

1.0 GENERAL

1.1 RELATED SECTIONS

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|----|-----------------------|---------------|
| .1 | Submittal | Section 01330 |
| .2 | Framing and Sheathing | Section 06112 |
| .3 | Building Insulation | Section 07210 |

1.2 REFERENCES

- .1 Codes and standards referenced in this section refer to the latest edition thereof.
- .2 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM C36/C36M, Specification for Gypsum Wallboard.
 - .2 ASTM C475, Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - .3 ASTM C514, Specification for Nails for the Application of Gypsum Board.
 - .4 ASTM C630/C630M, Specification for Water-Resistant Gypsum Backing Board.
 - .5 ASTM C840, Specification for Application and Finishing of Gypsum Board.
 - .6 ASTM C931/C931M, Specification for Exterior Gypsum Soffit Board.
 - .7 ASTM C954, 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.
 - .8 ASTM C1002, Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
 - .9 ASTM C1047, Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
- .3 Association of the Wall and Ceilings Industries International (AWEI)
- .4 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-51.34, Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
- .5 Underwriters' Laboratories of Canada (ULC)
 - .1 CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.

1.3 SAMPLES

- .1 Submit samples in accordance with Section 01330 - Submittal Procedures.
- .2 Submit 300 mm size samples of corner and casing beads insulating strip.

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 weather, other elements and damage from construction operations and other causes.
- .3 Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal accessories and trim from being bent or damaged.

1.5 SITE ENVIRONMENTAL REQUIREMENTS

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

1.6 QUALIFICATIONS

- .1 Dry wall installers: minimum 5 years proven experience.

1.7 MOCKUPS

- .1 Submit Mock-Ups in accordance with Section 01400 – Quality Control.
- .2 Construct mock up gypsum board wall installation including one inside corner and one outside corner. Mock-up may be part of finished work.
- .3 Allow 24 hours for inspection of mock-up by Contract Administrator before proceeding with rest of the work.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Standard board: to ASTM C36/C36M regular, 12.7 mm thick and Type X, 15.9 mm thick, 1200 mm wide x maximum practical length, ends square cut, edges bevelled.
- .2 Water-resistant board: to ASTM C630/C630M regular, 12.7 mm thick and Type X, 15.9 mm thick, 1200 mm wide x maximum practical length.
- .3 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30 galvanized.
- .4 Drywall furring channels: 0.5 mm core thickness galvanized steel channels for screw attachment of gypsum board.
- .5 Resilient drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .6 Nails: to ASTM C514.
- .7 Steel drill screws: to ASTM C1002.
- .8 Stud adhesive: to CAN/CGSB-71.25.

- .9 Laminating compound: as recommended by manufacturer, asbestos-free.
- .10 Casing beads, corner beads, control joints and edge trim: to ASTM C1047, metal, zinc coated by hot-dip process 0.5 mm base thickness, perforated flanges, one piece length per location.
- .11 Sealants: in accordance with Section 07900 - Joint Sealers.
- .12 Acoustic sealant: CGSB 19-GP-21M.
- .13 Polyethylene: to CAN/CGSB-51.34, Type 2.
- .14 Insulating strip: rubberized, moisture resistant, 3 mm thick cork strip, 12 mm wide, with self-sticking permanent adhesive on one face, lengths as required.
- .15 Joint compound: to ASTM C475, asbestos-free.

2.2 FINISHES

- .1 Texture finish: asbestos-free standard white texture coating and primer-sealer, recommended by gypsum board manufacturer.

3.0 EXECUTION

3.1 ERECTION

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

3.2 APPLICATION

- .1 Do not apply gypsum board until bucks, anchors, blocking, sound attenuation, electrical and mechanical works are approved.

- .2 Apply double layer gypsum board to wood or metal furring or framing using screw fasteners. Maximum spacing of screws 300 mm oc.
- .3 Apply single layer gypsum board to concrete or concrete block surfaces, where indicated, using laminating adhesive.
- .4 Apply water-resistant gypsum board where wall tiles are to be applied and adjacent to slop sinks janitors closets. Apply water-resistant sealant to edges, ends, cut-outs which expose gypsum core and to fastener heads. Do not apply joint treatment on areas to receive tile finish.
- .5 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. Seal full perimeter of cut-outs around electrical boxes, ducts, in partitions where perimeter sealed with acoustic sealant.
- .6 Install ceiling boards in direction that will minimize number of end-butt joints. Stagger end joints at least 250 mm.
- .7 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.
- .8 Install gypsum board with face side out.
- .9 Do not install damaged or damp boards.
- .10 Locate edge or end joints over supports. Stagger vertical joints over different studs on opposite sides of wall.

3.3 INSTALLATION

- .1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure at 150 mm oc using contact adhesive for full length.
- .2 Install casing beads around perimeter of suspended ceilings.
- .3 Install casing beads where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.
- .4 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 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 at changes in substrate construction.
- .8 Install control joints straight and true.
- .9 Construct expansion joints as detailed, 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 following levels in accordance with Association of the Wall and Ceiling Industries (AWCI) International Recommended Specification on Levels of Gypsum Board Finish:
 - .1 Levels of finish:
 - a) 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 where water resistant gypsum backing board is used as a substrate for tile.)
 - b) Level 4: 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; 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 Apply one coat of white primer sealer over surface to be textured. When dry apply textured finish in accordance with manufacturer's instructions.
- .19 Mix joint compound slightly thinner than for joint taping.
- .20 Apply thin coat to entire surface using trowel or drywall broadknife to fill surface texture differences, variations or tool marks.
- .21 Allow skim coat to dry completely.
- .22 Remove ridges by light sanding or wiping with damp cloth.
- .23 Provide protection that ensures gypsum drywall work will remain without damage or deterioration at time of substantial completion.

- END OF SECTION -

1.0 GENERAL

1.1 SUMMARY

.1 Section Includes: This section includes labor, materials and other services necessary to complete resilient sheet flooring, slip resistant sheet vinyl safety flooring systems and accessories work. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

.2 Related Sections:

.1	Cast-in-Place Concrete: Concrete finishing	Section 03300
.2	Framing and Sheathing.	Section 06112
.3	Hygienic Rigid Sheet Vinyl Wall Covering	Section 09720
.4	Thermal and Moisture Protection	Division 07
.5	Mechanical.	Division 15

1.2 REFERENCES

.1 **ASTM D 2047**, Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine.

.2 **ASTM E 648/NFPA 253**, Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

.3 **ASTM E662**, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.

.4 **ASTM F710**, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

.5 **ASTM F 970**, Standard Test Method for Static Load Limit.

.6 **ASTM F1482**, Standard Guide to Wood Underlayment Products Available for Use under Resilient Flooring.

.7 **ASTM F1303**, Standard Specification for Sheet Vinyl Floor Covering with Backing.

.8 **ASTM F2170**, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

.9 **Underwriters Laboratories of Canada (ULC)**

.1 CAN/ULCS – 102.2 Fire Tunnel Test – Surface Burning Characteristics of Flooring, Floor covering and Miscellaneous Materials and Assemblies

.10 **(RFCI) Resilient Floor Covering Institute**

.1 RFCI Standard Slab Moisture Test Method (Calcium Chloride Method)

1.3 SUBMITTALS

.1 Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01330 - Submittal Procedures

- .2 Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Section 01330 - Submittal Procedures including but limited to the following:
 - .1 Submit a cut diagram indicating seam locations and roll direction. Use mitered seam layouts for corners when changing directions 180 degrees (e.g. when running material down corridors which bisect at a right angle), unless approved otherwise.
- .3 Samples: Submit duplicate 6" x 9" (152 mm x 228 mm) sample pieces of sheet material, 12" (300 mm) long [gully edge] [cap strip] [joint cover strip] [cove former] in accordance with Section 01330 - Submittal Procedures.
- .4 Closeout Submittals: Submit the following:
 - .1 Operation and Maintenance Data: Submit manufacturer's operation and maintenance data for incorporation into manual specified in accordance with Section 01700 – Contract Closeout. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.4 QUALITY ASSURANCE

- .1 Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
 - .1 Training: Installer who has attended an Altro flooring installation training clinic.
- .2 Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing.
 - .1 Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 - .2 Incorporation: Mock-up may be incorporated into final construction upon Contract Administrator's approval.
- .3 Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, manufacturer's warranty requirements, and installer qualifications.

1.5 SITE CONDITIONS

- .1 Temperature Requirements: If storage temperature is below 65F (18C) or the floor temperature is below 50F (18C), the Altro safety flooring product must be moved to a warmer place and allowed to reach this temperature before unrolling or installation. For further information, refer to current Altro Installation Practices and Quick Facts.
- .2 Maintain air temperature and structural base temperature at flooring installation area between 68F (20C) and 80F (26C) for 48 hours before, during and 24 hours after installation.

1.6 WARRANTY

- .1 Warranty period for Altro Maxis Unity shall be 15 years commencing on date of substantial completion. Refer to conditions of the contract for project warranty provisions.

2.0 **PRODUCTS**

2.1 **SAFETY FLOORING**

- .1 Slip Resistant Sheet Vinyl Manufacturer: Maxis Unity by Altro, Telephone 800.377.5597, Fax 610.746.4325; E-Mail Assistance: info@altrofloors.com
- .2 Acceptable material: Altro Maxis Unity (measurements and product weights given below are approximate): Slip Resistance D .81 / W .89; Thickness 0.10" (2.5 mm); Roll Width 6' - 7" (2 M); Roll Length 66' (20 M); Roll Weight: 275 lb. (125 kg)
Colour to be selected from manufacturer's Chipped Colour range.

2.2 **ACCESSORIES**

- .1 **Vinyl welding rod:** Acceptable material:
 - .1 Altro weld rod
- .2 **Cove Former:** Acceptable material, sized to suit application:
 - .1 Altro Cove former: 20R - 24 mm (1") radius.
- .3 **Gulley edge:** Acceptable material, vinyl, sized to suit application if required:
 - .1 Altro Gulley Edge [GA 35/25] [GE 35RE] [GE 25RE] where applicable.
- .4 **Cap strip:** Acceptable material, sized to suit application,
 - .1 Altro Cap Strip: C7.
- .5 **Subfloor Filler and Leveler:** Use only gray Portland cement-based "moisture tolerant" underlayment, and patching compounds. Use for filling cracks, holes or leveling. White gypsum materials are not acceptable.
- .6 **Metal edge strips:**
 - .1 Aluminum extruded, smooth, mill finish with lip to extend over flooring if required.

3.0 **EXECUTION**

3.1 **EXAMINATION**

- .1 Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions.
- .2 Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.2 **PREPARATION**

- .1 Safety flooring shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors.
- .2 Always conduct moisture tests per ASTM F-2170 on all concrete slabs regardless of age or grade level. ASTM F-2170 Internal Relative Humidity (IRH) test results must not exceed 85%.
- .3 Do not proceed with work until results of moisture condition tests are acceptable.
- .4 When patching, a moisture tolerant patching compound must always be used.

3.3 INSTALLATION

- .1 Maxis Unity Installation: Install Altro safety flooring in accordance with the current posted Altro Installation Practices and Quick Facts Guide. All Seams shall be heat welded with Altro Weldrod™ only. Failure to install Altro safety flooring in accordance with recommended procedures will void the Altro Limited Product Warranty.
- .2 Coved Installation: Where Altro safety flooring is coved up wall surfaces and other abutments, installation shall be in accordance with Altro safety flooring Installation Practices using the following accessories:
 - .1 At standard wall finishes: Use Altro C7 vinyl cap strip to accommodate sheet vinyl to a height as indicated.
 - .2 At Altro Whiterock semi-rigid wall cladding or FRP paneling: Wall Panel to overlap cove a minimum 2" (50 mm). Overall exposed cove to view shall be 4" height.
 - .3 At 0.75" (19.1 mm) radius coving at juncture of vertical and horizontal surfaces: Use Altro Vinyl Cove Former 20R.
 - .4 Top set cove base: Install in accordance with manufacturer's instructions.

3.4 CLEANING

- .1 Cleaning: Remove temporary coverings and protection of adjacent work areas.
 - .1 Repair or replace damaged installed products.
 - .2 Clean installed products in accordance with manufacturer's instructions prior to Contract Administrator's acceptance.

3.5 PROTECTION

- .1 Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as reusable textured plastic sheeting.
- .2 Maxis Unity should be covered and protected from all other trades during construction with a suitable non-staining protective covering without taping to the surface of the flooring.

- END OF SECTION -

1.0 GENERAL

1.1 SUMMARY

.1 Section Includes: This section includes labor, materials and other services necessary to complete the Hygienic Rigid Sheet Vinyl Wall Covering and accessories work. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

.2 Related Sections:

.1	Cast-in-Place Concrete: Concrete finishing	Section 03300
.2	Framing and Sheathing.	Section 06112
.3	Resilient Sheet Vinyl Safety Flooring	Section 09657
.4	Gypsum Board	Section 09250
.5	Mechanical	Division 15
.6	Electrical	Division 16

1.2 REFERENCES

.1 General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

.2 **American Society for Testing and Materials (ASTM)**

- .1 ASTM D2583-07, Standard Test Method for Indentation Hardness of Rigid Plastics by Means of Barcol Impressor.
- .2 ASTM E 84-05 Standard Test Method for Surface Burning Characteristics of Building Materials

.3 **Underwriters Laboratories of Canada (ULC)**

- .1 CAN/ULC-S I 01-07, Standard Methods of Fire Endurance Tests of Building Construction and Materials.
- .2 CAN/ULCS – 102.2 Fire Tunnel Test – Surface Burning Characteristics of Flooring, Floor covering and Miscellaneous Materials and Assemblies

1.3 SUBMITTALS

.1 Shop Drawings:

- .1 Submit shop drawings in accordance with Section 01330
- .2 Indicate by large scale details, thermoformed edges, moldings, dimensions, joints, anchorage and assembly.

.2 Samples:

- .1 Submit 300 x 300 mm sample of wall covering and trim in accordance with Section 01330.

- .3 Closeout Submittals:
 - .1 Provide manufacturer's product specifications and maintenance data including maintenance procedures and materials, procedures for stain removal and surface repair, and recommended schedule for cleaning, for incorporation into Operation and Maintenance Manual in accordance with Section 01700 – Contract Closeout Submittals.

1.4 QUALITY ASSURANCE

- .1 Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.
 - .1 Training: Installer who has attended an Altro Whiterock installation training clinic; has installed Altro Whiterock successfully.
- .2 Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain the City's and Contract Administrator's acceptance of finish color, texture and pattern, and workmanship standards.
 - .1 Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
 - .2 Incorporation: Mock-up may be incorporated into final construction upon Contract Administrator's approval.
- .3 Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, manufacturer's warranty requirements, and installer qualifications.

1.5 DELIVERY, STORAGE, AND HANDLING

- .1 Deliver all material to site in manufacturer's original unopened packaging with labels clearly identifying product name and manufacturer.
- .2 Store materials in a dry, enclosed area protected from exposure to moisture, construction activity, and direct sunlight in strict accordance with manufacturer's recommendations.
- .3 Handle all products with appropriate precautions and care as stated manufacturer's instructions.
- .4 Cleaning and Waste Management in accordance with Section 01700.

1.6 SITE CONDITIONS

- .1 Maintain constant 21° C air temperature at installation area for 72 hours before, during and 48 hours after installation.
- .2 Unwrap wall covering to allow acclimatizing in installation area for 72 hours before application.
- .3 Provide continuous ventilation during and after wall covering installation. Do not let contaminated air recirculate through existing building air distribution system.

1.7 SEQUENCING

- .1 Install vinyl wall panels after application of vinyl sheet flooring with self-cove base specified in Section 09657.

1.8 WARRANTY

- .1 Manufacturer's Product Warranty: provide an extended warranty for Work of this Section for a period of 10 years from date of Substantial Performance of the Work. Manufacturer hereby warrants rigid-sheet vinyl wall covering against defects in materials and workmanship subject to proper care and maintenance, and these or other observed defects and deficiencies will be repaired or replaced to the satisfaction of the Contract Administrator and the City, and at no expense to the City.

1.9 MAINTENANCE

- .1 Comply with requirements of Section 01700.
- .2 Provide maintenance materials as follows:
 - .1 Rigid-Sheet Vinyl Wall Covering: full width equal to 5% of wall area for each type, colour and pattern of wall covering installed. Sheet material to be supplied in one piece.
 - .2 Adhesives: Sufficient volume to install maintenance materials but not less than unopened 1 litre can of each type of adhesive.
- .3 Maintenance materials to be from same dye lot or production run as installed materials.

2.0 PRODUCTS

2.1 MANUFACTURERS

- .1 Acceptable Manufacturer: Altro Canada
6221 Kennedy Road, Unit 1, Mississauga ON, L5T 2S8
Toll-free: 800.565.4658 Tel: 905.564.1330 Fax: 905.564.0750
E-mail: info@altrofloors.com Web Site: www.altrofloors.com.

2.2 HYGIENIC WALL COVERINGS:

- .1 Acceptable material: Altro Whiterock Satins (measurements and product weights given below are approximate):
 - .1 STANDARD WHITE W103/00: Thickness: 0.10" (2.5 mm) Extruded Semi-rigid PVCu Sheet; Panel Width: 4' (1.22m) Panel Height: 8' (2.5 m); Weight 4'x8' Panel: 24 lbs (10.4 kg)

2.3 ACCESSORIES

- .1 **Joint Strips:** (for vertical joints)
 - .1 2-Part Joint Strip – A831/25 White; Length 98.5”.
- .2 **Start and Edge Trim:**
 - .1 2-Part Start and Edge Trim – A833/25 White; Length 98.5”.

- .3 **Adhesive:**
 - .1 Mapei ECO 575
- .4 **Caulking and Mastic Compounds and Tools:**
 - .1 Altro Mastic Caulking – A802 White/A803 Clear) 10.5 oz
- 2.4 **SOURCE QUALITY**
 - .1 Source Quality: Obtain wall products from a single manufacturer and from same dye lot or production run.
- 3.0 **EXECUTION**
- 3.1 **MANUFACTURER’S INSTRUCTIONS**
 - .1 Compliance: Comply with manufacturer’s product data, including product technical bulletins, product catalog, installation instructions and product label instructions for installation.
- 3.2 **EXAMINATION**
 - .1 Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer’s instructions.
- 3.3 **PREPARATION**
 - .1 Work penetrating substrata to be completed before installing vinyl wall panels.
 - .2 Seal and prime wall surface to receive vinyl wall panels in accordance with manufacturer's instructions.
 - .3 Ensure sheet vinyl safety flooring and flashcoving installation are completed prior to start of work under this section.
- 3.4 **INSTALLATION**
 - .1 Install vinyl wall panels in accordance with manufacturer's instructions. All joints should be joined by approved methods as detailed in the installation guide.
 - .2 Overlap flashcove base by extending the vinyl wall panel down a minimum of 2” (50 mm) past the top of the flooring flashcove base. Use extra adhesive to fill the gap, and apply a bead of recommended sealant along bottom edge of the vinyl wall panels.
 - .3 Thermoform on site, all inside and outside corners and specific shapes to suit contours of room.
 - .4 All vertical joints shall be joined with Altro A831 two-part joint strips following manufacturer’s instructions.
 - .5 All panel edges abutting fitment, door and window frames and other dissimilar material shall be finished with Altro A833 two part start & edge profile following manufacturer’s instructions.

- .6 Use sheets in consecutive numerical sequence of manufacture including panels above or below windows, doors or similar penetrations. Install full sheets vertically from top of floor cove to height as specified. Do not use filler pieces or spliced partial sheets.
- .7 Apply adhesive according to methods recommended by manufacturer. Remove excess adhesive from seams as work progresses, and wipe clean and dry with cloth towel.
- .8 To ensure maximum adhesion, roll the material with a laminated roller as recommended by the manufacturer. Roll from the centre of the sheet to the outer edges in all directions to eliminate trapped air pockets.
- .9 Install vinyl wall panels before installation of plumbing fixtures, equipment, cabinets etc.
- .10 Seal around all holes, cut-outs, etc. with sealant recommended by manufacturer resulting in water-tight penetrations.

3.5 CLEANING

- .1 Clean installed products in accordance with manufacturer's instructions prior to final acceptance.

3.6 PROTECTION

- .1 Leave protective film on vinyl wall panels to protect surfaces from damage during construction. Remove prior to occupancy.

- END OF SECTION -

1.0 **GENERAL**

1.1 **DESCRIPTION**

1. Comply with the General Conditions, Supplementary Conditions, the requirements of Division 1, and any supplements and/or addenda.

1.2 **RELATED SECTIONS**

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|----|-------------------------------|---------------|
| 1. | Steel Doors, Frames & Screens | Section 08100 |
| 2. | Gypsum Board | Section 09250 |
| 3. | Mechanical | Division 15 |
| 4. | Electrical | Division 16 |

1.3 **REFERENCES**

1. Canadian Painting Contractors' Architectural (CPCA).
 - .1 Painting Specifications Manual 1993.
2. Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-1.38-M91, Interior Enamel Undercoater.
 - .2 CGSB 1-GP-48M-78, Primer, Marine, for Steel.
 - .3 CAN/CGSB-1.57-M90, Alkyd, Interior, Semigloss, Enamel.
 - .4 CAN/CGSB-1.60-M89, Interior Alkyd Gloss Enamel.
 - .5 CAN/CGSB-1.68-M91, Solvent Type Primer-Sealer for Interior Walls.
 - .6 CAN/CGSB-1.73-M91, Exterior and Interior Enamel for Floors.
 - .7 CAN/CGSB-1.100-M89, Interior Latex Type, Flat Paint.
 - .8 CAN/CGSB-1.102-M89, Clear Alkyd Type Sealer.
 - .9 CAN/CGSB-1.118-M89, Interior Alkyd, Flat Finish.
 - .10 CAN/CGSB-1.119-M89, Primer-Sealer, Wall, Interior Latex Type.
 - .11 /CGSB-1.195-M90 Interior Semigloss Latex Paint.
 - .12 CAN/CGSB-1.198-92, Cementitious Primer (for Galvanized Surfaces).
 - .13 CAN/CGSB-1.202-92, Interior Low Gloss Alkyd Enamel.
 - .14 CAN/CGSB-1.209-93, Low Sheen Latex Interior Paint.
 - .15 CGSB 85-GP-1M-78, Painting (New) Exterior Wooden Surfaces.
 - .16 CGSB 85-GP-10M-79, Shop Painting Structural Steel.
 - .17 B 85-GP-16M-79, Painting Galvanized Steel.
 - .18 CGSB 85-GP-20M-79, Painting copper and Copper Alloys.
 - .19 CGSB 85-GP-32M-79, Painting Concrete Floors.
 - .20 CGSB 85-GP-33M-79, Painting Interior Plaster and Wallboard.
 - .21 CAN/CGSB-85.100-93, Painting.
3. National Fire Code of Canada.
4. Steel Structures Painting Council (SSPC).
 - .1 Systems and Specifications Manual 1989.
5. Architectural Painting Specifications Manual, Master Painters Institute (MPI).

1.4 **SUBMITTALS**

1. Submit product data and manufacturer's installation/application instructions for each paint and coating product to be used in accordance with Section 01330 - Submittal Procedures.
2. Submit full records of all products used. List each product in relation to finish formula and include the following:

- .1 Finish formula designation.
- .2 Product type and use.
- .3 CGSB number.
- .4 Manufacturer's product number.
- .5 Colour numbers.
- .6 Manufacturer's Material Safety Data Sheets (MSDS).
- .7 Maximum VOC classification.
- .8 Ecologo certification.
- .9 MPI Environmentally Friendly Classification System Rating.

1.5 SAMPLES

1. Submit samples in accordance with Section 01330 - Submittal Procedures.
2. Submit 300 x 200 mm sample panels of each paint type specified.
3. Submit full range of available colours where colour availability is restricted.
4. Use 3 mm plate steel for finishes over metal surfaces. Use 12.5 mm birch plywood for finishes over wood surfaces. Use 50 mm concrete block for finishes over concrete or concrete masonry surfaces. Use 12.5 mm gypsum board for finishes over gypsum board and other smooth surfaces.
5. When approved, sample panels shall become acceptable standard of quality for appropriate on-site surface with one of each sample retained on-site.

1.6 QUALITY ASSURANCE

1. Painting Subcontractor shall have a minimum of five years proven satisfactory experience. When requested, provide a list of last three comparable jobs including, job name and location, specifying authority, and project manager.
2. Conform to latest MPI requirements for interior painting work including preparation and priming.
3. Materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with MPI Painting Specification Manual "Approved Product" Listing and shall be from a single manufacturer of each system used.
4. Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and shall be compatible with other coating materials as required.
5. Retain purchase orders, invoices and other documents to prove conformance with noted MPI requirements when requested by Contract Administrator.
6. Standard of Acceptance:
 - .1 Walls. No defects visible from a distance of 1000 mm at 90 degrees to surface.
 - .2 Ceilings. No defects visible from floor at 45 degrees to surface when viewed using final lighting source.
 - .3 Final coat to exhibit uniformity of colour and uniformity of sheen across full surface area.

1.7 QUALITY CONTROL

1. Provide mock-ups in accordance with Section 01400 - Quality Control.
2. When requested by Contract Administrator, prepare and paint designated surface, area, room or item (in each colour scheme) to requirement specified herein, with specified paint or coating show selected colours, gloss/sheen, textures and workmanship. When approved, surface, area, room and/or items shall become acceptable standard of finish quality and workmanship for similar on Site work.

1.8 DELIVERY STORAGE AND HANDLING

1. Deliver, store and handle materials in accordance with Section 01600 – Material and Equipment.
2. Deliver and store materials in original containers, sealed, with labels intact.
3. Indicate on containers or wrappings:
 - .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.
4. Remove damaged, opened and rejected materials from Site.
5. Provide and maintain dry, temperature controlled, secure storage.
6. Observe manufacturer's recommendations for storage and handling.
7. Store materials and supplies away from heat generating devices.
8. Store materials and equipment in a well ventilated area with temperature range 7° to 30° C.
9. Store temperature sensitive products above minimum temperature as recommended by manufacturer.
10. Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Contract Administrator. After completion of operations, return areas to clean condition to approval of Contract Administrator.
11. Provide minimum one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
12. Remove only in quantities required for same day use.
13. Fire Safety Requirements
 - .1 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.
 - .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.
14. Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials.

1.9 ENVIRONMENTAL REQUIREMENT

1. Environment Choice Program
 - .1 Submit CSA Certification Reports that products proposed for use are certified under the Environmental Choice Program. Water based paints to be certified to ECP-07-89. Solvent based paints to be certified to ECP-12-89.
2. Ventilation:
 - .1 Ventilate area of work as directed by Contract Administrator by use of approved portable supply and exhaust fans.
 - .2 Ventilate enclosed spaces.
 - .3 Provide continuous ventilation during and after application of paint. Run ventilation system 24 hours per day during installation; provide continuous ventilation for 7 days after completion of application of paint.
3. Apply paint finishes only when temperature at location of installation can be satisfactorily maintained within manufacturers' recommendations.
4. Substrate and ambient temperature must be within limits prescribed in paint standard and by manufacturer to approval of Contract Administrator.
5. Maintain minimum substrate and ambient air temperature of 5° C for Alkyd and 7° C for latex paints. Maximum relative humidity 85%. Maintain supplemental heating until paint has cured sufficiently.
6. Provide temporary heating where permanent facilities are not available to maintain minimum recommended temperatures.
7. Apply paint finish only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface.
8. Apply paint only when surface to be painted is dry, properly cured and adequately prepared.
9. Provide minimum 270 lx on surfaces to be painted.

1.10 SCHEDULING OF WORK

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

1.11 EXTRA MATERIALS

1. Submit maintenance materials in accordance with Section 01700 – Contract Closeout.
2. Submit one - four litres can of each type and colour of finish coating. Identify colour and paint type in relation to established colour schedule and finish formula.
3. Deliver to the City and store where directed.
4. Provide certificate signed by staff that extra materials have been received in order.

1.12 WASTE MANAGEMENT AND DISPOSAL

1. Separate and recycle waste materials whenever possible. Refer to Section 01500 for detail requirements.

2. Place materials defined as hazardous or toxic waste in designated containers.
3. Do not dispose of paints or solvents by pouring on the ground or through building or municipal sanitary system. Place in designated containers and ensure proper disposal in accordance with federal, provincial and municipal regulations.
4. Solvent based paints, which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner in accordance with hazardous waste regulations. Empty paint cans are to be dry prior to disposal or recycling.

2.0 **PRODUCTS**

2.1 **MATERIALS**

1. Qualified products: only paint materials listed in the MPI Approved Products List (APL) are acceptable for use on this project.
2. Paint materials for each coating formula to be products of a single manufacturer.
3. Low odour products. Whenever possible, select products exhibiting low odour characteristics. If two products are otherwise equivalent, select the product with the lowest odour.
4. Paints, coatings, adhesives, solvents, cleaners lubricants and other fluids shall:
 - .1 be non-flammable
 - .2 be manufactured without compounds which contribute to ozone depletion in the upper atmosphere.
 - .3 be manufactured without compounds which contribute to smog in the lower atmosphere.
 - .4 do not contain methylene chloride, chlorinated hydrocarbons, toxic metal pigments.
5. Water-borne surface coatings must be manufactured and transported in a manner that steps of process, including disposal of waste products arising therefrom, will meet requirements of applicable governmental acts, by laws and regulations including, for facilities located in Canada, Fisheries Act and Canadian Environmental Protection Act. (CEPA).
6. Water-borne surface coatings must not be formulated or manufactured with aromatic solvents, formaldehyde, halogenated solvents, mercury, lead, cadmium, hexavalent chromium or their components.
7. Water-borne surface coatings must have a flash point of 61.0° C or greater.
8. Water borne surface coatings must be made by a process that does not release:
 - .1 Matter in undiluted production plant effluent generating a “Biochemical Oxygen Demand” (BOD) in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.
 - .2 Total Suspended Solids (TSS) in undiluted production plant effluent in excess of 15 mg/L to a natural watercourse or a sewage treatment facility lacking secondary treatment.

2.2 **COLOURS**

1. Contract Administrator will provide Colour Schedule after contract award.
2. Selection of colours will be from manufacturer’s full range of colours.

3. Where specific products are available in a restricted range of colours, selection will be based on the limited range.
4. 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 on site. On site tinting of painting materials is allowed only with Contract Administrator's written permission.
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 in strict accordance with paint manufacturer's instructions. If directions are not on container, obtain instructions in writing from manufacturer and provide a copy of instructions to Contract Administrator.
5. Re-mix paint in containers prior to and during application to ensure break-up of lumps, complete dispersion of settled pigment, and colour and gloss uniformity.

2.4 GLOSS / SHEEN RATINGS

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

Gloss Level Category	Units @ 60°	Units @ 85°
G1-matte finish	0 to 5	Max 10
G2-velvet finish	0 to 10	10 to 35
G3-eggshell finish	10 - 25	10 - 35
G4-satin finish	20 - 35	min 35
G5-semi-gloss finish	35 - 70	
G6-gloss finish	70 - 85	
G7-high gloss finish	> 85	

2. Gloss level ratings of painted surfaces shall be as specified herein.

2.5 INTERIOR PAINT SYSTEMS

1. Concrete Vertical Surfaces: including horizontal soffit.
 1. INT 3.1A Latex G5 finish (over sealer)
2. Plaster and Gypsum Board: gypsum wallboard, drywall, "sheet rock type material", etc and textured finishes:
 1. INT 9.2A Latex G5 finish (over latex sealer) for walls throughout Pharmacy & Corridor.
 2. INT 9.2A Latex G4 finish (over latex sealer) for walls in Director's Office 420
 3. INT 9.2A Latex G1 finish (over latex sealer) for ceilings.

4. INT 9.2F Epoxy-Modified Latex G5 finish (over latex sealer) for Mech. /Elec. Room.
3. Dressed Lumber: including doors, door and window frames casings, mouldings, etc.
 1. INT 6.3T Latex G5 finish (over latex primer).
4. Concrete Horizontal Surfaces: floors and stairs.
 1. INT 3.2B, Alkyd floor enamel, low gloss, finish
5. Structural Steel and Metal Fabrications: columns, beams, joists, etc.
 1. INT 5.1E Alkyd G5 finish
6. Galvanized Metal: doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.
 1. INT 5.3A Latex G5 finish.
7. Copper:
 1. INT 5.5A Alkyd G5 finish
8. Canvas and Cotton Coverings:
 1. INT 10.1B Alkyd G5 finish
9. Wood Paneling and casework: partitions, panels, shelving, millwork, etc.
 1. INT 6.4 C semi-transparent stain finish.

3.0 EXECUTION

3.1 GENERAL

1. Perform all painting operations for interior painting in accordance with MPI Painting Specification Manual except where specified otherwise.
2. Apply all paint materials in accordance with paint manufacturers written application instructions.

3.2 PREPARATION

1. Remove electrical cover plates, light fixtures, surface hardware on doors, door stops, bath accessories and all other surface mounted fittings and fastenings prior to undertaking any painting operations. Store for re-installation after painting is completed.
2. As painting operations progress, place "WET PAINT" signs in occupied areas to approval of Contract Administrator.

3.3 PROTECTION

1. Protect existing building surfaces and adjacent structures from paint spatters, markings and other damage. If damaged, clean and restore such surfaces as directed by Contract Administrator.
2. Cover or mask floors, windows and other ornamental hardware adjacent to areas being painted to prevent damage and to protect from paint drops and splatters. Use non-staining coverings.
3. Protect items that are permanently attached such as Fire Labels on doors and frames.
4. Protect factory finished products and equipment.
5. Protect passing pedestrians, building occupants and the general public in and about the building.

3.4 EXISTING CONDITIONS

1. Investigate existing substrates for problems related to proper and complete preparation of surfaces to be painted. Report to Contract Administrator all damage, defects, unsatisfactory or unfavourable conditions before proceeding with work.
2. Investigate moisture content of surfaces to be painted and report findings to Contract Administrator. Do not proceed with work until conditions fall within acceptable range as recommended by manufacturer.
3. Maximum moisture content as follows:
 1. Plaster and wallboard: 12%.
 2. Masonry/Concrete: 12%.
 3. Concrete Block/Brick: 12%.
 4. Wood: 15%

3.5 CLEANING AND PREPARATION

1. Clean all surfaces to be painted as follows:
 1. Remove all dust, dirt, and other surface debris by vacuuming, wiping with dry, clean cloths or compressed air.
 2. Wash surfaces with biodegradable detergent and bleach and clean warm water using a stiff bristle brush to remove dirt, oil and other surface contaminants.
 3. Rinse scrubbed surfaces with clean water until foreign matter is flushed from surface.
 4. Allow surfaces to drain completely and allow to dry thoroughly.
2. 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 pre-treatment as soon as possible after cleaning and before deterioration occurs.
3. Sand existing surfaces with intact, smooth, high gloss coatings to provide adequate adhesion for new finishes.
4. Where possible, prime all surfaces of new wood surfaces before installation. Use same primers as specified for exposed surfaces.
 1. Apply vinyl sealer to MPI #36 over knots, pitch, sap and resinous areas.
 2. Apply wood filler to nail holes and cracks.
 3. Tint filler to match stains for stained woodwork.
5. Sand and dust between coats as required to provide adequate adhesion for next coat and to remove defects visible from a distance up to 1000 mm.
6. Clean new 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.
7. 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.
8. Touch up shop primer with primer as specified in applicable section. Touch-up to include cleaning and painting of field connections, welds, rivets, nuts, washers, bolts, and damaged or defective paint and rusted areas.
9. Do not apply paint until prepared surfaces have been accepted by Contract Administrator

3.6 APPLICATION

1. Method of application to be as approved by Contract Administrator. Apply paint by brush roller air sprayer airless sprayer. Conform to manufacturer's application instructions unless specified otherwise.

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.
 3. Brush and/or roll out runs and sags and over-sap marks. Rolled surfaces shall be free of roller tracking and heavy stipple.
 4. 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.
 5. Remove runs, sags and brush marks from finished work and repaint.
3. Spray application.
 1. Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
 2. Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
 3. Apply paint in a uniform layer, with overlapping at edges of spray pattern.
 4. Brush out immediately all runs and sags.
 5. Use brushes to work paint into cracks, crevices and places which are not adequately painted by spray.
4. Use dipping, sheepskins or daubers only when no other method is practical in places of difficult access and only when specifically authorized by Contract Administrator.
5. Apply each coat of paint as a continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
6. Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
7. Sand and dust between each coat to remove visible defects.
8. Finish tops of cupboards, cabinets and projecting ledges, both above and below sight lines as specified for surrounding surfaces.
9. Finish closets and alcoves as specified for adjoining rooms.
10. Finish top, bottom, edges and cut outs of doors after fitting as specified for door surfaces.

3.7 MECHANICAL / ELECTRICAL EQUIPMENT

1. In finished areas: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment. Colour and texture to match adjacent surfaces, except as noted otherwise.
2. In boiler room, mechanical and electrical rooms: paint exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment.
3. In other unfinished areas: leave exposed conduits, piping, hangers, ductwork and other mechanical and electrical equipment in original finish and touch up scratches and marks.
4. Touch up scratches and marks on factory painted finishes and equipment with paint as supplied by manufacturer of equipment.
5. Do not paint over nameplates.
6. Keep sprinkler heads free of paint.

7. Paint inside of ductwork where visible behind grilles, registers and diffusers with primer and one coat of matt black paint.
8. Paint disconnect switches for fire alarm system and exit light systems in red enamel.
9. Paint all fire protection piping Red.
10. Paint both sides and edges of backboards for telephone and electrical equipment before installation. Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

3.8 FIELD QUALITY CONTROL

1. Field inspection of interior painting operations to be carried out by Contract Administrator.
2. Advice Contract Administrator when each applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.
3. Co-operate with Contract Administrator and provide access to all areas of the Work.

3.9 RESTORATION

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

- END OF SECTION -