 and 15.9 mm thick, 1200 mm wide x maximum practical length see details for thickness. Ends square cut, edges bevelled.
- .2 Cement board: to ASTM C1288. Mixture of portland cement, aggregate, sand, selected filler and polymer coated glass fibre reinforcing mesh. 15.9 mm thick, 1200 mm wide x maximum practical length.
- .3 Metal furring runners, hangers, tie wires, inserts, anchors: manufacturer's standard profiles to suit specific requirements.

GYPSUM BOARD ASSEMBLIES

- .4 Drywall furring channels: 0.5 mm core thickness, galvanized steel channels for screw attachment of gypsum board.
- .5 Steel drill screws: to ASTM C1002. For application of gypsum board into heavier gauge steel studs: to ASTM C954.
- .6 Cementitious Board Fasteners: board manufacturer's purpose made screws, corrosion resistant steel, self-drilling points, counter-sink heads to prevent strip-out. Designed for application to steel stud construction.
- .7 Stud adhesive: to ASTM C557. For attachment of gypsum board panels to steel studs without mechanical fasteners.
- .8 Casing beads, corner beads, control joints, edge trim, and shadow reveal transition mouldings: to ASTM C1047, zinc coated by electrolytic process. 0.5 mm base thickness, perforated flanges, one piece length per location.
- .9 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
- .10 Acoustic sealant: as specified in Section 07 92 00 - Joint Sealants.
- .11 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .12 Joint compound: to ASTM C475, asbestos-free. Manufacturer's premixed commercial grade compound.

Part 3 Execution**3.1 ERECTION**

- .1 Do application and finishing of gypsum board in accordance with ASTM C840 except where specified otherwise.
- .2 Do application of gypsum sheathing in accordance with ASTM C1280.
- .3 Erect hangers and runner channels for suspended gypsum board ceilings in accordance with 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 and grilles. Install 19 x 64 mm furring channels parallel to, and at exact locations of steel stud partition header track.
- .7 Furr for gypsum board faced vertical bulkheads within and at termination of ceilings.
- .8 Furr above suspended ceilings for gypsum board fire and sound stops and to form plenum areas as indicated.

GYPSUM BOARD ASSEMBLIES

- .9 Install wall furring for gypsum board wall finishes in accordance with ASTM C840, except where specified otherwise.
- .10 Furr openings and around built-in equipment, cabinets, access panels, on four sides. Extend furring into reveals. Check clearances with equipment suppliers.
- .11 Furr duct shafts, beams, columns, open web steel joists, pipes and exposed services where indicated.
- .12 Erect drywall resilient furring transversely across studs, 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 with 25 mm drywall screw.

3.2 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical work are approved.
- .2 Apply single gypsum board to metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm on centre.
- .3 Single-Layer Application:
 - .1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840.
 - .2 Apply gypsum board to walls vertically or horizontally, providing sheet lengths that will minimize end joints.
- .4 Multiple-Layer Application:
 - .1 Apply gypsum board on ceilings prior to application of walls in accordance with ASTM C840.
 - .2 Apply gypsum board to walls staggering joints in each successive layer and rotating panels from vertical to horizontal, providing sheet lengths that will minimize end joints.
 - .3 Apply compound and tape to joints on each successive layer prior to proceeding to board the next.
- .5 Cement Board Application. Apply cement board to steel stud framing where indicated in the drawings and wherever Ceramic Tile wall finishes are to be applied. Use manufacturer's proprietary screw fasteners, purpose made for attachment of cement board to steel framing. Apply multiple layers where indicated.
- .6 Apply 2 rows of 12 mm diameter bead of acoustic sealant continuously around periphery of each face of partitioning at each successive layer to seal gypsum board/structure junction where partitions abut fixed building components. Seal full perimeter of cut-outs around electrical boxes, and ducts in partitions where perimeter sealed with acoustic sealant.
- .7 Custom cut boards to match steel deck profile Apply 2 rows of 12 mm diameter bead of sealant continuously around profile of each face of partitioning at each successive layer to seal gypsum board

GYPSUM BOARD ASSEMBLIES

- .8 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
- .9 Install gypsum board on walls vertically to avoid end-butt joints. At stairwells and similar high walls, install boards horizontally with end joints staggered over studs, except where local codes or fire-rated assemblies require vertical application.
- .10 Install gypsum board with face side out.
- .11 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.
- .12 Where indicated, apply gypsum board using adhesive to furring or framing.

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.
- .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 Install insulating strips continuously at edges of gypsum board and casing beads abutting window and exterior door frames, to provide thermal break.
- .5 Install access doors as specified in Section 08 31 00 - Access Doors - Mechanical to provide service access to electrical and mechanical fixtures specified in respective sections. Rigidly secure frames to furring or framing systems.

3.4 BUILDING JOINTS

- .1 Control Joints. Construct control joints consisting of two back-to-back casing beads set in joint compound and supported independently on both sides of joint. Provide continuous polyethylene dust barrier behind and across control joints.
- .2 Locate vertical control joints where indicated or at changes in substrate construction, at maximum 10 m spacing on long corridor runs. Locate horizontal control joints in ceilings at maximum 15 m spacing. Install control joints straight, plumb and true.
- .3 Expansion Joints. Construct expansion joints as detailed, at building expansion and construction joints. Provide continuous polyethylene dust barrier spanning across the joint. Install expansion joint straight plumb and true.

3.5 FINISHING

- .1 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.

GYP SUM BOARD ASSEMBLIES

- .2 Gypsum Board Finish: finish gypsum board walls and ceilings to following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:
 - .1 Level 2: Embed tape for joints and interior angles in joint compound and apply one separate coat of joint compound over joints, angles, fastener heads and accessories. Surfaces free of excess joint compound. Tool marks and ridges are acceptable. For use in plenum areas above finished ceilings.
 - .2 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 as follows: Mix joint compound slightly thinner than for joint taping. Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks. Tool entire surface smooth and free of tool marks and ridges. Allow skim coat to dry completely. Remove final ridges by light sanding or wiping with damp cloth. For use on all surfaces to receive final paint finish.
- .3 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.
- .4 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.
- .5 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.
- .6 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for surface finish.
- .7 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.

3.6 FIRE RATED ASSEMBLIES

- .1 Construct fire rated assemblies where indicated. Construct to details and designations as indicated in the drawings.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 07 92 00 - Joint Sealants
- .2 Section 05 50 00 - Metal Fabrications.
- .3 Section 09 21 16 - Gypsum Board Assemblies.

1.2 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM C645-11a. Standard Specification for Nonstructural Steel Framing Members.
 - .2 ASTM C754-11. Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

1.3 QUALITY ASSURANCE

- .1 Submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Submit 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 and corrugated cardboard packaging material in appropriate on-site containers for recycling in accordance with Waste Management Plan.
- .4 Divert unused metal materials from landfill to metal recycling facility approved by Departmental Representative.
- .5 Divert unused gypsum materials from landfill to recycling facility approved by Departmental Representative.

NON-STRUCTURAL METAL FRAMING**Part 2 Products****2.1 MATERIALS**

- .1 Non-load bearing channel stud framing: to ASTM C645, 42, 64, 92 mm stud size, roll formed from 0.53 mm thickness hot dipped galvanized steel sheet, for screw attachment of gypsum board. Knock-out service holes at 460 mm centres.
- .2 Floor and ceiling tracks: to ASTM C645, in widths to suit stud sizes, 32 mm flange height.
- .3 Metal channel stiffener: manufacturer's standard sizes, 1.4 mm thick cold rolled steel, coated with rust inhibitive coating.
- .4 Acoustical sealant: to Section 07 92 00 Joint Sealants.
- .5 Acoustic Insulation strip: neoprene, moisture resistant 3 mm thick foam strip, 60 mm wide, with self-sticking adhesive on one face.

Part 3 Execution**3.1 ERECTION**

- .1 Install steel stud systems in accordance with ASTM C754 and manufacturers written instructions.
- .2 Align partition tracks at floor and ceiling and secure at 600 mm on centre maximum.
- .3 Extend partitions to ceiling height except where noted otherwise on drawings.
- .4 Install continuous acoustic insulating strips below bottom track and above top track.
- .5 Place studs vertically at 305 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.
- .6 Install double studs at the door frame opening. Install anti-spread bracing approximately 1200 mm from the bottom of the wall between door frame double stud and the adjacent stud on both sides of the frame.
- .7 Erect metal studding to tolerance of 1:1000.
- .8 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.
- .9 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Sections.
- .10 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50 mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.

NON-STRUCTURAL METAL FRAMING

- .11 Erect track at head of door/window openings and sills of sidelight/window openings 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.
- .12 Frame openings and around built-in equipment, cabinets, access panels, on four sides. Extend framing into reveals. Check clearances with equipment suppliers.
- .13 Provide solid wooden blocking secured between studs for attachment of handrails, washroom fixtures, behind lavatory basins, toilet and washroom accessories, kitchen cabinets, attached millwork, other fixtures including grab bars and towel rails and as indicated. Secure between studs through webs and through face flange of stud.
- .14 Install steel studs or furring channel between studs for attaching electrical and other boxes.
- .15 Install two continuous beads of acoustical sealant or insulating strip 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

CERAMIC TILING**Part 1 General****1.1 RELATED SECTIONS**

- .1 Section 07 92 00 - Joint Sealants.

1.2 REFERENCES

- .1 American National Standards Institute (ANSI)/Ceramic Tile Institute (CTI).
 - .1 ANSI A108.1-2013. American National Standard Specifications for the Installation of Ceramic Tile. Includes: ANSI A108.01, .02, .1A, .1B, .1C, .4, .5, .6, .8, .9, .10, .11, .12, .13, .14, .15, .16, and .17 Installation Standards.
 - .2 ANSI A118.4-1999(R2005). Specification for Latex Portland Cement Mortar (included in ANSI A108.1).
 - .3 ANSI A118.6-2010 (R). American National Standard Specifications for Standard Cement Grouts for Tile Installation.
 - .4 ANSI A118.10-2008 (R). American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation.
- .2 American Society for Testing and Materials (ASTM International) International.
 - .1 ASTM C144-11. Standard Specification for Aggregate for Masonry Mortar.
 - .2 ASTM C207-06(2011). Standard Specification for Hydrated Lime for Masonry Purposes.
 - .3 ASTM C979/C979M-10. Standard Specification for Pigments for Integrally Colored Concrete.
- .3 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-51.34-M86(R1988). Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
 - .2 CAN/CGSB-75.1-M88. Tile, Ceramic.
 - .3 CAN/CGSB-25.20-95. Surface Sealer for Floors.
- .4 Canadian Standards Association (CSA International).
 - .1 CAN/CSA-A3000-08. Cementitious materials compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
- .5 Terrazzo Tile and Marble Association of Canada (TTMAC).
 - .1 TTMAC Specification Guide 09300 - Tile Installation Manual 2012/2014.

1.3 PRODUCT DATA

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Include manufacturer's information on:
 - .1 Ceramic tile, marked to show each type, size, and shape required.
 - .2 Cementitious tile backer board.
 - .3 Divider strip.
 - .4 Elastomeric membrane and bond coat.
 - .5 Reinforcing tape.

CERAMIC TILING

- .6 Levelling compound.
- .7 Latex-Portland cement mortar.
- .8 Commercial Portland cement grout.
- .9 Waterproofing membrane.
- .10 Fasteners.

1.4 SAMPLES

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Wall tile: submit duplicate, 300 x 300 mm sample panels of each colour, texture, size, and pattern of tile.
- .3 Trim shapes, bullnose cap and cove including bullnose cap and base pieces at internal and external corners of vertical surfaces, each type, colour, and size.
- .4 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation.

1.5 QUALITY ASSURANCE

- .1 Employ skilled workers trained and experienced in tile work, and registered as members of the Terrazzo Tile and Marble Association of Canada.
- .2 Install work in accordance with requirements of TTMAC Tile Manual - Specification Guide 09 30 00.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver materials in containers with labels legible and intact and grade-seals unbroken.
- .2 Store material so as to prevent damage or contamination.
- .3 Store materials in a dry area, protected from freezing, staining and damage.
- .4 Store cementitious materials on a dry surface.

1.7 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 all packaging materials at appropriate recycling facilities.
- .3 Collect and separate packaging material in paper, plastic, polystyrene and corrugated cardboard in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Unused adhesive, sealant and coating materials must be disposed of at an official hazardous material collections site as approved by the Departmental Representative.
- .5 Unused adhesive, sealant and coating materials must not be disposed of into the sewer system, into streams, lakes, onto the ground or in other location where it will pose a health or environmental hazard.

CERAMIC TILING**1.8 ENVIRONMENTAL CONDITIONS**

- .1 Maintain ambient air temperature and surface temperature at ceramic tile installation area above 12 °C for 48 hours before, during, and 48 hours after, installation.
- .2 Do not install tiles at temperatures less than 12 °C or above 38 °C.

1.9 EXTRA MATERIAL

- .1 Provide maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide a minimum of 1 unopened carton and no less than 5 % of each type and colour of tile required for project for maintenance use. Store where directed.
- .3 Maintenance material to be of same production run as installed material.

Part 2 Products**2.1 WALL TILE**

- .1 Wall Tile C1 (Kitchen Backsplash): Size: 100 mm x 400 mm x 6 mm thick nominal with Glossy finish. For installation as wall tile, as indicated. Install with 3 mm wide joints.
 - .1 Wall tile to be chosen by the Departmental Representative upon contract award. Selection will be from the full range of extended and customized finishes and tile patterns available from the manufacturer.

2.2 MORTAR AND GROUT

- .1 Latex Portland cement mortar: to ANSI A118.4. Two component, commercially prepared, composed of Portland cement, selected inert fillers and specially formulated latex additives for increased bond strength and impact resistance. Minimum shear strength 2.6 MPa. Prepare mortar to manufacturer's instructions.
- .2 Grout: Wall grout. Commercially prepared, latex-portland cement grout: to ANSI A118.6. Fast curing, high early strength, polymer-modified, stain resistant grout. Prepare grout to manufacturer's instructions. Grout colour to be chosen by the Departmental Representative.
 - .1 Colouring pigments to be added to grout by manufacturer.
 - .2 Pure mineral pigments, limeproof and nonfading, complying with ASTM C979.
 - .3 Job coloured grout are not acceptable.

2.3 MORTAR AND ADHESIVE MATERIALS

- .1 Portland cement: to CSA-A5, type 10.
- .2 Sand: to ASTM C144, passing 16 mesh.
- .3 Hydrated lime: to ASTM C207, Type N, NA, S or SA.
- .4 Water: potable and free of minerals and chemicals which are detrimental to mortar and grout mixes.

CERAMIC TILING**2.4 ACCESSORIES**

- .1 Vertical Wall corner edge strips: purpose made extruded, continuous, solid stainless steel bullnosed edge trim for all exposed tiled vertical and horizontal edges and corners. Bullnose to be 6mm radius. Height minimum 10 mm. Horizontal leg minimum 25 mm. Colour, pattern and texture to be selected from multiple manufacturer's standard and custom range of products.
- .2 Sealant: in accordance with Section 07 92 00 - Joint Sealants.

2.5 CLEANING PRODUCTS

- .1 Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and levelling compounds and elastomeric waterproofing membrane and coat.
- .2 Materials containing acid or caustic material are not acceptable.

Part 3 Execution**3.1 GENERAL**

- .1 Perform all operations in accordance with manufacturers written application instructions except where specified otherwise. Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and datasheet.
- .2 Perform all tile work in accordance with TTMAC Specification Guide 09300 - Tile Installation Manual except where specified otherwise. Where TTMAC details vary from manufacturers written instructions, obtain clarification from Departmental Representative prior to commencing installations.
- .3 Install Tile in accordance with ANSI A108.1

3.2 PREPARATION

- .1 Prepare wall surfaces to be as free as possible from surface obstacles.
- .2 Protect surfaces as well as all mechanical and electrical services in areas of work from damage. If damaged, clean and restore such surfaces as approved by Departmental Representative.
- .3 Protect floors, walls and adjacent spaces from damage caused by cleaning and preparation operations.

3.3 EXISTING CONDITIONS

- .1 Verify existing conditions are ready to receive work. Notify Departmental Representative in writing of unacceptable substrate conditions.
- .2 Thoroughly clean existing surfaces that are to receive tile finish to ensure the removal of all grease, oil or dust film. Ensure substrate surfaces are clean, dimensionally stable and free of contaminants such as oil, sealers and curing compounds. Ensure concrete floors have not been treated with curing compounds.

CERAMIC TILING**3.4 EXECUTION**

- .1 Do tile work in accordance with TTMAC Specification Guide 09300, Tile Installation Manual, except where specified otherwise.
- .2 Apply tile or backing coats to clean and sound surfaces.
- .3 Apply patching and leveling coats to TTMAC details to correct any defects in the substrate.
- .4 Fit tile around corners, fitments, fixtures, drains and other built-in objects. Maintain uniform joint appearance. Cut edges smooth and even. Do not split tiles.
- .5 Maximum surface tolerance 1:800.
- .6 Clean backs of tiles and back butter tiles to ensure a 95 % bond coverage. Set tiles in place while bond coat is wet and tacky, prior to skinning over. Slide tile back and forth to ensure a proper bond and level surface. Avoid slippage.
- .7 Clean excess mortar from surface prior to final set. Keep 2/3 of depth of grout joints free of setting material.
- .8 Make joints between tile uniform and approximately 3mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.
- .9 Lay out tiles so perimeter tiles are minimum 1/2 size.
- .10 Sound tiles after setting and replace hollow-sounding units to obtain full bond.
- .11 Install vertical wall corner edges strips to all locations where edges of wall tile are exposed. Install edge strips level and plumb to completely enclose tile edges.
- .12 Allow minimum 24 hours after installation of tiles, before grouting.
- .13 Clean installed tile surfaces after installation and grouting cured.

3.5 WALL TILE

- .1 Install ceramic wall tile in accordance with TTMAC Detail 305W-2009/2010. Tile Installed on Cementitious Backer Unit (Cement Board) - Thin Set Method / Walls. Detail A - Interior Wet / Dry areas.
- .2 Apply tape to all joints in cement board. Fill joints with dry set mortar and sand flush with boards.
- .3 Apply slight leveling coat if required to achieve specified surface tolerances and to ensure a plumb, coplanar, flat wall surfaces.
- .4 Apply tile to prepared wall surface using a latex-portland cement mortar bond coat. Apply tile to bond coat with minimum 95 % surface contact. Install commercial Portland cement grout in accordance with TTMAC detail 305W-2002.

3.6 GROUTING

- .1 Allow minimum 24 hours after installation of tiles, before grouting. Pre-seal tiles requiring protection from grout staining. Force grout into joints to ensure dense finish.

CERAMIC TILING

- .2 Remove excess grout and polish with clean cloths. Clean installed tile surfaces after installation and grouting cured. Apply sealer to grout joints in accordance with manufacturer's instructions.

- .3 Install latex Portland grout in non-shower areas.

3.7 PROTECTION

- .1 Protect finished areas from traffic until setting materials have sufficiently cured. Refer to TTMAC Tile Specification Guide 09300. Protect grouted areas from traffic for 24 hours after grouting. Provide protective covering in traffic areas until substantial completion of the work. Protect wall tiles and bases from impact, vibration, heavy hammering on adjacent and opposite walls for at least 14 days after installation.

3.8 CLEANING

- .1 Upon completion of the installation, remove all surplus materials, dirt and debris caused by the work of this section. Leave the premises clean and ready for use.

END OF SECTION

Part 1 General**1.1 RELATED REQUIREMENTS**

- .1 Section 09 53 00.01 - Acoustical Suspension.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM).
 - .1 ASTM E1264-08e1. Standard Classification for Acoustical Ceiling Products.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit duplicate full size samples of each type of acoustical units.
- .3 Submit manufacturer's standard product data sheets. Submit WHMIS MSDS sheets.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Collect and separate for recycling all salvaged ceiling tiles that are not required for reuse in the new ceiling systems in accordance with the Waste Management and Disposal Plan as specified in Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

1.5 ENVIRONMENTAL REQUIREMENTS

- .1 Permit wet work to dry before commencement of installation.
- .2 Maintain uniform minimum temperature of 15°C and humidity of 20 - 40 % before and during installation.
- .3 Store materials in work area 48 hours prior to installation.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Protect on site stored or installed absorptive material from moisture damage.

1.7 MAINTENANCE MATERIALS

- .1 Provide additional materials for Maintenance use in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Ensure extra materials are from same production run as installed materials.
- .3 Clearly identify each type of acoustic unit, including colour and texture.
- .4 Provide 5 % of total amount of new tile used on project in complete full boxed cartons.
- .5 Deliver to Departmental Representative and store where approved.

ACOUSTICAL PANEL CEILINGS

Part 2 Products**2.1 MATERIALS**

- .1 TYPE AT1 (5th Floor): New components, Acoustic panel units for existing suspended ceiling system: to ASTM E1264.
 - .1 Size: 610 x 1525 x 19 mm thick.
 - .2 Surface texture: non-directional. Mineral core with reinforced mat face. Surface washability exceeds 1,000 cycles with sanitizing chemicals.
 - .3 Type IV, Form 2, Pattern G/Type 4
 - .4 65-80% recycled content.
 - .5 Finish: scuff resistant painted scrim
 - .6 Fire resistance: Class A.
 - .7 Noise reduction coefficient (NRC): designation of 0.65 - 0.75
 - .8 Light reflectance range: 0.85 to 0.95.
 - .9 Edge type: Square edge.
 - .10 Colour: white.
 - .11 Shape: flat.
- .2 TYPE AT2 (7th Floor): New components, Acoustic panel units for new suspended ceiling system: to ASTM E1264.
 - .1 Size: 610 x 1525 x 19 mm thick.
 - .2 Surface texture: non-directional. Mineral core with reinforced mat face. Surface washability exceeds 1,000 cycles with sanitizing chemicals.
 - .3 Type IV, Form 2, Pattern G/Type 4
 - .4 65-80% recycled content.
 - .5 Finish: scuff resistant painted scrim
 - .6 Fire resistance: Class A.
 - .7 Noise reduction coefficient (NRC): designation of 0.65 - 0.75
 - .8 Light reflectance range: 0.85 to 0.95.
 - .9 Edge type: Square edge.
 - .10 Colour: white.
 - .11 Shape: flat.

Part 3 Execution**3.1 INSTALLATION**

- .1 Do not install acoustical panels and tiles until work above ceiling has been inspected by Departmental Representative.
- .2 Install acoustical panels and tiles in ceiling suspension system.
- .3 Install salvaged acoustical panels in ceiling suspension system. Install acoustical units with directional pattern running in same direction. Refer to reflected ceiling plan.

ACOUSTICAL PANEL CEILINGS

- .4 Grade and organize salvaged panels so that there is minimal colour variance between panels in any one area. Replace panels that exhibit too much variation to approval of Departmental Representative.
- .5 Scribe acoustic units to fit adjacent work. Butt joints tight, terminate edges with moulding.

3.2 INTERFACE WITH OTHER WORK

- .1 Co-ordinate with Section 09 53 00.01 - Acoustical Suspension.
- .2 Co-ordinate ceiling work to accommodate components of other sections, such as light fixtures, diffusers, speakers, sprinkler heads, to be built into acoustic ceiling components.

END OF SECTION

ACOUSTICAL SUSPENSION**Part 1 General****1.1 RELATED REQUIREMENTS**

- .1 Section 09 21 16 - Gypsum Board Assemblies.
- .2 Section 09 51 13 - Acoustical Panel Ceilings.

1.2 REFERENCES

- .1 American Society for Testing and Materials (ASTM International)
 - .1 ASTM C635/C635M-13. Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 - .2 ASTM C636/C636M-13. Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Shop Drawings. Submit reflected ceiling plans for special grid patterns as indicated. Indicate lay-out, insert and hanger spacing and fastening details, splicing method for main and cross runners, location of access splines, change in level details, access door dimensions, and locations and acoustical unit support at ceiling fixture. Indicate lateral bracing and accessories.
- .3 Submit samples. Submit one representative model of each type of ceiling suspension system. System to show basic construction and assembly, treatment at walls, recessed fixtures, splicing, interlocking, finishes, acoustical unit installation.

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials as specified in Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

1.5 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 Design Requirements: maximum deflection: 1/360th of span to ASTM C635 deflection test.
- .2 Type AT1, salvaged and new components. Main 1525mm x 1525 mm grid to remain from existing ceiling system. Cross tees to be: intermediate duty system to ASTM C635. Basic materials for suspension system: commercial quality cold rolled steel, zinc coated, pre-

ACOUSTICAL SUSPENSION

finished. Suspension system: non-fire rated, two directional exposed tee bar. Panel type/size varies by location. Refer to drawings.

- .1 1525 mm (610 / 305 / 610) x 1525 mm exposed grid, two directional system. Exposed tee bar grid, Components die cut. Main tee existing. Cross tee with rectangular bulb. Web extended to form positive interlock with main tee webs. Lower flange extended and offset to provide flush intersection.
- .3 Type AT2, new components: Intermediate duty system to ASTM C635. Basic materials for suspension system: commercial quality cold rolled steel, zinc coated, prefinished. Suspension system: non fire rated, two directional exposed tee bar. Panel type/size varies by location. Refer to drawings.
 - .1 1525 mm (610 / 305 / 610) x 1525 mm exposed grid, two directional system. Exposed tee bar grid, Components die cut. Main tee with double web, rectangular bulb and 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.
 - .2 40 mm high main tee with 12.5 mm high top web and 25 mm exposed face. Shop painted. Colour: flat sheen white. Maximum 1200 mm hanger spacing. Provide matching perimeter wall angle.
 - .3 Perimeter trim, recessed shadow-profile providing a 12.7mm x 12.7mm reveal at the wall intersection.
- .4 Accessories:
 - .1 Hanger wire: galvanized soft annealed steel wire. 3.6 mm diameter.
 - .2 Hanger inserts: purpose made.
 - .3 Carrying channels: 38 x 65 mm channel, of 1.6 mm thick galvanized steel.
 - .4 Accessories: splices, clips, wire ties and retainers to complement new suspension system components, as recommended by system manufacturer.
 - .5 Shadow Mould: provide matching shadowline wall moulding to complement suspension system components, as recommended by system manufacturer

Part 3 Execution**3.1 EXISTING SUSPENSION SYSTEM**

- .1 Carefully salvage existing Metric components for reuse in new ceilings. Obtain written approval of Departmental Representative for the use of any new components. Do not reuse hanger wire.
- .2 Salvage for re-use only components that are clean, unmarked and undamaged.
- .3 Ceiling components that are not required for the new ceilings are to be handled as identified in the Waste Management Plan as specified in Section 01 74 21 - Construction / Demolition Waste Management and Disposal.

ACOUSTICAL SUSPENSION**3.2 INSTALLATION**

- .1 Install new and salvaged ceiling suspension system in accordance with ASTM C636 except where specified otherwise.
- .2 Install ceiling suspension system in accordance with typical manufacturer's written instructions. Install suspension system in accordance with Certification Organizations tested design requirements.
- .3 Do not erect ceiling suspension system until work above ceiling has been inspected by Departmental Representative.
- .4 Secure hangers to overhead structure using attachment methods acceptable to Departmental Representative.
- .5 Install hangers spaced at maximum 1200 mm centres and within 150 mm from ends of main tees. Provide new hanger wire throughout.
- .6 Lay out system in accordance with reflected ceiling plan. Lay out centre line of ceiling both ways, to provide balanced borders at room perimeter, with border units not less than 50% of standard unit width.
- .7 Ensure suspension system is co-ordinated with location of related components.
- .8 Install wall moulding to provide correct ceiling height.
- .9 Completed suspension system to support super-imposed loads, such as lighting fixtures, diffusers, grilles and speakers.
- .10 Support at light fixtures and diffusers with additional ceiling suspension hangers within 150 mm of each corner and at maximum 600 mm around perimeter of fixture.
- .11 Interlock cross member to main runner to provide rigid assembly.
- .12 Frame at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights.
- .13 Finished ceiling system to be square with adjoining walls and level within 1:1000.
- .14 Expansion joints. Erect two main runners parallel, 25 mm apart, on building expansion joint lines. Lay in strip of acoustic tile/board, painted black, 25% narrower than space between 2 'T' bars.

3.3 CLEANING

- .1 Touch up scratches, abrasions, voids and other defects in painted surfaces.

END OF SECTION

Part 1 General**1.1 REFERENCES**

- .1 American Society for Testing and Materials (ASTM International).
 - .1 ASTM F150-06 (2013). Standard Test Method for Electrical Resistance of Conductive and Static Dissipative Resilient Flooring.
- .2 Canadian Standards Association. (CSA).
 - .1 CSA A126.2-M1984. Conductive and Static Dissipative Resilient Tile.
- .3 Underwriters Laboratories of Canada (ULC).
 - .1 CAN/ULC-S102.2-10-EN. Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit duplicate samples of tile in size specified. Submit 300 mm long sections of baseboard and edge strips.

1.3 CLOSEOUT SUBMITTALS

- .1 Provide maintenance data for resilient flooring for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Submit letter stating that the moisture content of concrete slab and the ph of the surface is within manufacturer's written guidelines for new flooring.

1.4 EXTRA MATERIALS

- .1 Provide maintenance materials of resilient tile flooring, base and adhesive in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide 2.0 m² of each colour, pattern and type flooring material required for project for maintenance use. Provide in nearest full cartons only. Provide 4 lineal meters of resilient base.
- .3 Extra materials to be from same production run as installed materials.
- .4 Clearly identify floor tile. Deliver to Departmental Representative upon completion of the work of this section. Store where directed by Departmental Representative.

1.5 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.

RESILIENT TILE FLOORING

- .2 Provide a high ventilation rate, with maximum outside air, during installation and for a minimum of 72 hours after installation. Where possible, provide additional fans to vent directly to the outside. Maintain extra ventilation for as long as practical and to approval of Departmental Representative.

1.6 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
- .2 Do not dispose of unused sealant and adhesive materials into landfill. Divert materials to municipal hazardous materials depot approved by Departmental Representative.
- .3 Divert unused metal from landfill to metal recycling facility approved by Departmental Representative.
- .4 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .5 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.

Part 2 Products**2.1 MATERIALS**

- .1 New vinyl tile: premium grade commercial vinyl composition tile. Textured surfaced. 3.0 mm thick, 152 x 915 mm. Colour and patterns selected by Departmental Representative from full and extended range of colours. Factory prefinished. Vinyl material to ASTM F1066, Composition 1 - non asbestos. Class 1 - solid colour or Class 2 - through pattern tile.
- .2 M1 vinyl base: solid vinyl, coved base. Single length per location. 100 mm high x 3.6 mm thick. Including premoulded end stops and external corners. Colour selected by Departmental Representative from full, custom and extended range of colours.
- .3 Primers and adhesives: waterproof, of types recommended by flooring manufacturer for static dissipative tile on concrete substrate, on or below grade. Low VOC.
- .4 High strength sub-floor filler and leveler: 2 part, latex modified, Portland cement mortar requiring no water to produce cementitious paste. As recommended by manufacturer for use with their product. Minimum compressive strength of 25 MPa.
- .5 Edging to floor penetrations: stainless steel, type recommended by flooring manufacturer.

RESILIENT TILE FLOORING**Part 3 Execution****3.1 MANUFACTURER'S INSTRUCTIONS**

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

3.2 SITE VERIFICATION OF CONDITIONS

- .1 Ensure concrete floors are clean and dry by using test methods recommended by flooring manufacturer.
- .2 Test sub floor for moisture content in accordance with flooring manufacturer's instructions using the Vaprecision vapour emission test. Perform moisture condition test in each major area. A minimum of 1 test per 93 m², prior to installation. Moisture condition shall not exceed 1.6 kg per 93 m² per 24 hour day in accordance with manufacturer's recommendations.
- .3 Do not proceed with work until results of moisture condition tests are acceptable.

3.3 PREPARATION

- .1 Remove existing carpet and resilient flooring.
- .2 Remove or treat old adhesives to prevent residual, old flooring adhesives from bleeding through to new flooring and/or interfering with the bonding of new adhesives.
- .3 Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes and other defects with sub-floor filler.
- .4 Clean floor and apply filler to entire area to receive new flooring. Fill low spots, cracks, joints, holes and other defects with sub-floor filler to achieve floor level to a tolerance of 1:500. Trowel and float to leave smooth, flat hard surface. Prohibit traffic until filler cured and dry.
- .5 Prime or seal concrete slab to flooring manufacturer's printed instructions.
- .6 Clean and prepare all joints in floors to receive new joint sealants. Prepare joints in accordance with manufacturers written instructions. Apply coating of primer to all joints. Mix and apply sealants in accordance with manufacturers written instructions.

3.4 TILE APPLICATION

- .1 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.
- .2 Lay flooring with joints parallel to building lines to produce symmetrical tile pattern. Border tiles minimum half tile width.
- .3 Install flooring to square grid pattern with all joints aligned. Maintain parallel for all units and parallel to length of room.

RESILIENT TILE FLOORING

- .4 As installation progresses, and after installation roll flooring in 2 directions with 45 kg minimum roller to ensure full adhesion.
- .5 Cut tile neatly around fixed objects.
- .6 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar.
- .7 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. Use longest available sections. Clean substrate and prime with one coat of adhesive. Apply adhesive to back of base. Set base against wall and floor surfaces tightly by using 3 kg hand roller. Install straight and level to variation of 1:1000.
- .2 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
- .3 Cope internal corners. Use premoulded corner units for right angle external corners.

3.6 CLEANING

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
- .2 Remove excess adhesive from floor, base and wall surfaces without damage.
- .3 Do not wax floor tiles. Clean, 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 inspection.
- .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 118-2012. Oil Repellency: Hydrocarbon Resistance Test.
 - .2 AATCC 134-2011. Electrostatic Propensity of Carpet.
 - .3 AATCC 138-2010. Cleaning: Washing of Textile Floor Coverings.
 - .4 AATCC 171-2010. Carpets: Cleaning of; Hot Water Extraction Method.
 - .5 AATCC 174-2008. Antimicrobial Activity Assessment of Carpets.
 - .6 AATCC 175-2008. Stain Resistance: Pile Floor Coverings.
 - .7 AATCC 189-2012. Fluorine Content of Carpet Fibers.
- .2 American Society for Testing and Materials International (ASTM).
 - .1 ASTM E662-06e1. Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
- .3 Carpet and Rug Institute (CRI).
 - .1 CRI-104-2011. Standard for Installation Specification of Commercial Carpet.
 - .2 CRI Indoor Air Quality "Green Label + Plus" Testing Program - Carpet Criteria - 2009.
- .4 Health Canada / Workplace Hazardous Materials Information System (WHMIS).
 - .1 Material Safety Data Sheets (MSDS).
- .5 Underwriters' Laboratories of Canada (ULC).
 - .1 CAN/ULC-S102.2-10. Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings and Miscellaneous Materials and Assemblies.

1.2 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit certificates to demonstrate compliance with CAN/ULC-S102 and CAN/ULC-S102.2.
- .3 Submit proof that carpet has been tested and passed the CRI Indoor Air Quality Green Label Testing Program.
- .4 Submit carpet manufacturer's installation instructions. Indicate special procedures and perimeter conditions requiring special attention.
- .5 Submit product data sheet for each carpet and adhesive. Submit data on specified products, describing physical and performance characteristics, sizes, patterns, colours, and methods of installation.

TILE CARPETING

- .6 Submit WHMIS MSDS - Material Safety Data Sheets acceptable to Labour Canada and Health Canada for carpet adhesive. Indicate VOC content.
- .7 Submit duplicate 600 x 600 mm samples of each type and colour of carpet specified.
- .8 Shop Drawings:
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate locations and lengths of seams for carpeted areas.
 - .3 Indicate nap direction, open edges, special patterns, and other details required by the Departmental Representative to clarify work.
 - .4 Submit drawings showing columns, doorways, enclosing walls or partitions, built-in cabinets, and locations where cutouts are required as well as direction of carpet pile and pattern, location of edge moldings and edge bindings to Departmental Representative for review prior to installation of carpet.

1.3 CLOSEOUT SUBMITTALS

- .1 Submit operation and maintenance data for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.
- .2 Submit maintenance data. Include maintenance procedures, recommendations for maintenance materials and equipment, and suggested schedule for cleaning.

1.4 DELIVERY, STORAGE AND HANDLING

- .1 Label packaged materials. For carpet tile 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 carpet tile and accessories in location approved by Departmental Representative. Store carpet tile 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.
- .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.

1.5 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction / Demolition Waste Management and with Waste Reduction Workplan.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.

TILE CARPETING

- .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 Hazardous Materials:
 - .1 All hazardous materials which cannot be reused, 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.
 - .2 Safely store materials defined as hazardous or toxic waste, including emptied containers and application apparatus, in containers or areas designated for hazardous waste and dispose of contaminants in an approved legal manner.

1.6 ENVIRONMENTAL REQUIREMENTS

- .1 Ensure substrate is within moisture limits and alkalinity limits prescribed by manufacturer. Prepare moisture testing and provide report to Departmental Representative.
- .2 Maintain ambient temperature of not less than 18 °C from 48 hours before installation to at least 48 hours after completion of work.
- .3 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials.
- .4 Ensure that the building ventilation system is operated during installation of carpet. Provide additional ventilation to areas of work as approved by Departmental Representative by use of approved portable supply and exhaust fans. Provide continuous ventilation during and after carpet application. Run ventilation system 24 hours per day during installation.
- .5 Do not install carpet until wet-work in space is completed and nominally dry, work above ceilings is complete.

1.7 EXTRA MATERIALS

- .1 Provide extra materials of carpet, and adhesives in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Provide 25 m² of each colour, pattern and type of carpeting.
- .3 Extra materials to be from same production run as installed materials. Identify each package of carpet and each container of adhesive. Deliver to Departmental Representative and store where directed.

Part 2 Products**2.1 MANUFACTURERS**

- .1 Certified to Carpet and Rug Institute's IAQ requirements.

TILE CARPETING**2.2 MODULAR CARPET TILE**

- .1 Carpet tile for direct glue down application. Multiple colours, patterns textures and styles will be selected by Departmental Representative from Manufacturer's full and extended range of standard, extended, and premium products meeting the following criteria.
- .2 Modular Carpet Tile:
 - .1 Product Size: 610 mm x 610 mm
 - .2 Pattern Scale: Medium
 - .3 Pattern Type: Linear
 - .4 Primary Backing: Non-woven synthetic fiber
 - .5 Recycled Content: Yes
 - .6 Face Weight: 610.2 g/sq m
 - .7 Gauge: 50.4 rows/ 10 cm
 - .8 Stitches: 35.0 stitches/10 cm
 - .9 Pile Height Average: 4.8 mm
 - .10 Dye Method: Solution Dyed
 - .11 ER3 Note: Recycled content percentages are third-party certified annually based on the prior year's formulations and use.
 - .12 Pattern Match: required
 - .13 Colorfastness to Light: > 4 after 100 hours (AATCC 16E)
 - .14 Fluorine: Minimum 500 ppm (CRI TM-102).
 - .15 Antimicrobial Chemicals: No antimicrobials (EPA Registered pesticides) added to product (ASTM E2471-05)
 - .16 Electrostatic Propensity: 1.9 kV (AATCC 134); Permanent Conductive Fiber
 - .17 Surface Flammability: Passes CPSC FF 1-70 (ASTM D-2859)
 - .18 Flooring Radiant Panel: Class 1 (mean average CRF: 0.45 w/sq cm or higher) (ASTM E-648)
 - .19 Smoke Generation: Less than 450 (ASTM E-662)
 - .20 Installation Method: Monolithic – or – Quarter Turn

2.3 SPECIAL REQUIREMENTS

- .1 Provide permanent soil resistant treatment. Minimum 500 ppm fluorine. Fluorine Durability Level to AATCC 189. Drop oil and soil resistance to AATCC 118.
- .2 Provide permanent stain resistance. Topical treatments are not acceptable. Provide stain resistance for the life of the carpet, prewash test AATCC 138 for 5 washings, stain resistance to AATCC 175, level 8.
- .3 Dye Lot: minimum 1000 m² with no visual difference in side and end uniformity.

2.4 ACCESSORIES

- .1 Adhesive: Low VOC content in accordance with CRI requirements. Pressure sensitive type: recommended by carpet manufacturer for direct glue down installation of modular carpet.

- .2 Carpet protection: non-staining heavy duty kraft paper or 0.152 mm thick polyethylene.

Part 3 Execution

3.1 MANUFACTURER'S INSTRUCTIONS

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

3.2 FLOOR TREATMENT

- .1 Remove ridges and bumps. Remove dust, and dirt. Substrates shall be free of paint, dirt, grease, oil, curing or parting agents, and other contaminants, including sealers, that may interfere with the bonding of the adhesive.

3.3 PREPARATION

- .1 Prepare floor surfaces in accordance with CRI 104 - Standard for Installation of Commercial Carpet.

3.4 INSTALLATION

- .1 Install in accordance with manufacturer's printed instructions and in accordance with CRI 104 - Standard for Installation of Commercial Carpet.
- .2 Install carpet after finishing work is completed.
- .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.

3.5 MODULAR CARPET

- .1 Apply acrylic release type adhesive and install modular carpet in accordance with manufacturer's written instructions.
- .2 Lay modular carpet with butt seams. Roll modular carpet with appropriate roller for complete contact of carpet with mill-applied adhesive to sub-floor.

TILE CARPETING

3.6 BASE INSTALLATION

- .1 Install resilient base to locations as indicated in accordance with manufacturers written instructions. Use full length pieces.

3.7 PROTECTION OF FINISHED WORK

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

END OF SECTION

PAINTING**Part 1 General****1.1 RELATED REQUIREMENTS**

- .1 Section 08 11 00 - Metal Doors and Frames.
- .2 Section 09 21 16 - Gypsum Board Assemblies.

1.2 REFERENCES

- .1 Architectural Painting Specifications Manual, Master Painters Institute (MPI) 2011.
- .2 National Fire Code of Canada 2010.

1.3 QUALITY ASSURANCE

- .1 Conform to latest MPI requirements for interior painting work including preparation and priming.
- .2 Materials such as primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents shall be in accordance with MPI Painting Specification Manual "Approved Product" listing and shall be from a single manufacturer for each system used.
- .3 Other paint materials such as linseed oil, shellac, and turpentine shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.
- .4 Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Departmental Representative.
- .5 Standard of Acceptance:
 - .1 Walls: no defects visible from a distance of 1000 mm at 90° to surface.
 - .2 Ceilings: no defects visible from floor at 45° to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.4 SCHEDULING OF WORK

- .1 Submit work schedule for various stages of painting to Departmental Representative for approval. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from Departmental Representative for any changes in work schedule.

PAINTING**1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit WHMIS - Material Safety Data Sheets.
- .3 Samples:
 - .1 Submit full range colour sample chips in accordance with Section 01 33 00 - Submittal Procedures. Indicate where colour availability is restricted.
 - .2 Submit duplicate 200 x 300 mm sample panels of each paint, clear coating and special finish with specified paint or coating in colours, gloss / sheen and textures required to MPI Painting Specification Manual standards. Submit samples on stiff card stock to approval of Departmental Representative.
- .4 Upon completion, submit records of products used. List products in relation to finish system and include the following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour number.
 - .4 MPI Environmentally Friendly classification system rating.

1.6 EXTRA MATERIALS

- .1 Submit maintenance materials in accordance with Section 01 78 00 - Closeout Submittals.
- .2 Submit one – one x four litre can of each type and colour of primer and finish coating. Identify colour and paint type in relation to established colour schedule and finish system.
- .3 Deliver to Departmental Representative and store where directed.

1.7 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction / Demolition Waste Management and Disposal.
- .2 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Obtain information on these controls from Provincial Ministries of Environment.
- .3 Treat material which cannot be reused as hazardous waste and dispose of in an appropriate manner.
- .4 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .5 Reduce the volume of contaminants as follows:

PAINTING

- .1 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
- .2 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
- .3 Empty paint cans are to be dry prior to disposal or recycling.
- .6 Collect waste paint by type and provide for delivery to recycling or collection facility.

1.8 DELIVERY, HANDLING AND STORAGE

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Labels shall clearly indicate:
 - .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 Observe manufacturer's recommendations for storage and handling.
- .5 Store materials and supplies away from heat generating devices.
- .6 Store materials and equipment in a well ventilated area with temperature range 7 °C to 30 °C. Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .7 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. After completion of operations, return areas to clean condition to approval of Departmental Representative.
- .8 Remove paint materials from storage only in quantities required for same day use.
- .9 Comply with requirements of Workplace Hazardous Materials Information System regarding use, handling storage, and disposal of hazardous materials.
- .10 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to paint 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 the National Fire Code of Canada.

1.9 SITE REQUIREMENTS

- .1 Heating, Ventilation and Lighting:

PAINTING

- .1 Ventilate small or enclosed spaces that are to be painted to approval of Departmental Representative.
 - .2 Perform no painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10 °C for 24 hours before, during and after paint application until paint has cured sufficiently.
 - .3 Provide continuous ventilation with maximum exhaust for seven days after completion of application of paint to flush out odours and contaminants.
 - .4 Coordinate use of existing ventilation system with Departmental Representative and ensure its operation during and after application of paint as required.
 - .5 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.
 - .6 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
- .1 Unless specifically pre-approved by the Departmental Representative and the applied product manufacturer, perform no painting work when:
 - .1 Ambient air and substrate temperatures are below 10 °C.
 - .2 Substrate temperature is over 32 °C unless paint is specifically formulated for application at high temperatures.
 - .3 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.
 - .4 The relative humidity is above 85 % or when the dew point is less than 3 °C variance between the air / surface temperature.
 - .5 Rain or snow are forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
 - .2 Perform no painting work when the maximum moisture content of the substrate exceeds:
 - .1 12 % for concrete and brick masonry.
 - .2 15 % for wood.
 - .3 12 % for plaster and gypsum board.
 - .3 Conduct moisture tests using a properly calibrated electronic Moisture Meter.
 - .4 Test concrete, masonry and plaster surfaces for alkalinity as required.
- .3 Surface and Environmental Conditions:
- .1 Apply paint finish only in areas where dust is no longer being generated by related construction operations or when wind conditions are such that airborne particles will not affect quality of finished surface.
 - .2 Apply paint only to adequately prepared surfaces and to surfaces within moisture limits noted herein.
 - .3 Apply paint only when previous coat of paint is dry or adequately cured.

PAINTING**Part 2 Products****2.1 MATERIALS**

- .1 Only paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
- .2 Paint materials for paint systems shall be products of a single manufacturer.
- .3 Only qualified products with MPI "Environmentally Friendly" E2 or E3 rating are acceptable for use on this project.
- .4 Water-borne paints and stains, water-borne surface coatings and water borne varnishes must meet a minimum E2 rating.

2.2 COLOURS

- .1 Departmental Representative will provide Colour Schedule after award.
- .2 Colour schedule will be based upon the selection of one (1) base colour and seven (7) dark accent colours. No more than eight (8) colours will be selected for the entire project and no more than four (4) colours will be selected in each area.
- .3 Selection of colours will be from manufacturer's full range of colours.
- .4 Where specific products are available in a restricted range of colours, selection will be based on the limited range.
- .5 Second coat in a 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. On-site tinting of painting materials is not allowed.
- .2 Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.
- .3 Where thinner is used, addition shall not exceed paint manufacturer's recommendations. Do not use kerosene or any such organic solvents to thin water-based paints.
- .4 Thin paint for spraying according in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide copy of instructions to Departmental Representative.
- .5 Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

PAINTING**2.4 GLOSS / SHEEN RATINGS**

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

Gloss Level Category	Units @ 60E	Units @ 85E
G1 - matte finish	0 to 5	max. 10
G2 - velvet finish	0 to 10	10 to 35
G3 - eggshell finish	10 to 25	10 to 35
G4 - satin finish	20 to 35	min. 35
G5 - semi-gloss finish	35 to 70	
G6 - gloss finish	70 to 85	

- .2 Gloss level ratings of painted surfaces shall be as specified herein and as noted on Finish Schedule.

2.5 INTERIOR PAINTING SYSTEMS

- .1 Apply all paint systems in accordance with MPI Premium grade. Apply one primer coat and two finish coats.
- .2 Metal Fabrications: columns, etc. that are subject to incidental contact.
- .1 INT 5.1R High performance architectural latex, eggshell finish.
- .3 Galvanized metal: doors, frames, railings, misc. steel, pipes, overhead decking, and ducts.
- .1 INT 5.3M - High performance architectural latex, Satin finish.
- .4 Plaster and Gypsum Board: gypsum wallboard, drywall type material and GWB Ceilings.
- .1 INT 9.2B High performance architectural latex, satin finish for walls and flat finish for ceilings, matt finish.
- .5 Gypsum Board: Gypsum wallboard on interior surface of exterior walls:
- .1 INT 9.2C. Alkyd G5 satin finish over latex sealer.
- .6 Interior plywood back boards for electrical and telecommunications equipment:
- .1 INT 6.4P - Pigmented fire retardant G4 satin finish coating. ULC rated.

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 Painting Specifications Manual except where specified otherwise.

PAINTING

- .2 Apply paint materials in accordance with paint manufacturer's written application instructions.

3.3 EXAMINATION

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

3.4 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 such surfaces as approved by Departmental Representative.
 - .2 Protect items that are permanently attached such as Fire Labels on doors and frames.
 - .3 Protect factory finished products and equipment.
 - .4 Protect passing pedestrians and the public in and about the building.
 - .5 Remove electrical cover plates, light fixtures, surface hardware on doors, bath accessories and other surface mounted equipment, fittings and fastenings prior to undertaking any painting operations. Store items securely and re-install after painting is completed.
 - .6 As painting operations progress, place "WET PAINT" signs to approval of Departmental Representative.
- .2 Cleaning and Preparation:
 - .1 Clean and prepare surfaces in accordance with MPI Painting Specification Manual requirements. Refer to MPI Manual in regard to specific requirements and as follows:
 - .2 Remove dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 - .3 Wash surfaces with a biodegradable detergent and bleach where applicable and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 - .4 Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 - .5 Allow surfaces to drain completely and allow to dry thoroughly.
 - .6 Prepare surfaces for water-based painting, water-based cleaners must be used in place of organic solvents.
 - .7 Use trigger operated spray nozzles for water hoses.

PAINTING

- .8 Many water-based paints cannot be removed with water once dried. However, minimize the use of kerosene or any such organic solvents to clean up water-based paints.
- .3 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.
- .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.
- .5 Clean metal surfaces to be painted by removing rust, loose mill scale, welding slag, dirt, oil, grease and other foreign substances in accordance with MPI requirements. Remove traces of blast products from surfaces, pockets and corners to be painted by brushing with clean brushes, blowing with clean dry compressed air or vacuum cleaning.
- .6 Touch up of shop primers with primer as specified in applicable section. Major touch-up including cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas, shall be by supplier of fabricated material.
- .7 Do not apply paint until prepared surfaces have been accepted by Departmental Representative.

3.5 APPLICATION

- .1 Method of application to be as approved by Departmental Representative. Apply paint by brush, roller, air sprayer or airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.
 - .1 Spray Application:
 - .1 Completely mask all adjacent areas and materials.
 - .2 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
 - .3 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
 - .4 Apply paint in a uniform layer, with overlapping at edges of spray pattern.
 - .5 Brush out immediately all runs and sags.
 - .6 Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray.
 - .7 Ensure that touch-up brush strokes are not apparent.
 - .2 Brush and Roller Application:
 - .1 Apply paint in a uniform layer using brush and/or roller of types suitable for application.
 - .2 Work paint into cracks, crevices and corners.

PAINTING

- .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 shall be free of roller tracking and heavy stipple unless approved by Departmental Representative.
- .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 and only when specifically authorized by Departmental Representative.
- .4 Apply coats of paint as a 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.
- .7 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.
- .8 Finish closets and alcoves as specified for adjoining rooms.
- .9 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

3.6 MECHANICAL/ELECTRICAL EQUIPMENT

- .1 Mechanical and electrical installations: leave exposed ductwork and hangers unpainted.
- .2 Do not paint conduits, piping, hangers.
- .3 Keep sprinkler heads free of paint.
- .4 Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
- .5 Do not paint over nameplates.
- .6 Paint indoor and outdoor natural gas piping yellow.
- .7 Paint disconnect switches and conduit for fire alarm system and exit light systems in red enamel.
- .8 Apply minimum 2 coats of fire retardant paint to front and back plus all 4 edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

PAINTING

- .9 Do not paint interior transformers and substation equipment.

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.
- .2 Co-operate with inspection firm and provide access to areas of work.

3.8 CLEANING AND RESTORATION

- .1 Proceed in accordance with Section 01 74 11 - Cleaning, supplemented as follows:
- .1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.
 - .2 Keep work area free from unnecessary accumulation of tools, equipment, surplus materials and debris.
 - .3 Remove combustible rubbish materials and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.
 - .4 Clean equipment and dispose of wash water used for water borne materials, solvents used for oil based materials as well as other cleaning and protective materials (e.g. rags, drop cloths, and masking papers), paints, thinners, paint removers/strippers in accordance with safety requirements of authorities having jurisdiction and as noted herein.
 - .5 Clean painting equipment in leak-proof containers that will permit particulate matter to settle out and be collected. Sediment remaining from cleaning operations to be recycled or disposed of in manner acceptable to authorities having jurisdiction.
 - .6 Recycle paint and coatings in excess of repainting requirements as specified.
- .2 Clean and re-install all hardware items removed before undertaken painting operations.
- .3 Remove protective coverings and warning signs as soon as practical after operations cease.
- .4 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .5 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .6 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

END OF SECTION