*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 06 90
# COLOUR SCHEDULES AND COLOUR FINISHES

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 The Owner has developed the following colour standards for exterior finishes.

.2 Refer to Section 09 90 00 Painting and Coating for paint products and definitions of gloss levels.

.3 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

.4 Prior to painting provide mock-up of paint for each substrate specified.

### 1.2 EXTERIOR FINISHES

.1 The following exterior finishes and their colours are acceptable.

| EXTERIOR SUBSTRATE | FINISH PRODUCT | COLOUR / GLOSS | COMMENTS |
|---|---|---|---|
| Concrete Unit Masonry | Anti-grafitti finish | Gloss: flat | To ten feet above grade |
| Clay Unit Masonry | Anti-grafitti finish | Gloss: flat | To ten feet above grade |
| Metal Handrails and Guardrails | | | Owner's Standard Colour: To match Sherwin Williams PT3: 2128-10 "Black Beauty" |
| Lamp Standards | Refer to Section 09 90 00 Painting and Coating | Gloss: Satin | Colour: To match Vic West metal panel colour Heron Blue 56079(Sherwin Williams PT6-CC-842 "Mistral") |

### 1.3 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Sample Boards: Provide a sample board indicating colors and finishes selected for approval by the Owner. Once colours and finishes have been selected provide the Owner with a digital record of the approved colour scheme.

### 1.4 QUALITY ASSURANCE

.1 Mock-ups: As requested by Owner.

.1 Exterior: 10 sq. m (100 sq. ft.) for each system specified.

.2 Interior: 10 sq. m (100 sq. ft.) for each system specified.

.3 Accepted mock-ups in undisturbed condition at time of Substantial Performance may become part of completed unit of Work.

## PART 2 - PRODUCTS – NOT USED

## PART 3 - EXECUTION – NOT USED

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 21 16
# GYPSUM BOARD ASSEMBLIES

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide exterior gypsum board sheathing as indicated and specified.

.2 Provide moisture resistant gypsum board as indicated and specified.

.3 Provide water resistant gypsum board behind wet locations.

.4 Provide finishing of gypsum wallboard, including taping, filling and sanding, trim, accessories, control joints, reveal moldings, fasteners, and sealants for a complete system.

.5 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

### 1.2 REFERENCES

.1 ASTM A653/A653M-13 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM C475/C475M-12e1 Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

.3 ASTM C840-13 Standard Specification for Application and Finishing of Gypsum Board.

.4 ASTM C1396/C1396M-14a Standard Specification for Gypsum Board.

.5 ASTM E497-99 (Withdrawn) Standard Practice for Installing Sound-Isolating Lightweight Partitions.

.6 British Columbia Building Code, 2012 Edition (BCBC).

.7 B.C. Wall and Ceiling Association Specification Standards Manual, 2012 (Fifth Edition).

.8 CAN/CSA A82.27-M91 (Withdrawn) Gypsum Board Products.

### 1.3 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data: Manufacturer's data including installation instructions.

### 1.4 DELIVERY, STORAGE AND HANDLING

.1 Keep products dry during shipping, storage, and handling.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

.1 Subject to compliance with specifications, the following manufacturers are acceptable:

.1 CertainTeed, www.certainteed.com, 1-800-233-8990. Distributed by Tec Agencies Ltd.

.2 CGC Inc., www.cgcinc.com, 1-800-565-6607. Contact: Wissam Itani: 778-840-1004.

.3 Georgia Pacific Building Products, www.gp.com, 1-800-225-6119.

.4 Or approved alternative.

## 2.2 MATERIALS

.1 Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end joints.

.2 Gypsum Board: Regular and fire rated, conforming to ASTM C1396, with tapered longitudinal edges, thickness as indicated. Acceptable products:

.1 ToughRock regular and fire-rated by Georgia Pacific.

.2 SHEETROCK Regular and Firecode by CGC Inc.

.3 Or approved alternative.

.3 Ceiling Board: Fire-rated light weight sag resistant, 16 mm (5/8 in.) thick to ASTM C1396, Class A flame spread rating, non-combustible core. Acceptable products:

.1 ToughRock CD Ceiling Board by Georgia Pacific.

.2 SHEETROCK Interior Ceiling Board by CGC Inc.

.3 Or approved alternative.

.4 Water Resistant Gypsum Board: Regular and Fire rated, conforming to ASTM C1396, 16 mm (5/8 in.) thick. Locations: as indicated. Post Industrial Recycled Content: Minimum of 95%. Location: Washroom walls that are to receive tile or plastic laminate. Acceptable products:

.1 DensShield Tile Backer by Georgia Pacific.

.2 Sheetrock Water Resistant by CGC Inc.

.3 Or approved alternative.

.5 Cement Board - Cementitious fibremat reinforced sheathing conforming to ASTM C1325, ANSI A118.9 cementitious backer. Edges: Tapered and featured for pre-filling. Thickness: As indicated. Acceptable products:

.1 Durock, by CGC

.2 Or approved alternative.

.6 Abuse-Resistant Gypsum Wall Board, Regular or Type X Conforming to ASTM D1037, Indentation Resistant: 45N, Edges: Tapered and featured for pre-filling. Thickness: As indicated. Acceptable products:

.1 DensArmor Plus Paperless Drywall by Georgia Pacific.

.2 Or approved alternative.

.7 Shaft Liner: Fire rated, conforming to ASTM C1288 and ASTM C1396. Thickness 25 mm (1 in.) unless noted otherwise. Acceptable products:

.1 DensGlass Ultra Shaft Liner by Georgia Pacific

.2 Cavity Shaft Wall by CGC Inc.

.3 Or approved alternative.

.8 Exterior Gypsum Sheathing: Regular and Fire rated, conforming to ASTM C1396, C1177, D3272. Water resistant gypsum core with water repellant, non-organic glass mat finish on both sides, square edges bound factory cut in thicknesses as detailed. Acceptable products:

.1 Dens Glass Gold by Georgia Pacific.

.2 Or approved alternative.

## 2.3 ACCESSORIES

.1 Acoustic Insulation: As specified in Section 07 21 00 Building Insulation.

.2 Adhesive: As recommended by gypsum board manufacturer.

.3 Control Joints: Steel, perforated wing type, with single bead, zinc coated in conformance with ASTM A525 G90 coating designation, or ASTM A633.

.4 Corner Beads: Fine mesh expanded steel wing type, zinc coated in conformance with ASTM A525 G90 coating designation, or ASTM A633.

.5 Joint Treatment: Joint tape, and joint compound for embedding and finishing shall be products of one manufacturer and in conformance with ASTM C475.

.6 Joint Tape: Paper reinforcing tape, unless noted otherwise.

.7 Metal Trim: Steel, of configuration and size as shown or required. Zinc coated in conformance with ASTM A525 G90 coating designation, or ASTM A633.

.8 Resilient Channels: 25 gage corrosion resistant steel.

.9 Screws: Metal Support Systems: Type S, bugle head, sizes as recommended by manufacturer. Length such that penetration through metal supporting member shall be 6 mm (1/4 in.) minimum and 13 mm (1/2 in.) maximum. Wood Framing: Type W, 32 mm (1-1/4 in.) long.

.10 Vapour Barrier: as specified in Section 07 25 00 Weather Barriers.

.11 Waterproof Sealer: In accordance with gypsum board manufacturer's recommendations.

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 22 16
# NON STRUCTURAL METAL FRAMING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide light gauge metal stud wall framing.

.2 Provide light gauge metal stud ceiling framing.

.3 Provide metal channel ceiling framing.

.4 Provide shaft wall assemblies with glass-mat shaft liner panels.

.5 Provide accessories including sheet metal reinforcement, trims, gaskets and joint treatments and fillers.

### 1.2 REFERENCES

.1 ASTM A653/A653M-15e1 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

.2 ASTM C645-14e1 Standard Specification for Nonstructural Steel Framing Members.

.3 ASTM E119-16 Standard Test Methods for Fire Tests of Building Construction and Materials.

.4 AWCC Wall and Ceiling Specifications Standards Manual, 2012 edition.

.5 British Columbia Building Code, 2012 Edition (BCBC).

.6 GA-600-12 Fire Resistance Design Manual, 20$^{th}$ Edition.

### 1.3 PERFORMANCE REQUIREMENTS

.1 Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E119 by a qualified independent testing agency acceptable to authorities having jurisdiction.

.2 Fire Resistance Ratings: As indicated by GA File Numbers in GA 600 "Fire Resistance Design Manual" or design designations in UL "Fire Resistance Directory" or in the listing of another testing and inspecting agency acceptable to authorities having jurisdiction.

.3 For fire rated assemblies, provide materials, including accessories and fasteners produced by one manufacturer, or, when products of more than one manufacturer are used in a rated system, they shall be acceptable to the authority having jurisdiction.

.4 Work shall conform to Association of Wall and Ceiling Contractors of B.C. (AWCC) Standards.

### 1.4 ADMINISTRATIVE REQUIREMENTS

.1 Sequencing: Sequence work to coordinate the delivery and installation of regular gypsum board assemblies after building is weatherproof and watertight.

.2 Coordinate the Work with installation of adjacent components or materials.

.3 Coordinate installation of anchorages for work of other sections.

.4 Waste Management and Disposal: Separate and recycle waste materials.

## 1.5 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data:

.1 Include data on fire resistance ratings, recycled content, and installation instructions for each type of gypsum board specified.

.2 Provide data on metal framing, gypsum board, tile backing panels, joint tape, acoustical insulation, corner beads, and edge trim.

.3 Submit manufacturer's product data for materials and prefabricated devices that are to be incorporated into the Work, providing descriptions are sufficient for identification at job site; include manufacturer's printed instructions for installation.

.4 Sustainable Design: Refer to Division 1 for Owner’s sustainability requirements.

.5 Submit product data, information, and certificates to confirm product and material properties conform to sustainability requirements.

.3 Shop Drawings:

.1 Describe fire rated assemblies for beams, floors, roofs, columns, walls, partitions and through-penetration firestop systems but do not necessarily call out each and every specific requirement of the designated ULC / UL listed assembly identified.

.2 Be thoroughly familiar with requirements published in the most recent issue of the Underwriters Laboratories Inc. Fire Resistance Directory and construct the fire rated assemblies in strict accordance with those requirements.

.3 Indicate special details associated with fireproofing, acoustic seal for openings, and firestopping seal for openings.

.4 Submit ULC Assembly Listings and Materials cut sheets for fire rated assemblies as follows:

.1 Submit copies of ULC Assembly and Materials Listing for indicating ULC Number and how assembly meets the rating criteria for assemblies as required by Code and detailed design.

.2 Use the same system and material as would be required for a tested assembly for the project; ULC Listings are tested with the specific materials indicated; substitutions will not be permitted unless evidence of equivalency is confirmed.

## 1.6 QUALITY ASSURANCE

.1 Perform Work in accordance with ASTM C840, GA-214, GA-216 and GA-600.

.2 Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience.

## 1.7 REGULATORY REQUIREMENTS

.1 Conform to applicable code for fire rated assemblies as follows using listed assembly by ULC or similar UL listed design assemblies acceptable to authorities having jurisdiction.

.2 Conform to applicable code for fire rated assemblies. Construct assemblies to achieve fire resistance ratings indicated on Drawings in accordance with ULC, cUL, or other acceptable tested approved assemblies.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

.1 Subject to compliance with specifications the following manufacturers of gypsum board products are acceptable:

.1 CertainTeed Gypsum Canada Inc. www.certainteed.com,

.2 CGC Inc. a USG Company www.cgcinc.com

.3 Georgia Pacific www.gp.com/gypsum.

### 2.2 MATERIALS - GENERAL

.1 Sustainable Design: Refer to Division 1 for Owner's Sustainability requirements.

### 2.3 FRAMING MATERIALS

.1 Studs and Tracks - General:

.1 ASTM C645; GA-216 and GA-600; sheet steel galvanized to ASTM A653/A653M, Z180 zinc coating, minimum 0.79 mm base metal thickness unless otherwise as indicated, C shape.

.2 Provide minimum thickness required by impact-resistant gypsum board.

.3 Stud Thickness at Door openings: Provide single 0.84 mm minimum steel thickness (20 gage) studs at door openings.

.4 Provide minimum Z275 hot dipped galvanized coating for steel studs Washrooms and Showers areas.

.5 Identification: Colour code steel studs for thickness in accordance with AWCC colour code chart.

.2 Acoustic Walls with STC Ratings of 45 and above: Construct of staggered studs 92 mm wide studs on a common 152 mm channel. Gauge of studs as required by code for height of wall, minimum 20 gauge (0.79 mm).

.3 Shaft Wall Assemblies - Studs and Tracks: Conforming to ASTM C645; galvanized sheet steel.

.4 Studs: Manufacturer's standard profile for repetitive members, corner and end members, and fire-resistance-rated assembly indicated, 0.84 mm thick, CH shape unless otherwise indicated.

.5 Runner Tracks: Manufacturer's standard J-shape track with manufacturer's standard long-leg length, but at least 51 mm (2 in.) long and matching studs in depth, metal thickness matching studs.

.6 Firestop Tracks: Provide firestop track at head of shaft wall on each floor level.

.7 Elevator Hoistway Entrances:

.1 Manufacturer's standard J-shape jamb strut with long-leg length of 76 mm (3 in.), matching studs in depth and thickness.

.2 Studs and Tracks – Security grille supports: Conforming to ASTM C645; galvanized sheet steel.

.1 Studs: Manufacturer's standard profile for repetitive members, corner and end members, 0.84 mm thick x 140 mm wide. Ensure size and spacing adequate to support weight of 15 kg/m2 of grille

.2 Runner Tracks: Manufacturer's standard J-shape track with manufacturer's standard long-leg length, but at least 51 mm (2 in.) long and matching studs in depth, metal thickness matching studs.

.8 Bracing: Diagonal bracing as required to underside of structure.

.9 Elevator Hoistway Entrances: Manufacturer's standard J-shape jamb strut with long-leg length of 3 in. (76 mm), matching studs in depth and thickness.

.10 Furring, Runners, Framing, and Accessories: ASTM C645; GA-216 and GA-600, galvanized, unless otherwise specified.

.11 Hangers: Rolled steel sections for exterior soffits; monel wire at interior humid locations; steel wire for other interior locations.

.12 Provide Z-shaped furrings where indicated.

.13 Resilient Furring Channels: Asymmetrical shape.

.14 Proprietary Ceiling and Bulkhead Framing System for Interior Ceilings:

.1 ASTM C635 and C645; direct-hung system composed of main beams and cross-furring members that interlock, galvanized sheet steel, 1.5 mm thick, 38 mm wide I shape with knurled faces, curved and straight, custom curved c/w purpose made splice plates, track, wall track, clips and anchorages. Provide fire rated systems where indicated; Provide one of the following:

.1 Armstrong World Industries Inc; Drywall Grid Systems.

.2 Chicago Metallic Corporation; 660/670 Drywall Ceiling Suspension System.

.3 CGC; Drywall Suspension System.

.15 Fasteners: Screws, ASTM C1002; GA-216.

.16 Anchorage to Substrate: Tie wire, screws and other metal supports, of type and size to suit application; to rigidly secure materials in place.

.17 Insulating Strip: Closed cell polyethylene foam strip, 4.7 mm (3/16 in.) thick, width to suit stud sizes, lengths as required.

.1 Product: Model Cel-R-ROSE manufactured by Owens Corning, or approved equivalent.

.18 Sheet Metal Reinforcement: Metal reinforcement for casework and wall mounted accessories conforming to ASTM A653/A653M, Steel Sheet, commercial quality galvanized to Z180 designation, minimum 1.5 mm (1/16 in.) thick, in 150 mm (6 in.) wide strips x 3050 mm (120 in.) long.

.19 Provide continuous sheet metal reinforcement for all wall mounted accessories including but not limited to the following:

.1 Chair rails

.2 Handrails

.3 Washroom accessories.

**PART 3 - EXECUTION – NOT USED**

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 30 00
# TILING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide thin set porcelain floor tile with accessories.

.2 Provide thin set wall tile with accessories.

.3 Provide anti-fracture membrane for any floor tile 8 inches or larger in any one dimension.

.4 Provide threshold transitions at door openings and between dissimilar floor finishes.

.5 Provide leveling of substrate as required to suit application.

.6 Lay out tile work so joints in floor align with joints in base and with other architectural elements.

.7 Lay out to avoid small cut tiles.

.8 Seal grout or use epoxy grout at floor and wall applications.

.9 Grout joints to be 3 mm (1/8 in.). Some adjustment will be allowed to avoid small cut tile. Joints to be no longer than 6 mm (1/4 in.).

.10 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

### 1.2 REFERENCES

.1 ANSI/CTI A108.1-2012, Specification for Installation of Ceramic Tile: Collection of 21 ANSI/CTI A108, A118, and A136 Series of Standards on Tile Installation.

.2 ANSI A137.1:2012 American National Standards Specifications for Ceramic Tile.

.3 ASTM C373-14a Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products.

.4 British Columbia Building Code, 2012 Edition (BCBC).

.5 CAN/CGSB-25.20-95 - Surface Sealer for Floors.

.6 CAN/CGSB-75.1-M88 [Withdrawn], Tile, Ceramic.

.7 CSA A3000-13 Cementitious materials compendium (Consists of A3001, A3002, A3003, A3004 and A3005), Includes Update No. 1 (2014), Update No. 2 (2014), Update No. 3 (2014).

.8 ISO 10545 Series, Ceramic Tiles, Standards for Testing.

.9 Tile Council of North America, 2015 TCNA Handbook for Ceramic, Glass, and Stone Tile Installation.

.10 TTMAC (Terrazzo Tile and Marble Association of Canada)

.1 Specification Guide 09 30 00, Tile Installation Manual 2012/2013.

.2 Hard Surface Maintenance Guide.

### 1.3 PERFORMANCE REQUIREMENTS

.1 Dynamic Coefficient of Friction: For tile installed on walkway surfaces, provide products that comply with ANSI A137.1, Section 6.2.

### 1.4 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data:

.1 Provide written instructions for using adhesives and grouts.

.2 Installation Data: Manufacturer's installation requirements.

.3 Product Certificates: For each type of product, signed by product manufacturer.

.4 Operation and Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods, and polishes and waxes.

.3 Shop Drawings:

.1 Show locations of each type of tile and tile pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

.2 Indicate tile layout, patterns, perimeter conditions, and junctions with dissimilar materials, control and expansion joints, thresholds, and setting details. Indicate alignment of joints on horizontal surfaces with joints on vertical surfaces.

.4 Samples:

.1 Assembled samples with grouted joints for each type and composition of tile and for each colour and finish required, at least 300 mm (12 in.) square and mounted on rigid panel. Use grout of type and colour(s) approved for completed work.

.2 Submit three (3) samples of transition/metal edge trim in 150 mm (6 in.) lengths.

.3 Submit samples a minimum of six (6) weeks before scheduled start of installation.

.5 Manufacturer's Certificate: Certify that products meet or exceed CAN/CGSB 75.1.

.6 Maintenance Materials:

.1 Extra Stock Materials: Prior to start of work provide 1 sq. m (10 sq. ft.) of each size, colour, and surface finish of tile specified or 2% tiled area, whichever is greater, and in no case less than one full box of each type of tile for Owner’s use as maintenance material.

.2 Neatly package in unopened containers, with protective covering for storage and identify with labels describing contents. Deliver to Owner and obtain receipt.

## 1.5 DELIVERY, STORAGE, AND PROTECTION

.1 Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Comply with requirement in ANSI A137.1 for labeling sealed tile packages.

.2 Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

.3 Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

.4 Store liquid latexes in unopened containers and protect from freezing.

.5 Protect adhesives from freezing or overheating in accordance with manufacturer's written instructions.

## 1.6 PROJECT CONDITIONS/SITE CONDITIONS

.1 Do not install adhesives in an unventilated environment.

.2 Maintain 10°C during installation of mortar materials.

.3 Environmental Limitations: Do not install tile until construction in spaces is complete, closed in, and ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

.1 Subject to compliance with specifications the following manufacturers are acceptable for setting and grouting materials.

.1 Flextile Ltd., Distributed by Olympia Tile International Ltd., www.olympiatile.com, 604-294-2244. Alberta 780-452-5050.

.2 Mapei Inc., www.mapei.com, 1-800-361-9309.

.3 Schluter Systems LP, www.schluter.com, 1-800-667-8746.

.4 Or approved alternative.

### 2.2 TILE – GENERAL

.1 ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1, "Specifications for Ceramic Tile," for types, compositions, and other characteristics indicated.

.1 Provide tile complying with Standard grade requirements, unless otherwise indicated.

.2 ANSI Standards for Tile Installation Materials: Provide materials complying with ANSI standards referenced in "Setting and Grouting Materials" Article.

.3 Factory Blending: For tile exhibiting colour variations within ranges selected during sample submittals, blend tile in factory and package so tile units taken from one package show same range in colours as those taken from other packages and match approved samples.

### 2.3 FLOOR TILE

.1 General: Tile colours and grout colours as selected by Consultant from manufacturer’s full range.

.2 Floor Tile:

.1 FT-1: Field: Porcelain mosaic tile, 6 mm thick, 50 x 50 mm, slip resistant.

.2 FT-2:. Accent: Porcelain mosaic tile, 6 mm thick, 50 x 50 mm, slip resistant, colour as selected by Consultant.

### 2.4 WALL TILE

.1 Wall Tile Types:

.1 WT-1: Field: Glazed ceramic tile, 3 mm thick, 100 x 100 mm.

.2 WT-2: Accent: Glazed ceramic tile, 3 mm thick, 100 x 100 mm.

### 2.5 MORTAR

.1 Floors: Chemical-Resistant, Water-Cleanable, Tile Setting and Grouting Epoxy: Conforming to ANSI A118.3.

.2 Bond Coat: Acceptable products:

.1 Flextile: Floors: 66 Flexlite. Fast Setting System: 101 Rapid Set Additive.

.2 Mapei: Floors: KeraBond mixed with Keralastic. Fast Setting System: GraniRapid System.

.3 Walls: Latex-Portland Cement Mortar (Thin Set): ANSI A118.4, consisting of pre-packaged dry-mortar mix combined with acrylic resin or styrene-butadiene-rubber liquid-latex additive. For wall applications, provide non-sagging mortar that complies with Paragraph F-4.6.1 in addition to the other requirements in ANSI A118.4. Acceptable Products:

.1 Ultralite by Mapei,

.2 66 Flexlite by Flextile

.3 or approved alternative.

## 2.6 CRACK-SUPPRESSION MEMBRANES

.1 Anti-Fracture Membrane: Thin set mortar conforming to ANSI A118.12 rated for extra heavy service. Acceptable products:

| | | |
|---|---|---|
| .1 | Self Leveling Coat: | 9 Flexflo by Flextile, or approved alternative. |
| .2 | Primer: | 400 Acrylic Primer, or approved alternative. |
| .3 | Bond Coat: | Flexelastic 1000, or approved alternative. |

## 2.7 ACCESSORIES

.1 Cleavage Membrane: Polyethylene sheeting, ASTM D4397, 4.0 mils (0.1 mm) thick.

.2 Decorative Trim at Ceramic Tile Interface: Anodized aluminum trim with trapezoid-perforated anchoring leg. Acceptable Product:

.1 RONDEC-DB by Schluter or approved alternative.

.3 Joint Treatment: Joint tape and joint compound for embedding and finishing shall be products of one manufacturer and in conformance with ASTM C475.

.4 Metal Edge Trim: Clear aluminum for top of base tile: Acceptable product:

.1 Quadec by Schluter.

.5 Resilient Channels: 25 gauge corrosion resistant steel. Post Industrial Recycled Content: Minimum of 80%.

.6 Reinforcing Wire Fabric: Galvanized, welded wire fabric, 50 x 50 mm (2 x 2 in.) by 1.57 mm (0.062 in.) diameter; comply with ASTM A185 and ASTM A82 except for minimum wire size.

.7 Trowelable Underlayment and Patching Compounds: Latex-modified, Portland cement-based formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

.8 Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

.9 Tile and Grout Sealer: As recommended by grout manufacturer.

## 2.8 MIXING MORTARS AND GROUT

.1 Mix mortars and grouts to comply with referenced standards and mortar and grout manufacturers' written instructions.

.2 Add materials, water, and additives in accurate proportions.

.3 Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

.4 Floor Grout: Sanded.

.5 Wall Grout: Non-Sanded.

## PART 3 - EXECUTION – NOT USED

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 51 00
# ACOUSTICAL CEILINGS

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide acoustic ceiling panels in exposed tee bar suspension system as indicated and specified.

.2 Provide Shop Drawings of reflected ceiling plans.

.3 Provide seismic bracing as required by Code.

.4 Provide Installer's Letters of Assurance B with submittals and Schedule C with Closeout Submittals.

### 1.2 RELATED SECTIONS

.1 09 21 16 Gypsum Board Assemblies.

.2 Division 23 Heating, Ventilating and Air Conditioning.

.3 Division 26 Electrical.

### 1.3 REFERENCES

.1 ASTM E84 15a, Standard Test Method for Surface Burning Characteristics of Building Materials.

.2 ASTM C423 09a Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method.

.3 ASTM E580/E580M-14 Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions.

.4 ASTM E795-05 (2012) Standard Practices for Mounting Test Specimens During Sound Absorption Tests.

.5 ASTM E1264-14 Standard Classification for Acoustical Ceiling Products.

.6 CAN/ULC S101-14 Standard Methods of Fire Endurance Tests of Building Construction and Materials.

.7 British Columbia Building Code, 2012 Edition (BCBC).

### 1.4 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data: Submit data indicating compliance with specification requirements including data on recycled content of products.

.3 Shop Drawings:

.1 Shop Drawings shall be sealed by a registered Professional Structural Engineer licensed to practice in the Province of British Columbia, with respect to seismic bracing. Include Schedules B with Shop Drawing submittals.

.2 Submit ceiling plans for Consultant's review, before installation.

.3 Indicate grid system, light fixtures, diffusers, grilles, access panels, insert locations and edge conditions.

.4 Show framing and support system for applied acoustic ceiling treatment.

.4 Samples: Submit three samples for Consultant's review. Do not order materials until review is complete. Samples shall include each type of exposed ceiling material.

.5 Maintenance Materials: Provide a minimum 2% of each type of ceiling tile for Owner's use in maintenance. Deliver maintenance material prior to start of work. Obtain receipt.

**1.5 QUALITY ASSURANCE**

.1 Installer Qualifications: Installer shall be approved by Acoustic Ceiling Assembly manufacturer, and have a minimum 3 years experience.

.2 Mock-Up:

.1 Mock up of minimum 10 sq. m (100 sq. ft.). Ensure mock-up has mechanical, electrical and sprinkler systems incorporated. Test sound transmission between mocked up rooms to ensure sound transmission requirements are met. Refer also to Field Quality Control.

**1.6 DELIVERY, STORAGE AND HANDLING**

.1 Store materials in original containers with the manufacturer's labels and seals intact.

.2 Protect from damage during handling and storage. Keep materials under dry cover, free from dampness and raised above floor.

.3 Only handle and install panels when wearing clean, white, lightweight gloves.

**PART 2 - PRODUCTS**

**2.1 MANUFACTURERS**

.1 Subject to compliance with specifications the following manufacturers are acceptable:

.1 Armstrong.

.2 Or approved alternative.

**2.2 SUSPENSION SYSTEM FOR EXPOSED TEE GRID**

.1 Non – Rated Tile Suspension System:

.1 Components: Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653.

.2 Suspension system to support full assembly with 1/360 maximum deflection.

.3 Main beams and cross tees are double-web steel construction with exposed flange design.

.4 Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint.

.5 Main beams and cross tees shall have rotary stitching.

.6 Structural Classification: ASTM C 635 Intermediate Duty exposed T, downward access removable, with die cut and interlocking components.

.7 Finish: Manufacturer's standard white.

.8 Acceptable Product: Prelude XL 15/16" Exposed Tee as manufactured by Armstrong World Industries or approved alternative.

.2 Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

.3 Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, 12 gauge minimum.

.4 Edge Moldings and Trim: Manufacturer's standard edge molding and trim pieces, in 12 foot lengths.

**2.3 LAY-IN COMPONENTS**

.1 Acoustical Tile: Un-perforated tile conforming to CAN/CGSB 92.1 and ASTM C635/C635M.

.1 Dimensions: 600 x 1220 x 20 mm (24 in. x 48 in. x 5/8 in.).

.2 Model:

.1 Cortega by Armstrong.

.2 Or approved alternative.

.3 Material: Wet-formed mineral fibre.

.4 Recycled Content: 52%.

.5 Edge Profile: Square Edge.

.6 CAC Minimum: 35.

.7 Finish: Factory-applied acrylic latex paint.

.8 Fire Hazard Rating: to ASTM E1264, Class A, Flame Spread: 25 max.

**PART 3 - EXECUTION**

**3.1 EXAMINATION**

.1 Examine the conditions under which the acoustical ceiling work is to be performed with Installer present. Correct unsatisfactory conditions.

.2 Ensure that work of other sections is secure and has been inspected and approved by Authority Having Jurisdiction. Do not start work until electrical and mechanical work behind ceiling is inspected and approved.

.3 Start of work indicates acceptance of conditions and surfaces as suitable for a satisfactory installation.

**3.2 PREPARATION**

.1 Coordinate with other trades in setting out and setting of metal items, insets, anchors, or other as work proceeds.

.2 Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Integrate with existing assemblies. Avoid the use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

**3.3 INSTALLATION**

.1 Install suspension system in accordance with manufacturer’s instructions, reviewed Shop Drawings, and Code requirements.

**3.4 INSTALLATION OF SUSPENSION FOR EXPOSED TEE GRID**

.1 Install wall angle at perimeter wall and where grid abuts vertical surfaces, using uniformly spaced screws with allowance for variations in wall surfaces.

.2 Use pre-formed corners for angles. Include trim at lights and diffusers.

.3 Adequately brace and tie system to prevent movement, and level to a maximum tolerance 3 mm in 4m (1/8 in. in 13 ft.).

.4 Suspend main 'T' runners at 600 mm (24 in.) on centre maximum with suspension hangers 100 mm (4 in.) on centre maximum. Provide additional hangers at lights and diffusers.

.5 Interlock cross 'T' into main runners at 600 mm (24 in.) on centre to conform to grid layout.

**3.5 INSTALLATION LAY-IN PANELS**

.1 Install materials in accordance with the manufacturer's printed instructions, and comply with governing regulations, fire resistance rating requirements as indicated, and industry standards applicable to Work.

.2 Arrange and orient units as indicated on reflected ceiling plans or as directed by Consultant.

.3 Install seismic restraints.

.4 Submit Letter of Assurance Schedule S-C.

**3.6 CLEANING**

.1 Promptly, as work proceeds and upon completion, clean up and remove from premises all debris and surplus material resulting from work of this Section.

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 65 00
# RESILIENT FLOORING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide resilient sheet flooring with accessories.

.2 Provide resilient base at resilient flooring, carpet, carpet tile, and sealed concrete areas as indicated and specified.

.3 Provide resilient tactile warning strips.

.4 Provide leveling compound and level substrates to provide acceptable surface for resilient flooring.

.5 Obtain and pay for the services of an independent flooring inspector. Inspector shall be approved by the Master Floor Covering Standards Institute.

.6 Coordinate the work of this Section with 03 30 00 Cast-in-Place Concrete to ensure cast slabs receive full float finish.

.7 Clean and polish floors using products recommended by flooring Manufacturer.

### 1.2 SUSTAINABILITY REQUIREMENTS

.1 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

.2 Ensure flooring materials are manufactured locally or are from a local distribution source.

.3 Ensure flooring materials used contain natural products or materials.

.4 Flooring materials used shall [be 100% recyclable] [contain a minimum of __% recycled material content.

.5 Flooring materials including any adhesive and sealant used shall be low VOC materials and shall be conditioned on site to lessen off-gassing.

### 1.3 REFERENCES

.1 ASTM D2047-11 Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.

.2 ASTM F1303-04(2014) Standard Specification for Sheet Vinyl Floor, Covering with Backing.

.3 ASTM F1861-08(2012)e1 Standard Specification for Resilient Wall Base.

.4 ASTM F1913-04(2014) Standard Specification Sheet Vinyl Floor Covering without Backing.

.5 ASTM F2034-08(2013) Standard Specification for Sheet Linoleum Floor Covering.

.6 British Columbia Building Code, 2012 Edition (BCBC).

.7 CAN/ULC-S102-10 Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

.8 CAN/ULC-S102.2-10 Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering and Miscellaneous Materials and Assemblies.

.9 CGSB 20-GP-32M [Withdrawn] Matting, Floor, Rubber or Plastic.

.10 National Floor Covering Association of Canada: Floor Covering Reference Manual, current edition (NFCA).

**1.4 SUBMITTALS**

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data:

.1 Submit product data prior to ordering product.

.2 Provide product data for each material specified, including storage, conditioning, and installation instructions.

.3 Submit Material Safety Data Sheets for sealers and adhesives.

.4 Maintenance Data: Submit, at completion, maintenance data, including procedures for recommended cleaning and polished materials, for specified type of resilient floor covering installed.

.3 Shop Drawings:

.1 Prior to start of work submit Shop Drawings.

.2 Indicate flooring types, patterns, colours, pattern direction, joint and seam locations, locations of length and cross seams and open edges, and other details.

.4 Samples: Submit three (3) samples of each type and colour of flooring material. Include full range of heat sealing materials for sheet materials.

.5 Maintenance Materials:

.1 Submit 5% of each type and colour of flooring supplied for the Owner's later use in maintenance of floors, in original packages or factory wrappings. Obtain Owner’s receipt for materials. In no instance shall maintenance material be less than:

.1 Tile: One (1) full box or Ten (10) full tiles.

.2 Sheet Goods: Three (3) square meters.

.3 Rubber Cove Base: Three (3) linear meters.

.2 Provide a minimum of one piece but no less than 5% of total length from same production run for each type, finish / colour of flash coved capping installed, and in no instance less than 3 m.

.3 Deliver maintenance materials as directed and obtain a written receipt from the Owner stating amount and date delivered.

.6 Close-Out Submittals:

.1 Submit a list of materials installed, including adhesives, accessories and bases clearly indicating material and manufacturer’s names, type/pattern / colour name and numbers for Owner’s future reference.

.2 Submit manufacturer’s maintenance data and cleaning instructions for each type of resilient flooring and base installed.

**1.5 QUALITY ASSURANCE**

.1 Installer Qualifications:

.1 Installers shall have a minimum of five (5) years local experience and have successfully completed a minimum of five (5) projects with the same or similar materials, quantities, and complexity as this project.

.2 Where requested by Consultant, provide a list of similar flooring projects completed within the last two (2) years.

.3 Only persons who are Trade Qualified or Product Qualified in accordance with NFCA Part A05 requirements shall be engaged in installation of resilient flooring. Apprentices may be employed provided they work at all times under the direct supervision of a Trade Qualified person. The ratio of apprentices to journey persons employed on site must not exceed the ratio outlined by local trade regulations.

.2 Pre Installation Conference:

.1 Prior to installation, convene conference with flooring Installer, flooring manufacturer's representative, Contractor, Consultant, Independent Inspection Agency, and Owner to establish procedures for field reviews, inspections, approval of product samples, patterns, colors and accessories, procedures for determining acceptability of substrate, environmental conditions, installation procedures, and protection of finished work.

.3 Inspection Requirements:

.1 Ensure flooring work is reviewed in accordance with NFCA Quality Assurance (QA) Program requirements by a qualified (i.e. QA Program accredited) Inspection Agency assigned by the Provincial Floor Covering Trade Association having jurisdiction. Only Inspectors who have been approved under the Quality Assurance Program shall be assigned.

.2 The appointed QA inspector will notify the Contactor in writing of substrate defects (if any) and potential problems that may affect installation of flooring materials prior to commencement of work.

.3 Fully cooperate with QA inspector at all times.

.4 Inspection shall include the following:

.1 Review of substrate requirements and conditions including substrate finish and level tolerances.

.2 Substrate testing for moisture and alkalinity and provision of written results.

.3 Confirm floor covering materials, including patterns / colours and miscellaneous related materials.

.4 Review schedule of flooring work, including material deliveries, handling, storage, conditioning, and staging of work.

.5 Review installation requirements, including heating, ventilation, condition and preparation of acceptable substrates and protection of completed work.

.6 Review of details, including seaming, bases, corners, interfaces with adjacent materials, floor access hatches), and floor penetration requirements.

.7 Coordination with mechanical subtrade to ensure that floor drain types for sheet flooring have a clamping ring and flush floor grate.

.8 Inspection procedures and reports.

.9 Provision of maintenance materials and data requirements for cleaning, treatment and maintenance for each type of flooring installed.

.10 Keep minutes of meeting including responsibilities of various parties and deviations from specifications and installation instructions and distribute minutes to attendees within 48 hours.

.4 Mock-Up:

.1 Mock up one full room of each type of flooring specified for review prior to installing balance of flooring. Show selected material, pattern / texture / colour schemes, direction of lay, finish fits to walls and doorways, seam finish, top-set base and/or flash cove details at inside and outside corners and other requirements.

.2 Ensure mock-up is reviewed by the Consultant, Owner, Installer, and flooring Manufacturer's factory/distributor representative. When accepted, the mock-up sample / room(s) shall serve as the standard for all other such work throughout the building. Do not proceed with balance of installation until such approval has been given.

.3 Mock-up may remain in finished work if accepted by Consultant and undamaged at Substantial Performance.

.4 Submit minimum 600 x 600 mm (24 x 24 in.) mock-up of flash-coved [slip-resistant] resilient floor assembly showing flash coving, cap trim, feature strip, heat welded joint and corner details for review and acceptability before commencing installation.

## 1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver materials to work areas a minimum of 24 hours before installation to condition materials to site temperature and humidity conditions.

.2 Deliver flooring materials (including adhesives and accessories) wrapped / sealed in original labelled and unopened packaging with type and pattern / colour and registration numbers clearly marked on each roll, carton, or container.

.3 Store materials in accordance with manufacturer's written requirements in a secure dry space with the manufacturer’s seals and labels intact.

.1 Store sheet/roll goods on end and do not stack tile boxes over four boxes high.

.2 Store sheet goods on end and keep at 20°C for at least 48 hours prior to installation.

.4 Store packaged material in original containers in accordance with the manufacturer's instructions with the manufacturer's seals and labels intact.

## 1.7 PROJECT COORDINATION

.1 Coordinate flooring work provisions for all trades in advance to avoid conflict and future repairs. Refer to other flowing Sections for interface details and base types where applicable.

## 1.8 PROJECT CONDITIONS

.1 Establish and maintain adequate ventilation of work area.

.2 Do not permit contaminants, including odors, to enter other parts of the building.

.3 Ensure products are conditioned and laid out flat in accordance with manufacturer’s recommendations.

.4 Ensure environmental conditions prior to and immediately after flooring installation meeting the following criteria:

.1 Heating, air conditioning and humidity control facilities in operation.

.2 Substrate moisture content and alkalinity level within manufacturer's requirements. New concrete and suspect existing concrete surfaces shall be tested in accordance with NFCA requirements by an independent testing agency in a timely manner arranged by the Contractor with costs paid for by the Owner.

.3 Environment and substrate temperatures are within manufacturer's requirements. Maintain a minimum of 18°C and maximum of 30°C for at least 48 hours prior to, during, and after installation, and ensure a minimum temperature of 13°C is maintained thereafter.

.4 Ensure humidity range is within manufacturer's requirements and as a minimum between 35% and 50% assuming an 18°C to 25°C temperature. If humidity is not within this range, postpone installation until conditions are suitable.

.5 Ensure areas to receive flooring are vented 24 to 48 hours prior to installation using fresh circulating air and adequate ventilation (for noxious fumes). Provide in accordance with WHMIS and WCB requirements.

.6 Ensure areas to receive flooring are provided with adequate illumination (minimum of 538 lux at floor level) in accordance with WCB requirements.

.7 Ensure final type and condition of each substrate is in accordance with NFCA requirements and the flooring material manufacturer's installation recommendations.

.8 Condition flooring materials including adhesives on site to avoid potential expansion, contraction, and bonding problems.

## 1.9 GUARANTEE

.1 Maintenance Bond: Furnish a 100% two (2) year Maintenance Bond on completion of resilient flooring work. The Maintenance Bond shall warrant that the work has been performed in accordance with applicable NFCA Quality Assurance Program requirements. The cost of this Maintenance Bond shall be included in the Contract Price.

.2 Provide a facsimile of the bond to be used, together with written proof of ability to furnish the bond at no cost to the Owner with Bid.

## 1.10 WARRANTIES

.1 Provide the following warranties beyond date of Substantial Performance in writing.

.1 Flooring Manufacturer:

.1 Five (5) year abrasive wear guarantee that resilient flooring will provide specified level of appearance, subject to proper care and maintenance.

.2 Seven (7) year abrasive wear guarantee that slip-resistant resilient flooring will provide specified level of appearance, subject to proper care and maintenance.

.2 Flooring Installer: One (1) year against substrate preparation / installation failures such as incorrect layout / improper fitting, seam failures, buckling due to bond failure, telegraphing of substrate imperfections, tile slippage / gapping and other deficiencies that can be attributed to poor workmanship.

.3 Adhesive Manufacturer: Ten (10) year, including labour and materials, against adhesive failure.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

.1 Subject to compliance with specifications, the following manufacturers are acceptable:

.1 Altro Canada, www.altrofloors.com, 1-800-565-4658.

.2 Armstrong World Industries Canada Ltd.

.3 Forbo Flooring Inc.

.4 Johnsonite Inc.

.5 Tarkett Group.

## 2.2 RESILIENT SHEET LINOLEUM FLOORING

.1 Resilient Sheet Linoleum Flooring Type 1: Homogeneous sheet linoleum of primarily natural materials consisting of linseed oil, wood flour, and rosin binders, with manufacturer's standard top shield protection, mixed and calendered onto natural jute backing. Pattern and color shall extend throughout total thickness of material. Minimum thickness: 2.5 mm thick.

.1 Series: Marmoleum® [Dutch Design] [Fresco] [Graphic] [Mineral] [Piano] [Prisma] [Real] [Striato] [Vivace] [Walton] [Linoflex®] Linoleum Sheet and Linoleum Adhesive..

.2 Width: 2000 mm (79 in.).

.3 Length: 32 m (105 Linear Feet)

.4 Pattern and Colour: As selected by Consultant from manufacturer's standard patterns and colours.

.5 Adhesive: Forbo Flooring, Inc., L 885 Adhesive or approved alternative.

.6 Heat Welding Rod: Forbo Flooring, Inc., Marmoweld® color-matched [solid color] [multi-color] welding rod.

.7 Topshield™ finish

.2 Resilient Sheet Linoleum Flooring Type 2: Marmoleum® Decibel Linoleum Sheet and Linoleum Adhesive. Homogeneous sheet linoleum of primarily natural materials consisting of linseed oil, wood flour, and rosin binders, mixed and calendered onto natural jute backing with an applied polyolefin comfort layer. Pattern and color shall extend throughout total thickness of material.

.1 Width: 2000 mm (79 in.).

.2 Length: 27 m (89 Linear Feet)

.3 Gauge: 3.5 mm (0.13 in.)

.4 Backing: Jute/Polyolefin Foam

.5 Pattern and Colour: As selected by Consultant from manufacturer's standard patterns and colours.

.6 Adhesive: Forbo Flooring, Inc., L 885 Adhesive

.7 Heat Welding Rod: Forbo Flooring, Inc., Marmoweld® color-matched [solid color] [multi-color] welding rod.

.8 Finish: Topshield™ finish

.3 Resilient Sheet Linoleum Flooring Type 3: Marmoleum® Composition Sheet (MCS) Linoleum Sheet and Linoleum Adhesive. Homogeneous sheet linoleum of primarily natural materials consisting of linseed oil, wood flour, and rosin binders, mixed and calendered onto natural jute backing. Pattern and color shall extend throughout total thickness of material.

.1 Width: 2000 mm (79 in.).

.2 Length: 32 m (105 Linear Feet)

.3 Gauge: 2.0 mm (0.080 in.)

.4 Backing: Jute

.5 Pattern and Colour: As selected by Consultant from manufacturer's standard patterns and colours.

.6 Adhesive: Forbo Flooring, Inc., L 885 Adhesive

.7 Heat Welding Rod: Forbo Flooring, Inc., Marmoweld® color-matched [solid color] [multi-color] welding rod.

.8 Finish: Topshield™ finish

.4 Resilient Sheet Linoleum Flooring Type 4: Marmoleum® Sport Linoleum Sheet and Linoleum Adhesive. Homogeneous sheet linoleum of primarily natural materials consisting of linseed oil, wood flour, and rosin binders, mixed and calendered onto natural jute backing. Pattern and color shall extend throughout total thickness of material.

.1 Width: 2000 mm (79 in.).

.2 Length: 28 m (92 Linear Feet)

.3 Gauge: 3.2 mm (1/8 in.)

.4 Backing: Jute

.5 Pattern and Colour: As selected by Consultant from manufacturer's standard patterns and colours.

.6 Adhesive: Forbo Flooring, Inc., L 885 Adhesive

.7 Heat Welding Rod: Forbo Flooring, Inc., Marmoweld® color-matched [solid color] [multi-color] welding rod.

## 2.3 VINYL SHEET FLOORING

.1 Vinyl Sheet Flooring: Conforming to ASTM F1913, sheet vinyl flooring. Pattern and colour shall extend evenly throughout total thickness of material.

.1 Thickness: Minimum 2.0 mm.

.2 Width: 2000 mm.

.3 Length: Manufacturer’s standard roll length.

.4 Colours and patterns: As selected by Consultant from manufacturer’s standard range.

.5 Acceptable Products:

.1 Johnsonite Tarkett iQ Granit Acoustic or approved alternative.

## 2.4 SHEET SAFETY FLOORING

.1 Safety Flooring: Confirming to ASTM F1913, slip resistant sheet vinyl flooring. Pattern, colour, and slip retardant shall extend evenly throughout total thickness of material.

.1 Thickness: Minimum 2.0 mm.

.2 Width: 2000 mm.

.3 Length: Manufacturer’s standard roll length.

.4 Static coefficient of slip resistance in excess of 0.6 when tested in accordance with ASTM D2047.

.5 Colours and patterns: As selected by Consultant from manufacturer’s standard range.

.6 Acceptable Products:

.1 Johnsonite Tarkett Granit Safe-T or approved alternative.

.2 Accessories:

.1 Vinyl welding rod: Colour matching material acceptable to flooring manufacturer:

.2 Cove former: Material as recommended by the manufacturer, 45 mm (1-3/4 in.) radius.

.3 Cap strip: Acceptable material, sized to suit application, stainless steel.

.4 Two-part Resin-based Polyurethane Adhesive: Product recommended by flooring Manufacturer; VOC content < 100 g/L.

## 2.5 PREMANUFACTURED INTEGRAL COVE BASE

.1 Prefabricated Flash-Cove Base: Pre-Fabricated bases fabricated from same materials and dye lots as resilient flooring, in maximum practical lengths, with 38 x 38 mm (1-1/2 x 1-1/2 in.) formed aluminum reinforcing bonded to back of base material; as manufactured by FlashCove Prefabricated Bases Inc. or approved alternative.

.1 Riser: 102 mm (4 in.).

.2 Toe: 76 mm (3 in.).

.3 Accessories: Metal cap strip to terminate flooring and cant strip, metal corners at inside and outside corners, as recommended by flooring manufacturer.

## 2.6 RUBBER BASE

.1 Rubber Base: Conforming to ASTM F1861, Type TP, Group 1 (solid), Style B (Cove). Use pre-formed corners for outside corners. Acceptable Product: Johnsonite Wall Base.

.1 Height: 150 mm (6 in.), or 100 mm (4 in.) as indicated.

.2 Thickness: 3 mm (1/8 in.).

.2 Base Types: Colour(s): As selected by Consultant.

## 2.7 TACTILE WARNING STRIPS

.1 Tactile Warning Strip: Homogenous rubber flooring 2 mm (5/64 in.) thick, conforming to ASTM F2169. Slip resistance to ASTM D2047 not less than 6. Acceptable Product: Roundel by Johnsonite or approved alternative. Size and location as per applicable Building Code.

.1 Pattern: Raised round dots or approved alternative.

.2 Colour(s): As selected by Consultant.

## 2.8 ACCESSORIES

.1 Adhesives:

.1 Resilient Flooring Adhesive: L910 Adhesive by Forbo Flooring, Inc.

.2 Rubber Base Adhesive: Ultrabond Eco 575 by Mapei.

.3 Or approved alternative.

.2 Leveling Compound:

.1 Purpose-made low VOC floor leveling compound as recommended by resilient flooring manufacturer for substrates indicated.

.2 Acceptable Product: Planipatch leveling and adhesive compound by Mapei.

.3 Primers: Non-toxic, solvent-free type as recommended by resilient flooring manufactured for specific material on an applicable substrate.

.4 Reducer Strips/ Edge Strips: Locate where required to accommodate level changes between floor materials, aluminum, mill finish, size and profile to suit application.

.5 Sealer and Wax: Types recommended by flooring manufacturer.

# PART 3 - EXECUTION

**3.1 EXAMINATION**

.1 Examine areas to receive flooring with Installer and Quality Assurance Inspector present. Corrent unsatisfactory conditions.

**3.2 PREPARATION:**

.1 Preparation, materials, and workmanship shall be in accordance with NFCA requirements, material manufacturer's written recommendations, detail requirements for conditions of work that apply, and guarantee periods specified.

.2 Preparation, materials, and workmanship that does not meet NFCA requirements shall be repaired or replaced in accordance with Quality Assurance requirements at no additional cost to the Owner.

**3.3 PREPARATION**

.1 Ensure substrates are clean, dry, and free of contaminants detrimental to flooring installation such as paint, varnish, oils, release agents, waxes, sealers and curing and hardening compounds not compatible with adhesives employed if flooring is glued down. Ensure surfaces are broom cleaned.

.2 Grind or sand ridges, undulations, projections and areas of carbonation and scaling and fill and level expansion joints, cracks, grooves and other irregularities.

.3 Ensure concrete substrates are machine trowelled to a smooth level surface free of marks, imperfections or conditions that will telegraph through or damage installed flooring materials.

.4 Ensure substrates are within flatness and level tolerances noted in NFCA Part A0 – Acceptable Conditions based on using straightedge or F-number values as specified. Where these values are exceeded rectify the substrate surface before start of work using a self-levelling cementitious topping.

.5 Provide conditions acceptable for the installation of floor covering materials, including level floors, finish tolerances, and conditions in accordance with manufacturer's recommendations and minimum requirements of NFCA Part A10 - Acceptable Conditions.

.6 Do not install flooring materials until testing results indicate that substrate surfaces are acceptable for covering. Correct unsatisfactory conditions.

.7 Check substrate surfaces for level tolerances to ensure they are within NFCA requirements. Ensure tolerances are verified by the QA Inspector before start of flooring installation.

.8 Conduct moisture detection testing (not moisture indication testing) to determine vapour emissions from substrate surfaces.

.9 Ensure moisture / vapour emission from substrates does not exceed 3 lbs / 1000 $ft^2$ in /24 hours as determined by the RMA Moisture / Vapour Emission Test unless recommended otherwise by flooring Manufacturer.

.10 Ensure alkalinity results do not exceed a maximum pH rating of 7.

.11 Ensure the final test results are in compliance with minimum NFCA requirements and resilient flooring and adhesive manufacturer's recommendations.

.12 Ensure moisture and alkalinity tests are conducted by an independent third party testing agency using testing methods and devices in accordance with NFCA requirements and the floor covering manufacturer's recommendations. In multiple story buildings test each floor level.

.13 Mark test locations on Record Documents / As-Built Drawings.

**3.4 INSTALLATION**

.1 Install flooring materials only after all other work, especially gypsum board and painting, has been completed and overhead mechanical and lighting work, and other wall-mounted equipment has been installed.

.2 Install in accordance with reviewed Shop Drawings.

.3 Install flooring in accordance with industry-accepted practices, such as flooring installed long way of room or corridor with end seams across the room or corridor.

.4 NFCA notes that maintenance data, cleaning, and refinishing procedures are excluded from the scope of work for this trade. Such information should be requested from the floor covering manufacturer for each type of resilient flooring installed.

**3.5 CLEANING AND PROTECTION**

.1 Clean, seal, and wax resilient flooring and base surfaces in accordance with manufacturer's written instructions using products recommended by manufacturer.

.2 Protect other work from damage during the work of this Section.

.3 Remove excess adhesive as the work progresses.

.4 Clean and remove excess adhesive, dust, dirt and extraneous materials from surfaces.

.5 Protect finished work from traffic as recommended by the manufacturer.

**3.6 PROJECT CLOSE-OUT**

.1 Conduct a cleaning, treatment and maintenance training session with Owner's facility maintenance personnel.

.2 Record moisture and alkalinity levels as determined by independent testing agency, on Record Documents. Note locations of tests on Record Floor plans.

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 68 00
# SHEET CARPETING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide carpet and accessories.

.2 Prepare substrate to receive carpet in accordance with carpet manufacturer's recommendations. Seal concrete with carpet manufacturer's recommended sealer.

.3 Installation: Glue down with double-glue installation procedure.

.4 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

### 1.2 REFERENCES

.1 British Columbia Building Code, 2012 Edition (BCBC).

.2 CAN/ULC S102.2-10, Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.

.3 Carpet and Rug Institute (CRI) "The Carpet Primer".

.4 National Floor Covering Association of Canada, Floor Covering Reference Manual, 2006 edition.

### 1.3 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data:

.1 Provide installation instructions and maintenance data for the Owner's maintenance.

.3 Shop Drawings:

.1 Submit Shop Drawings showing areas to be covered by carpet, and locations of seams, prior to installation. Avoid cross seams. Cross seams will only be permitted where made unavoidable by carpet width or roll length. Avoid seams at doors and pivot points. Do not start work prior to review of Shop Drawings.

.2 Submit full installation instruction and IIC test report for specified floor structure and finish, e.g. hardwood, ceramic tile, resilient flooring, and other flooring products.

.4 Samples:

.1 Submit samples of the selected carpet and accessories.

.2 Include: manufacturer's specifications covering the installation of the carpet.

.3 Submit material safety Data Sheets (MSDS) for sealers and adhesives.

### 1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver carpet in original mill wrappings with rolls having register number properly marked on each bale. Protect carpet from damage, dirt, stains, and moisture.

.2 Deliver and store packaged material in original containers with seals and labels intact, in accordance with manufacturer's instructions.

## 1.5 PROJECT CONDITIONS

.1 Maintain ambient temperature of 21°C (70°F) minimum for 72 hours before, during, and after installation.

## 1.6 WARRANTY

.1 The manufacturer of final carpet selected shall submit standard performance guarantees for yarn and carpet construction.

# PART 2 - PRODUCTS

## 2.1 MATERIAL

.1 Carpet 1 (CP-1): Dominator by Kraus.

.2 Construction:

| | | |
|---|---|---|
| .1 | Fiber: | Cystem 100% BCF Ultrel:indelible™ solution dyed nylon |
| .2 | Filament fusing process: | 3-ply OptiChrome. |
| .3 | Construction: | Interlocking level loop. |
| .4 | Standard backing system | QuadraBac™ enriched copolymer. |
| .5 | Pile weight: | 30 oz/y² 1017 g/m². |
| .6 | Pile height: | 0.18” 4.5 mm. |
| .7 | Gauge: | 1/10 39.4 rows/10 cm. |
| .8 | Stitches: | 11.2 s.p.i. 44.1 stitches/10 cm. |
| .9 | Density: | 9600 13 kilotex/cm². |

.3 Protection

| | | |
|---|---|---|
| .1 | Coloration: | 100% Solution dyed. |
| .2 | Stain resistance: | 8.0 (AATCC 175-1993). |
| .3 | Soil protection | Scoured & Extracted™, PermaSeal™ protected. |
| .4 | Anti-microbial protection | BioFresh™ present in backing laminate. |

.4 Sustainability Features

| | | |
|---|---|---|
| .1 | CRI/CCI: | Air quality test Green Label Plus GLP 1480 |
| .2 | Recycling program: | Eligible for recycling program |

.5 Performance:

| | | |
|---|---|---|
| .1 | Min. average tuft bind: | 67N |

.2 Min. average delamination strength: 2.5 lb/in. 4.4 N/cm

.3 Ravel test performance Construction prevents raveling when tested to PTL-CR (center ravel) and PTL-ER (edge ravel) protocols

| | | |
|---|---|---|
| .4 | Static generation: | Maximum 3.0 kV (AATCC 134) |

.5 Flammability: Canada: CGSB 4GP-129, CAN 4-S102.2 (generic per NBC supplement).

.6 Anti-microbial: Contact inhibition of fungal and bacterial growth tested according to AATCC methods 30 & 147.

.7 Light fastness: L6.

.8 Change on wet cleaning: Grey scale 5.

## 2.2 ACCESSORIES

.1 Leveling Compound: Purpose made to carpet manufacturer's recommendations.

.2 Edge Moulding Strip: Submit samples for Consultant's selection.

.3 Seaming Latex: Roberts # 812 or as recommended by Carpet Manufacturer.

.4 Seaming Tape: Roberts # 50-203 or as recommended by Carpet Manufacturer.

.5 Carpet Adhesive: Low Volatile Organic Compound (VOC) acrylic latex, as recommended by carpet manufacturer.

.6 Sealer (for Concrete Substrates): Low VOC content, acrylic latex, compatible with materials and as recommended by carpet manufacturer.

# PART 3 - EXECUTION

## 3.1 CARPET INSTALLATION

.1 Install carpet in accordance with reviewed Shop Drawings. Application: Direct Glue-down, over underlayment where indicated. Comply with CRI's Carpet Primer, Section 3, "Glue-Down Carpet Installation". Use roller to ensure carpet is fully adhered.

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification.*

# SECTION 09 68 13
# TILE CARPETING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide tile carpeting and accessories.

.2 Provide carpet tile and matching roll carpet for carpet base.

.3 Provide rubber base and accessories as specified in Section 09 65 00 Resilient Flooring.

.4 Coordinate installation so that installed flooring is not left unprotected.

.5 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

### 1.2 REFERENCES

.1 British Columbia Building Code, 2012 Edition (BCBC).

.2 CRI 104-2015, Standard Specification for Installation of Commercial Carpet.

.3 CRI Green Label plus Program.

.4 National Floor Covering Association: Floor Covering Specification Manual, current edition.

### 1.3 SYSTEM DESCRIPTION / REQUIREMENTS

.1 Warranties: Ten year dimensional stability (Aachen Method DIN 54318) ≤0.1% change or ISO 2551 ≤0.2% change.

.1 Ten year maximum 10% wear (by weight).

.2 Lifetime antistatic.

.3 Ten year light fastness.

.4 Ten year no edge ravel and no zippering.

.5 Ten year no delamination – chair pads not required.

.2 Product Availability: Product available for no less than 10 years in regards to pattern and colour.

.3 Indoor Air Quality: Carpet and Rug Institute CRI Green Label Plus™ (GLP) Indoor Air Quality Carpet Testing Program requirements (Maximum 0.5 mg / m2 . hr TVOC). Certified #GLP/9968.

.4 Carpet Flammability: ≥ 0.45 watts/cm2, Class 1 (ASTM E648).

.5 Smoke Density ≤ 450 Flaming Mode (ASTM E662).

### 1.4 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product Data:

.1 Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colours available, and method of installation.

.2 Installation Data: Manufacturer's special installation requirements indicating special procedures, and perimeter conditions requiring special attention.

.3 Include detailed printed instruction on maintenance procedures as recommended by carpet tile manufacturer, for these specific applications of Work of this Project to ensure maximum life and appearance of carpet tile.

.4 Provide information on recycling of carpet tile including manufacturer's reprocessing program. Indicate what portions of materials are recyclable.

.5 Sustainable Design: Refer to Schedule 1, Section 3.5 - Environmental Design for Owner's sustainability requirements.

.6 Submit product data, information, and certificates to confirm product and material properties conform to sustainability requirements.

.3 Shop Drawings:

.1 Indicate layout of joint, direction of carpet weave and tile pattern, and accessories.

.4 Samples:

.1 Samples for Initial Selection: Colours and patterns for each type of carpet tile, carpet base, and rubber base specified.

.2 Samples for Verification: Submit two carpet tiles illustrating colour and pattern design for each carpet colour selected.

.5 Qualification Data: For manufacturer and installer.

.6 Product Certificates: For each type of carpet, signed by product manufacturer. Include registration numbers and statements certifying that installed carpet has been manufactured to manufacturer's specifications.

.7 Closeout Submittals:

.1 Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

.2 Maintenance Materials: Provide minimum 5% of each type and color of carpet supplied for Owner's maintenance. Package in full boxes and label with product information. Obtain receipt from Owner.

## 1.5 QUALITY ASSURANCE

.1 Manufacturer Qualifications: Company specializing in manufacturing carpet tile and the Products specified in this section with minimum five years documented experience.

.2 Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience, and approved by the manufacturer.

.1 Perform work in accordance with recommendations of the Floor Covering Specification Manual including the Canadian Carpet Institute supplement, published by National Floor Covering Association (NFCA).

.3 Pre-installation Conference: Convene one week before starting work of this section.

.4 Prior to ordering adhesive, contact carpet tile manufacturers, adhesive manufacturers, concrete sealer manufacturers and concrete curing compound manufacturers to determine if products are compatible. Ensure compatible products prior to ordering adhesive.

.5 Mockup: One full room of tile carpeting with accessories in location selected by Consultant. Minimum area 15 sq. m. (150 sq.ft.).

.6 Reviewed mockup may remain as part of finished work.

## 1.6 REGULATORY REQUIREMENTS

.1 Conform to applicable code for carpet flammability requirements of in accordance with CAN/ULC S102.2.

## 1.7 PROJECT CONDITIONS

.1 Perform Work in accordance with CCA-82 Mould Guidelines for the Canadian Construction Industry as amended by the following;

.1 Perform Work in accordance with Part 6 - Construction Practices to Minimize Moisture Intrusion and as follows;

.2 Provide protective barriers and temporary enclosures during all phases of the Work.

## 1.8 WARRANTY

.1 Provide a ten year manufacturer's written labour and material guarantee carpet tile surface pile will not abrasively wear more than ten percent, excluding pulls, cuts, pilling, shedding, matting or damage due to use of improper cleaning agents or methods subject to proper care and maintenance.

.2 In addition to required warranties, provide the following written minimum warranties to commence at Date of Substantial Completion, and details that exceed specified minimum requirements.

.3 By Fibre Manufacturer:

.1 Ten year abrasive wear protection that carpet fibre will provide specified level of appearance, subject to proper care and maintenance.

.2 Ten year colour fastness to light.

.3 Ten year colour fastness to atmospheric contaminants.

.4 By Carpet Manufacturer:

.1 Fifteen year against unravelling, zippering, and delimitation or deterioration of backing not to exclude wet or steam cleaning methods.

.5 By Carpet Installer:

.1 One year protection that seams will remain sound and tight and carpet will not break away from adhesive.

# PART 2 - PRODUCTS

## 2.1 MANUFACTURERS

.1 Subject to compliance with specifications the following manufacturers are acceptable:

.1 Tandus – C & A Flooring;

.2 Interface Canada. Inc a Div. of InterfaceFLOR. www.interfaceflor.ca,

.3 Mohawk Industries, Commercial Products Div. www.mohawkflooring.com;

## 2.2 MATERIALS - GENERAL

.1 Sustainable Design: Refer to Schedule 1, Section 3.5 - Environmental Design for Owner's Sustainability requirements.

.1 VOC Requirements: All adhesives, sealants, stains, and coatings that are applied onsite and used on the interior of the building (i.e. inboard side of the weatherproofing system) must not exceed maximum permitted VOC.

.2 Source Limitations: Obtain carpet tile from one source of a single manufacturer.

.3 Backings: Materials must have high recycled content and be impervious. Open-cell backing materials are not acceptable.

.4 Dirt Repellants: Topically applied dirt repellents and/or perfluorochemicals (PFCs) are not acceptable.

.5 Disposal: Carpet face must be 100 percent recycleable. Manufacturer will recycle their product at no charge and provide 3rd party verified certification that the product has been recycled.

**2.3 MATERIALS – CARPET TILE (CPT)**

.1 Carpet Tile: Dimensionally stable, moisture impervious glass fibre reinforced fully bonded integral backing , certified under SCS, NSF 140 – Platinum or equivalent program for recycled content and meeting the VOC requirements and low emitting materials requirements and the following;

.1 Acceptable Products: Interface or approved alternative.

.2 Recycled Content: Post industrial 12.5%, post consumer 28%, total 40.5%.

.3 Indoor Air Quality: Carpet and Rug Institute CRI Green Label Plus™ (GLP) Indoor Air Quality Carpet Testing Program requirements (Maximum 0.5 mg / $m^2$ . hr TVOC). Certified #GLP/9968.

.4 Dimensions: Manufacturers standard size.

.5 Fibre Content and Type: 100 percent first quality virgin fibre, type 6/6 or 6 bulk continuous hollow filament (BCF) nylon, branded, warrantied and certified for commercial use by fibre producer and the carpet tile manufacturer.

.6 Construction: Textured loop or patterned level loop pile.

.7 Dye Method: 100% Solution Dyed.

.8 Minimum Gauge: 50 / 10 cm.

.9 Minimum Density Factor : 277.5 kg/cu. metre.

.10 Soil and Stain Protection: Integral life-long stain proofing per GSA AATC Method 175. Topical treatments not permitted.

.11 Static Control: Permanent anti-static filament, and without chemical treatment, with maximum static generation below 3.5 kilovolts (AATCC 134) after hot water extraction under standard conditions of 211 degrees C and 20 percent relative humidity.

.12 Indoor Air Quality: Provide carpet tile that complies with testing and product requirements of CRI's "Green Label Plus" program. and with maximum 0.25 mg/sq. m.hr total VOC emission in accordance with ASTM D5116.

.13 Surface Burning Characteristics: Classification for Flame Spread/Smoke Developed: 300/450.

.14 Colours: Allow for a total of four colours; as reviewed by Consultant.

.15 Installation Method: Wet spread adhesive

.16 Installation Pattern: To be reviewed by Consultant.

.17 Roll Carpet for Carpet Base: Same manufacturer, type, colour and pattern, and face fibre characteristics as carpet tile, colour and pattern to match carpet tile, manufactured in same colour dye lot as tile.

## 2.4 ACCESSORIES

.1 Cementitious Underlayment: Self-leveling and trowel grade, pre-mixed, polymer-modified, containing no gypsum, capable of being placed to a featheredge without cracking or ridges, not softened by water after final set. Minimum compressive strength 20 Mpa at 7 days.

.2 Sub-Floor Filler: White premix latex; non-shrinking, minimum 20 MPa, type as recommended by flooring material manufacturer.

.3 Adhesives: Solvent-free, low – emitting waterproof types to suit substrate application and usage conditions and as recommended by the carpet or resilient accessory manufacturer; maximum 50 g/L VOC content.

.4 Floor carpet tile adhesive self-release type, recommended by the carpet tile manufacturer. Carpet tile adhesive shall be a low odour based type free of volatile hydrocarbons such as toluene and mineral spirits.

.5 Resilient Base Adhesive: 'Ultrabond ECO 560' premium acrylic based wall –base adhesive by Mapei Inc. or approved equivalent

.6 Carpet Base Adhesive: Premium grade, solvent-free, waterproof types to suit substrate application and usage conditions as recommended by carpet manufacturer.

.7 Primers and Sealers: As recommended by carpet manufacturer.

.8 Resilient Transition and Edge Strips:

.1 Edge Strips: Protective edgings and reducer strips, heavy duty commercial grade tapered rubber, types to suit applications and traffic conditions, as recommended by manufacturer. Provide in maximum available lengths to minimize number of joints. Style and colour as reviewed by the Owner.

# PART 3 - EXECUTION

## 3.1 EXAMINATION

.1 Inspect substrate prior to start of work with Installer present. Ensure that surfaces are sound, cured, non-dusting, smooth, and free from defects likely to be detrimental to the work.

.2 Correct unsatisfactory conditions.

.3 Start of work implies acceptance of surfaces and conditions.

## 3.2 PREPARATION

.1 Preparation: Remove grease, dirt and dust remaining, fill cracks, holes, and joints with approved joint filler and rough grind to eliminate irregularities. Sweep and vacuum substrate clean.

.2 Adequately repair subfloor cracks, holes and flooring irregularities to ensure a smooth, finished appearance and to prevent accelerated wear.

.3 Prior to commencing installation of carpet where necessary, "feather" to allow for difference in floor material. Utilizing leveling compound.

.4 Ensure that base, if used, is installed before start of carpeting.

## 3.3 INSTALLATION - GENERAL

.1 Direct Gluedown: Comply with CRI's Carpet Primer, Section 3, "Glue-Down Carpet Installation".

.2 Install carpet and associated materials in accordance with manufacturer's printed instructions and recommendations, and reviewed Shop Drawings.

.3 Cut and fit carpet tile for floor outlets, cover plates, and other projections. Cut openings neat, to a minimum size, and thoroughly secured around all edges. Cut evenly along walls and butt tight.

.4 Install edge strips at all intersections of carpeting with finish floors of other materials. Edge strips shall provide a smooth transition to avoid tripping hazard. Round metal edges should be avoided.

.5 Inspect carpet closely and remove any soiled spots or excess adhesive with the proper spot remover or solvent. Remove all loose pieces of face yarn with sharp scissors.

.6 Ensure floor traffic is avoided for a min of 24 hrs to allow adhesive to adequately cure and avoid rolling traffic for a minimum of 48 hours. Provide protection against damage to carpet by closing off the area or room to unauthorized traffic or by covering carpet with protective covering. Restrict exposure to water from cleaning and other sources for a minimum of 30 days.

**3.4 PROTECTION AND CLEAN UP**

.1 Clean up as the work progresses and remove from the site rubbish resulting from this operation.

.2 Perform the following operations immediately after installing carpet:

.1 Remove excess adhesive, seam sealer, and other surface blemishes using cleaner recommended by carpet manufacturer.

.2 Remove yarns that protrude from carpet surface with sharp scissors.

.3 Vacuum carpet using commercial machine with face-beater element.

.3 Protect installed carpet to comply with CRI 104, Section 15, and “Protection of Indoor Installations."

.4 Protect carpet against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet manufacturer.

.5 Protect the work of other Sections from damage resulting from the work of this Section.

**END OF SECTION**

*This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification. This Section contains master lists of substrates and finish systems. Delete systems not required.*

# SECTION 09 91 00
# EXTERIOR PAINTING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Provide exterior painting and repainting (including above roof), coating and decorating work as indicated on Finish Schedules, Wall Assemblies, Floor and Roof Assemblies to the full extent of the Drawings and Specifications.

.2 Where work indicated is for previously unpainted surfaces, surface preparation to receive painting and finishing is not included under this section of work, except for priming and back-priming and specific pre-treatments noted or specified in Master Painters Institute (MPI) Painting Specification Manual.

.3 Where work indicated is for previously painted surfaces work includes surface preparation to receive painting and finishing including priming and back-priming and specific pre-treatments noted, recommended in MPI Repainting Manual.

.4 Work includes painting new and existing exposed drain lines, pipes, pans and other mechanical components.

.5 Work includes touch-ups and field painting necessary to complete work as indicated and specified.

.6 Provide pavement marking as indicated and specified, including international symbol for wheel chair accessible parking.

.7 Surfaces shall receive Premium Grade finish systems, 3 coats, except where MPI Manual indicates no Premium system in which case a 2 coat Custom Grade system is acceptable.

.8 Coordinate the work of this section with the work of Section 05 50 00 Metal Fabrications, and 07 92 00 Joint Sealants, to ensure compatibility of primers and finish systems.

.9 Products with low volatile organic compounds (VOC) shall be incorporated into the work. Refer to Division 1 for VOC limits.

.10 Prior to start of painting provide mock-up of painting to each substrate specified or indicated to receive paint.

.11 Where repainting is indicated it is assumed that most substrates or surfaces may contain lead.

.1 The Consultant will obtain a hazardous materials/lead report for each building being painted and provide this to the Contractor.

.2 Follow recommendations in hazardous materials report with regards to surface preparation, paint application, and clean up.

### 1.2 LEED REQUIREMENTS

.1 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

.2 Where the term 'LEED' is used within these specifications it refers to LEED (Leadership in Energy and Environmental Design) a program of the Canada Green Building Council (CaGBC).

.3 This Project is targeting certification under LEED® Canada with a goal of LEED® Gold. [Insert LEED program under which project will apply for certification _____].

.4 To obtain LEED Certification, the Project shall meet certain LEED prerequisites and obtain certain LEED credits. A summary of prerequisites and credits for which the project will be seeking certification can be obtained from the Consultant.

.5 In order to achieve LEED® Gold Certification for the Project, the Contractor and Subcontractors, suppliers and manufacturers shall comply with requirements specified in Division 1 Environmental Goals and Procedures. Contractor and Subcontractors shall be fully aware of available strategies to achieve maximum credits, including applicable exemplary performance levels for the following:

.1 Erosion and Sedimentation Control.

.2 Construction Waste Management / Product Waste Recyclability.

.3 Recycled Content.

.4 Local and Regional Materials.

.5 Construction Indoor Air Quality (IAQ) management.

.6 VOC/Low-Emitting Materials Compliance.

.6 Follow special administrative procedures and submit special Submittals to assist the Owner in obtaining LEED certification.

## 1.3 REFERENCES

.1 British Columbia Building Code, 2012 Edition (BCBC).

.2 Master Painters Institute (MPI) Architectural Painting Specification Manual, hereafter referred to as the MPI Manual. Copies of the Manual may be obtained from the following locations. T: (604)298-7558. Approved Products list is available on-line at www.paintinfo.com.

.3 Master Painters Institute Repainting Manual, hereafter referred to as MPIR, current edition.

## 1.4 DEFINITIONS

.1 Gloss: 1= Flat 2= High Sheen Flat-Velvet 3= Eggshell 4=Satin 5= Semi Gloss 6= Gloss

| | | GLOSS AT 60 DEG F | | SHEEN AT 85 DEG F |
|---|---|---|---|---|
| Gloss Level 1 | Flat/Matte Finish | Max. 5 units | and | Max. 10 units |
| Gloss Level 2 | High Sheen Flat – Velvet-like Finish | Max. 10 units | and | 10-35 units |
| Gloss Level 3 | Eggshell-like Finish | 10-25 units | and | 10-35 units |
| Gloss Level 4 | Satin-like Finish | 20-35 units | and | Min. 35 units |
| Gloss Level 5 | Semi-Gloss | 35-70 units | | |
| Gloss Level 6 | Gloss | 70-85 units | | |
| Gloss Level 7 | High-Gloss | More than 85 units | | |

## 1.5 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product data:

.1 For each product specified including two sets of Material Safety Data Sheets (MSDS) prior to commencement of work for review and for posting at job site as required.

.2 Provide an itemized list complete with manufacturer, paint type and color coding for each color used for Owner's later use in maintenance.

.3 Samples: Provide 300 x 300 mm (12 x 12 in.) samples of colors and finishes selected for approval by Consultant.

.4 Submit consent of surety with Bid Submission as proof of ability to supply a 100% two (2) year Maintenance Bond, if a local MPI Accredited Quality Assurance Association's guarantee option is not used.

## 1.6 QUALITY ASSURANCE

.1 Grade: Provide Custom grade 3 coat system in accordance with MPI Manual. Where no 3 coat system is listed in MPI Manual for substrate indicated, 2 coat system is acceptable.

## 1.7 DELIVERY, STORAGE AND HANDLING

.1 General: Deliver materials in manufacturer's original packaging with label indicating pertinent information identifying the item. Store materials in accordance with manufacturer's instructions in a protected dry location off ground. Do not open packaging nor remove labels until time of installation. Label to include the following.

.1 Product name or title of material.

.2 Product description (generic classification or binder type).

.3 Manufacturer's stock number and date of manufacture.

.4 Contents by volume, for pigment and vehicle constituents.

.5 Thinning instructions.

.6 Application instructions.

.7 Color name and number.

.2 Storage and Protection:

.1 Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 7°C (45°F). Maintain containers used in storage in a clean condition, free of foreign materials and residue. Keep storage area neat and orderly.

.2 Protect from freezing.

.3 Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

## 1.8 PROJECT AND SITE CONDITIONS

.1 Environmental Requirements: Proceed with the Work in accordance with manufacturer's requirements and instructions and any agreements or restrictions of the Pre-Construction Meeting, including the following.

.1 Water Based Paint: Apply only when the temperature of surfaces to be painted and surrounding air temperatures are between 10°C (50°F) and 32°C (90°F).

.2 Snow, Rain, Fog, or Mist: Do not apply paint when the relative humidity exceeds 85%, at temperatures less than 3°C (5°F) above the dew point, or to damp or wet surfaces.

.3 Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

## 1.9 WARRANTY

.1 Provide and pay for either of the following in accordance with MPI Painting Specification Manual requirements for painting, commencing at date of Substantial Performance.

.1 Local MPI Accredited Quality Assurance Association's two (2) Year Guarantee,

**OR**

.2 Furnish a 100% 24 month Maintenance Bond in accordance with MPI Architectural Painting Specification Manual requirements. Maintenance Bond shall warrant that all painting and decorating work has been performed in accordance with MPI Architectural Painting Specification Manual requirements. Include cost of bond in contract price.

.3 Painting and decorating contractor to provide maintenance bond consent from a reputable surety company licensed to do business in British Columbia, Canada. Cash or certified cheques are not acceptable in lieu of surety bond.

## PART 2 - PRODUCTS

### 2.1 MATERIALS – GENERAL

.1 Materials including primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, shall be selected from the MPI Painting Specification Manual “Approved Product” listing for new painting and MPI Maintenance Repainting Manual “Approved Product” listing for repainting unless noted otherwise and shall be from a single manufacturer for each system used.

.2 Other paint materials such as linseed oil and shellac shall be made by an approved manufacturer listed in the MPI Painting Specification Manual and shall be compatible with other coating materials as required.

.3 Materials and paints shall be lead and mercury free and shall comply with low VOC content requirements of Authorities Having Jurisdiction.

.4 Restricted Components: Paints and coatings shall not contain any of the following:

.1 Acrolein.
.2 Acrylonitrile.
.3 Antimony.
.4 Benzene.
.5 Butyl benzyl phthalate.
.6 Cadmium.
.7 Di (2-ethylhexyl) phthalate.
.8 Di-n-butyl phthalate.
.9 Di-n-octyl phthalate.
.10 1,2-dichlorobenzene.
.11 Diethyl phthalate.
.12 Dimethyl phthalate.
.13 Ethylbenzene.
.14 Formaldehyde.
.15 Hexavalent chromium.
.16 Isophorone.
.17 Lead.
.18 Mercury.
.19 Methyl ethyl ketone.
.20 Methyl isobutyl ketone.
.21 Methylene chloride.
.22 Naphthalene.
.23 Toluene (methylbenzene).
.24 1,1,1-trichloroethane.
.25 Vinyl chloride.

### 2.2 EXTERIOR PAINT AND COATING SYSTEMS

.1 Refer to Finish Schedule for products, locations and colours.

.2 General:

.1 Paint exterior surfaces in accordance with the following MPI Painting Manual requirements. Where the specification states VOC Max, it means maximum grams per litre less water.

.3 Asphalt Surfaces: (zone / traffic marking for drive and parking areas, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 2.1B | Alkyd zone / traffic marking finish. | | |

.4 Concrete Vertical Surfaces: (including horizontal soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 3.1A | Latex finish (over alkali resistant primer). | | |
| EXT 3.1D | Epoxy (over epoxy) | | |
| EXT 3.1E | Epoxy-modifed latex finish. | | |
| EXT 3.1F | Elastomeric coating. | | |
| EXT 3.1G | Water repellent (non-paintable) finish. | | |
| EXT 3.1H | Water repellent (paintable) finish. | | |
| EXT 3.1J | Concrete stain finish. | | |
| EXT 3.1M | Polyurethane, pigmented finish (over epoxy). | | |
| EXT 3.1N | Latex [insert texture type] aggregate finish. | | |

.5 Concrete Horizontal Surfaces: (decks, stairs, driveways, parking and court areas)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 3.2C | Epoxy deck coating, slip resistant. | | |
| EXT 3.2D | Alkyd floor enamel finish. | | |
| EXT 3.2F | Alkyd zone / traffic marking finish. [for parking lines, etc] | | |
| EXT 3.2G | Sealer, clear finish. | | |
| EXT 3.2H | Sealer, clear, water based finish. | | |
| EXT 3.2J | Concrete stain finish. | | |

.6 Cementitious Composition Board Surfaces: (vertical surfaces, horizontal soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 3.3B | Alkyd finish. | | |
| EXT 3.3D | Epoxy-modifed latex finish. | | |

| | | | |
|---|---|---|---|
| EXT 3.3E | Epoxy finish. | | |

.7 Clay Masonry Units: (pressed and extruded brick)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 4.1F | Water repellent (non-paintable) finish. | | |
| EXT 4.1G | Water repellent (paintable) finish. | | |

.8 Concrete Masonry Units: (smooth and split face block and brick)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 4.2D | Elastomeric coating. | | |

.9 Structural Steel and Metal Fabrications:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 5.1D | Alkyd finish (over alkyd primer). | | |
| EXT 5.1F | Epoxy (over H.B. epoxy) finish. | | |
| EXT 5.1Q | Alkyd finish (over surface tolerant primer). | | |
| EXT 5.1S | Epoxy (over self-priming epoxy). | | |
| EXT 5.1T | Polyurethane, pigmented finish (over H.B. self-priming epoxy). | | |
| EXT 5.1V | Epoxy deck coating finish (over epoxy primer and epoxy high build) (with SRA). | | |
| EXT 5.1X | Epoxy finish (with SRA) (over H.B. self-priming epoxy). | | |

.10 Steel High Heat: (heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 5.2A | Heat resistant enamel finish, maximum 400° F (205° C) | | |
| EXT 5.2B | Heat resistant enamel, aluminum finish, maximum 800° F (427° C). | | |
| EXT 5.2C | Inorganic zinc rich coating, maximum 750° F (400° C). | | |
| EXT 5.2D | High heat resistant coating, maximum 1100° F (593° C). | | |

.11 Galvanized Metal: (not chromate passivated)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 5.3B | Alkyd finish. | | |
| EXT 5.3C | Epoxy finish. [for use on high contact / high traffic areas] | | |
| EXT 5.3D | Polyurethane, pigmented finish (over vinyl wash and epoxy primer). [for use on high contact / high traffic areas] | | |
| EXT 5.3J | Water based light industrial coating (over water based primer). [for moderate chemical resistance] | | |
| EXT 5.3L | Polyurethane, pigmented finish (over epoxy primer) [for use on high contact / high traffic areas] | | |

.12 Aluminum: (sash, sills and frames, flashing, posts and railings, downpipes, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 5.4D | Bituminous finish. [for unexposed aluminum next to concrete, masonry, etc.] | | |
| EXT 5.4E | Epoxy finish (over vinyl wash primer). | | |
| EXT 5.4F | Alkyd finish (over quick dry metal primer). | | |

.13 Glue Laminated Beams and Columns:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.1F | Fire retardant, pigmented coating. | | |
| EXT 6.1G | Fire retardant penetrating wood preservative, clear coating. | | |
| EXT 6.1H | Polyurethane, clear, 2 component finish. | | |
| EXT 6.1J | Polyurethane, pigmented finish. | | |
| EXT 6.1K | Varnish [gloss] [semi-gloss] finish. | | |

.14 Dimension Lumber: (columns, beams, exposed joists, underside of decking, siding, fencing, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.2C | Alkyd finish (over alkyd/oil primer). | | |
| EXT 6.2D | Solid color stain finish (over alkyd/oil primer). | | |
| EXT 6.2E | Varnish [gloss] [semi-gloss] finish (over stain). | | |

| | | | |
|---|---|---|---|
| EXT 6.2F | Fire retardant, pigmented coating. | | |
| EXT 6.2G | Fire retardant penetrating wood preservative, clear coating. | | |
| EXT 6.2H | Polyurethane, clear, 2 component finish. | | |
| EXT 6.2J | Polyurethane, pigmented finish. | | |
| EXT 6.2K | Varnish [gloss] [semi-gloss] finish. | | |
| EXT 6.2L | Semi-transparent stain finish. | | |

.15 Dressed Lumber: (doors, door and window frames, casings, battens, smooth facias, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.3B | Alkyd finish (over alkyd/oil primer). [do not use flat finish on doors] | | |
| EXT 6.3C | Solid color stain finish (over alkyd/oil primer). [do not use on high contact areas or on doors] | | |
| EXT 6.3D | Semi-transparent stain finish. [do not use on doors] | | |
| EXT 6.3E | Varnish [gloss] [semi-gloss] finish (over stain). | | |
| EXT 6.3F | Varnish [gloss] [semi-gloss] finish. | | |
| EXT 6.3G | Polyurethane, clear, 2 component finish. | | |
| EXT 6.3H | Polyurethane, pigmented finish. | | |

.16 Wood Paneling: (plywood siding, fascias, soffits, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.4B | Alkyd finish (over alkyd/oil primer). | | |
| EXT 6.4C | Solid color stain finish (over alkyd/oil primer). | | |
| EXT 6.4D | Semi-transparent stain finish. | | |
| EXT 6.4E | Fire retardant, pigmented coating. | | |
| EXT 6.4F | Fire retardant penetrating wood preservative, clear coating. | | |
| EXT 6.4H | Varnish [gloss] [semi-gloss] finish. | | |
| EXT 6.4J | Varnish [gloss] [semi-gloss] finish (over stain). | | |

.17 Wood Decks and Stairs / Steps:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.5B | Alkyd floor enamel [gloss] [low gloss] finish [with SRA]. | | |
| EXT 6.5C | Alkyd floor enamel [gloss] [low gloss] finish [with SRA] (over wood preservative). [for untreated wood]. | | |

.18 Fiberglass: (panels, trims, fabrications, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.7B | Alkyd finish. | | |
| EXT 6.7D | Polyurethane, pigmented finish (over epoxy). | | |
| EXT 6.7E | Epoxy-modified latex finish. | | |
| EXT 6.7F | Epoxy finish. | | |

.19 Plastic: (vinyl siding and windows including related trims, ABS / PVA / PVC materials, fabrications, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 6.8B | Alkyd finish. | | |

.20 Stucco: (walls and soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| EXT 9.1C | Elastomeric coating. | | |
| EXT 9.1D | Epoxy finish. | | |
| EXT 9.1F | Water repellent (non-paintable) finish. | | |
| EXT 9.1G | Water repellent (paintable) finish. | | |

## 2.3 EXTERIOR REPAINTING AND COATING SYSTEMS

.1 Refer to Finish Schedule for products, locations and colours.

.2 General:

.1 Paint exterior surfaces in accordance with the following MPI Maintenance Repainting Manual requirements. Where the specification states VOC Max, it means maximum grams per litre less water.

.3 Asphalt Surfaces: (zone / traffic marking for drive and parking areas, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 2.1B | Alkyd zone / traffic marking finish. | | |

.4 Concrete Vertical Surfaces: (including horizontal soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 3.1D | Epoxy finish. | | |
| REX 3.1F | Elastomeric coating. | | |
| REX 3.1G | Water repellent non-paintable finish [for use on surfaces previously coated with similar water repellent]. | | |
| REX 3.1H | Water repellent paintable finish. | | |
| REX 3.1L | Latex finish (over alkali resistant primer). | | |
| REX 3.1M | Pigmented polyurethane finish. | | |

.5 Concrete Horizontal Surfaces: (decks, stairs, driveways, parking and court areas)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 3.2C | Epoxy non-slip deck coating. | | |
| REX 3.2D | Alkyd floor enamel finish. | | |
| REX 3.2E | Latex zone / traffic marking finish. [for parking or game court lines, etc.] | | |
| REX 3.2F | Alkyd zone / traffic marking finish. [for parking or game court lines, etc.] | | |
| REX 3.2G | Clear floor sealer. | | |
| REX 3.2H | Clear waterborne floor sealer. | | |

.6 Cementitious Composition Board Surfaces: (vertical surfaces, horizontal soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 3.3B | Alkyd finish. | | |
| REX 3.3E | Epoxy finish. | | |
| REX 3.3F | Pigmented polyurethane finish. | | |

.7 Clay Masonry Units: (pressed and extruded brick)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 4.1D | Epoxy finish. [for smooth brick] | | |
| REX 4.1F | Water repellent non-paintable finish. [for use on surfaces previously coated with similar water repellent] | | |
| REX 4.1G | Water repellent paintable finish. | | |

.8 Concrete Masonry Units: (smooth and split face block and brick).

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 4.2D | Elastomeric coating. | | |
| REX 4.2E | Epoxy finish. | | |
| REX 4.2G | Pigmented polyurethane finish. | | |
| REX 4.2H | Water repellent non-paintable finish. [for use on surfaces previously coated with similar water repellent] | | |
| REX 4.2J | Water repellent paintable finish. | | |

.9 Structural Steel and Metal Fabrications:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 5.1A | Quick dry enamel finish. | | |
| REX 5.1D | Alkyd finish. | | |
| REX 5.1F | High build epoxy finish. | | |
| REX 5.1G | Pigmented polyurethane finish (over epoxy zinc rich primer and high build epoxy). | | |
| REX 5.1H | Pigmented polyurethane finish (over high build epoxy). | | |
| REX 5.1M | Pigmented polyurethane finish (over epoxy zinc rich primer and epoxy). | | |

.10 Steel High Heat: (heat exchangers, breeching, pipes, flues, stacks, etc., with temperature range as noted)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 5.2A | Heat resistant enamel finish, maximum 400° F (205° C). | | |

| | | | |
|---|---|---|---|
| REX 5.2B | Heat resistant aluminum enamel finish, maximum 800° F (427° C). | | |
| REX 5.2C | Inorganic zinc rich coating, maximum 750° F (400° C). | | |
| REX 5.2D | High heat resistant coating, maximum 1100° F (593° C). | | |

.11 Galvanized Metal: (not chromate passivated)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 5.3B | Alkyd finish. | | |
| REX 5.3C | Epoxy finish. [for use in high contact / high traffic areas] | | |
| REX 5.3D | Pigmented polyurethane finish. [for use in high contact / high traffic areas] | | |
| REX 5.3K | Polyurethane coating (over waterborne primer). | | |

.12 Aluminum: (sash, sills and frames, flashing, posts and railings, downpipes, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 5.4A | Alkyd finish. | | |
| REX 5.4B | Pigmented polyurethane finish. | | |
| REX 5.4C | Aluminum paint finish. | | |
| REX 5.4D | Bituminous finish [for unexposed alum. next to concrete, masonry, etc.] | | |
| REX 5.4E | Epoxy finish. | | |

.13 Glue Laminated Beams and Columns:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 6.1B | Alkyd finish. | | |
| REX 6.1C | Solid color stain finish. | | |
| REX 6.1D | Semi-transparent stain. | | |
| REX 6.1E | Clear (two component) polyurethane finish (over stain). | | |
| REX 6.1F | Pigmented polyurethane 2 component finish. | | |
| REX 6.1G | Varnish [gloss] [semi-gloss] finish. | | |
| REX 6.1H | Varnish [gloss] [semi-gloss] finish (over stain). | | |

| | | | |
|---|---|---|---|
| REX 6.1J | Two component polyurethane finish (over stain). | | |
| REX 6.1K | Pigmented fire retardant coating (ULC rated). | | |

.14 Dimension Lumber: (columns, beams, exposed joists, underside of decking, siding, fencing, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 6.2C | Alkyd finish. | | |
| REX 6.2D | Solid color stain finish. | | |
| REX 6.2E | Semi-transparent stain finish. | | |
| REX 6.2F | Pigmented fire retardant coating (ULC rated). | | |
| REX 6.2G | Clear two component polyurethane finish. | | |
| REX 6.2H | Pigmented polyurethane finish. | | |
| REX 6.2J | Varnish [gloss] [semi-gloss] finish. | | |

.15 Dressed Lumber: (doors, door and window frames, casings, battens, smooth facias, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 6.3B | Alkyd finish. [do not use flat finish on doors / door frames] | | |
| REX 6.3C | Solid color stain finish. [do use on high contact areas or on doors / door frames] | | |
| REX 6.3D | Semi-transparent stain finish. [do not use on doors / door frames] | | |
| REX 6.3E | Varnish [gloss] [semi-gloss] finish (over stain). | | |
| REX 6.3F | Varnish [gloss] [semi-gloss] finish. | | |
| REX 6.3G | Clear two component polyurethane finish. | | |
| REX 6.3H | Pigmented polyurethane finish. | | |

.16 Wood Paneling: (plywood siding, fascias, soffits, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 6.4B | Alkyd finish. | | |
| REX 6.4C | Solid color stain finish. | | |
| REX 6.4D | Semi-transparent stain finish. | | |
| REX 6.4E | Pigmented fire retardant coating (ULC rated). | | |

| | | | |
|---|---|---|---|
| REX 6.4F | Clear fire retardant penetrating wood preservative coating (ULC rated). | | |
| REX 6.4H | Varnish [gloss] [semi-gloss] finish. | | |
| REX 6.4J | Varnish [gloss] [semi-gloss] finish (over stain). | | |

.17 Wood Decks and Stairs / Steps:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 6.5B | Alkyd floor enamel [gloss] [low gloss] finish [SRA Optional]. | | |
| REX 6.5C | Deck stain (for previously stained decks). | | |
| REX 6.5D | Non-Slip epoxy deck coating (for plywood decks). | | |

.18 Plastic: (vinyl siding and windows including related trims, ABS / PVA / PVC materials, fabrications, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 6.8B | Alkyd finish. | | |

.19 Stucco: (walls and soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| REX 9.1C | Elastomeric coating. | | |
| REX 9.1D | Epoxy finish. | | |
| REX 9.1E | Water repellent paintable finish. | | |
| REX 9.1H | Water repellent non-paintable finish. | | |

## PART 3 - EXECUTION

### 3.1 PREPARATION OF SURFACES

.1 Prepare surfaces in accordance with MPI Manual requirements unless indicated otherwise. Refer to the Manual for specific surface preparation requirements for each substrate material.

.2 Prepare surfaces for repainting in accordance with MPI Maintenance Repainting Manual. Refer to the Maintenance Repainting Manual for specific surface preparation requirements for each substrate material.

### 3.2 APPLICATION

.1 Do not paint unless substrates are acceptable and/or until environmental conditions (heating, ventilation, lighting and completion of other subtrade work) are acceptable for applications of products.

.2 Paint surfaces requiring paint or stain finish to minimum MPI Manual finish requirements with application methods in accordance with best trade practices for type and application of materials used.

.3 Use aggregate coating or a slip resistant additive in paint for surfaces as noted (e.g. stair treads/landings, handrails) where scheduled to be painted.

.4 Continue paint finishes through behind wall mounted items.

**3.3 FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE**

.1 Ensure all surfaces, preparation and paint applications are inspected.

.2 Painted exterior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent:

.1 Brush marks, roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.

.2 Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.

.3 Damage due to touching before paint is sufficiently dry or any other contributory cause.

.4 Damage due to application on moist surfaces or caused by inadequate protection from the weather.

.5 Damage or contamination of paint due to blown contaminants such as dust or spray paint.

.3 Painted surfaces shall be considered unacceptable if any of the following are evident under natural lighting source for exterior surfaces:

.1 Visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 3 feet (1m).

.2 Visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 3 feet (1m).

.3 Visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.

.4 When the final coat on any surface exhibits a lack of uniformity of colour, sheen, texture, and hiding across full surface area.

.4 Repair rejected surfaces at no additional cost to the Owner. Small affected areas may be touched up. Repaint large affected areas or areas without sufficient dry film thickness. Remove runs and sags of paint by scraper or by sanding prior to application of paint.

**3.4 MECHANICAL AND ELECTRICAL EQUIPMENT**

.1 Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas as well as inside cupboards and cabinet work. Colour and texture to match adjacent surfaces, except as noted otherwise. Coordinate with mechanical trades applying banding and labeling after pipes have been painted.

.2 Paint pipes at Service level to match Base Building colour code.

.3 Before painting any pipes in public areas, review with Consultant.

.4 Paint gas piping gas standard yellow where visible in service spaces.

.5 Paint surfaces inside of ductwork, and elsewhere behind grilles, where visible, using primer and one coat of matte black paint.

.6 Paint both sides and edges of plywood backboards for equipment before installation.

.7 Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

**3.5 PAINT SCHEDULE**

.1 Perform painting in accordance with the instructions of the selected paint manufacturers and in conformance with the systems specified.

.2 Additional coats may be required to achieve acceptable colour and coverage.

**3.6 PROTECTION AND CLEAN-UP**

.1 Protect newly painted exterior surfaces from elements condensation and contamination until paint coatings are completely dry. Erect barriers or screens and post signs to warn of or limit or direct traffic.

.2 Remove spilled, splashed, splattered or over sprayed paint as work progresses, remove waste materials and keep area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.

**END OF SECTION**

*0This document contains standards that are the minimum requirements for BCIT construction projects. The information in the document is organized using the MasterFormat® and SectionFormat® systems. It is not a specification; it is intended to supplement the Consultant's own documents. Do not use this information as a standalone specification. This Section contains master lists of substrates and finish systems. Delete systems not required.*

# SECTION 09 90 00
# INTERIOR PAINTING

## PART 1 - GENERAL

### 1.1 SUMMARY

.1 Surfaces shall receive Premium grade finish systems, three (3) coats, except where MPI Manual indicates no Premium system in which case a two (2) coat Custom system is acceptable.

.2 Coordinate the work of this Section closely with the work of Section 05 50 00 Metal Fabrications and 07 92 00 Joint Sealants to ensure compatibility of primers and finish systems.

.3 Products with low volatile organic compounds (VOC) shall be incorporated into the Work. Refer to Division 1 for VOC limits.

.4 Prior to start of painting provide mock-up of painting to each substrate specified or indicated to receive paint.

.5 Where repainting is indicated it is assumed that most substrates or surfaces may contain lead.

.1 The Consultant will obtain a hazardous materials/lead report for each building being painted and provide this to the Contractor.

.2 Follow recommendations in hazardous materials report with regards to surface preparation, paint application, and clean up.

### 1.2 LEED REQUIREMENTS

.1 Sustainability Goals - Mandatory Compliance: comply with allowable VOC levels for all adhesives, sealants, paints and other coatings as outlined in Division 1.

.2 Where the term 'LEED' is used within these specifications it refers to LEED (Leadership in Energy and Environmental Design) a program of the Canada Green Building Council (CaGBC).

.3 This Project is targeting certification under LEED® Canada with a goal of LEED® Gold. [Insert LEED program under which project will apply for certification _____].

.4 To obtain LEED Certification, the Project shall meet certain LEED prerequisites and obtain certain LEED credits. A summary of prerequisites and credits for which the project will be seeking certification can be obtained from the Consultant.

.5 In order to achieve LEED® Gold Certification for the Project, the Contractor and Subcontractors, suppliers and manufacturers shall comply with requirements specified in Division 1 Environmental Goals and Procedures. Contractor and Subcontractors shall be fully aware of available strategies to achieve maximum credits, including applicable exemplary performance levels for the following:

.1 Erosion and Sedimentation Control.

.2 Construction Waste Management / Product Waste Recyclability.

.3 Recycled Content.

.4 Local and Regional Materials.

.5 Construction Indoor Air Quality (IAQ) management.

.6 VOC/Low-Emitting Materials Compliance.

.6 Follow special administrative procedures and submit special Submittals to assist the Owner in obtaining LEED certification.

## 1.3 REFERENCES

.1 British Columbia Building Code, 2012 Edition (BCBC).

.2 Master Painters Institute (MPI) Architectural Painting Specification Manual, hereafter referred to as the MPI Manual. Copies of the Manual may be obtained from the following locations. T: (604)298-7558. Approved Products list is available on-line at www.paintinfo.com.

.3 Master Painters Institute Repainting Manual, hereafter referred to as MPIR, current edition.

## 1.4 DEFINITIONS

.1 Gloss: 1= Flat 2= High Sheen Flat-Velvet 3= Eggshell 4=Satin 5= Semi Gloss 6= Gloss

| | | GLOSS AT 60 DEG F | | SHEEN AT 85 DEG F |
|---|---|---|---|---|
| Gloss Level 1 | Flat/Matte Finish | Max. 5 units | and | Max. 10 units |
| Gloss Level 2 | High Sheen Flat – Velvet-like Finish | Max. 10 units | and | 10-35 units |
| Gloss Level 3 | Eggshell-like Finish | 10-25 units | and | 10-35 units |
| Gloss Level 4 | Satin-like Finish | 20-35 units | and | Min. 35 units |
| Gloss Level 5 | Semi-Gloss | 35-70 units | | |
| Gloss Level 6 | Gloss | 70-85 units | | |
| Gloss Level 7 | High-Gloss | More than 85 units | | |

## 1.5 SUBMITTALS

.1 Submit in accordance with Section 01 33 00 Submittal Procedures.

.2 Product data:

.1 For each product specified including two sets of Material Safety Data Sheets (MSDS) prior to commencement of work for review and for posting at job site as required.

.2 Provide an itemized list complete with manufacturer, paint type and clour coding for each clour used for Owner's later use in maintenance.

.3 Samples: Provide 300 x 300 mm (12 x 12 in.) samples of clours and finishes selected for approval by Consultant.

.4 Submit consent of surety with Bid Submission as proof of ability to supply a 100% two (2) year Maintenance Bond, if a local MPI Accredited Quality Assurance Association's guarantee option is not used.

## 1.6 QUALITY ASSURANCE

.1 Grade: Provide Custom grade 3 coat system in accordance with MPI Manual. Where no 3 coat system is listed in MPI Manual for substrate indicated, 2 coat system is acceptable.

## 1.7 DELIVERY, STORAGE AND HANDLING

.1 General: Deliver materials in manufacturer's original packaging with label indicating pertinent information identifying the item. Store materials in accordance with manufacturer's instructions in a protected dry location off ground. Do not open packaging nor remove labels until time of installation. Label to include the following.

.1 Product name or title of material.

.2 Product description (generic classification or binder type).

.3 Manufacturer's stock number and date of manufacture.

.4 Contents by volume, for pigment and vehicle constituents.

.5 Thinning instructions.

.6 Application instructions.

.7 Colour name and number.

.2 Storage and Protection:

.1 Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 7°C (45°F). Maintain containers used in storage in a clean condition, free of foreign materials and residue. Keep storage area neat and orderly.

.2 Protect from freezing.

.3 Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

## 1.8 PROJECT AND SITE CONDITIONS

.1 Environmental Requirements: Proceed with the Work in accordance with manufacturer's requirements and instructions and any agreements or restrictions of the Pre-Construction Meeting, including the following.

.1 Water Based Paint: Apply only when the temperature of surfaces to be painted and surrounding air temperatures are between 10°C (50°F) and 32°C (90°F).

.2 Snow, Rain, Fog, or Mist: Do not apply paint when the relative humidity exceeds 85%, at temperatures less than 3°C (5°F) above the dew point, or to damp or wet surfaces.

.3 Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

## 1.9 WARRANTY

.1 Provide and pay for either of the following in accordance with MPI Painting Specification Manual requirements for painting, commencing at date of Substantial Performance.

.1 Local MPI Accredited Quality Assurance Association's two (2) Year Guarantee,

**OR**

.2 Furnish a 100% 24 month Maintenance Bond in accordance with MPI Architectural Painting Specification Manual requirements. Maintenance Bond shall warrant that all painting and decorating work has been performed in accordance with MPI Architectural Painting Specification Manual requirements. Include cost of bond in contract price.

.3 Painting and decorating contractor to provide maintenance bond consent from a reputable surety company licensed to do business in British Columbia, Canada. Cash or certified cheques are not acceptable in lieu of surety bond.

# PART 2 - PRODUCTS

## 2.1 MATERIALS – GENERAL

.1 Materials including primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, shall be selected from the MPI Painting Specification Manual "Approved Product" listing for new painting and MPI Maintenance Repainting Manual "Approved Product" listing for repainting unless noted otherwise and shall be from a single manufacturer for each system used.

.2 Other paint materials such as linseed oil and shellac shall be made by an approved manufacturer listed in the MPI Painting Specification Manual for new painting and MPI

Maintenance Repainting Manual for repainting and shall be compatible with other coating materials as required.

.3 Materials and paints shall be lead and mercury free and shall comply with low VOC content requirements of Authorities Having Jurisdiction.

.4 Restricted Components: Paints and coatings shall not contain any of the following:

.1 Acrolein.
.2 Acrylonitrile.
.3 Antimony.
.4 Benzene.
.5 Butyl benzyl phthalate.
.6 Cadmium.
.7 Di (2-ethylhexyl) phthalate.
.8 Di-n-butyl phthalate.
.9 Di-n-octyl phthalate.
.10 1,2-dichlorobenzene.
.11 Diethyl phthalate.
.12 Dimethyl phthalate.
.13 Ethylbenzene.
.14 Formaldehyde.
.15 Hexavalent chromium.
.16 Isophorone.
.17 Lead.
.18 Mercury.
.19 Methyl ethyl ketone.
.20 Methyl isobutyl ketone.
.21 Methylene chloride.
.22 Naphthalene.
.23 Toluene (methylbenzene).
.24 1,1,1-trichloroethane.
.25 Vinyl chloride.

## 2.2 INTERIOR PAINT AND COATING SYSTEMS

.1 Refer to Finish Schedule for products, locations and colours.

.2 General:

.1 Paint interior surfaces in accordance with the following MPI Painting Manual requirements. Where the specification states VOC Max, it means maximum grams per litre less water.

.3 Concrete Vertical Surfaces: (including horizontal soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 3.1A | Latex finish (over alkali-resistant primer). | | |
| INT 3.1B | Latex finish over [insert texture type] latex aggregate. | | |
| INT 3.1C | High performance architectural latex finish. | | |
| INT 3.1D | Alkyd finish. | | |
| INT 3.1E | Latex finish. | | |
| INT 3.1F | Epoxy (tile-like) finish. [for smooth concrete] | | |

| | | | |
|---|---|---|---|
| INT 3.1G | Epoxy-modified latex finish [for smooth concrete] | | |
| INT 3.1H | Multiclour finish. | | |
| INT 3.1J | Water repellent paintable finish. | | |
| INT 3.1K | Concrete stain finish. | | |
| INT 3.1L | Water based light industrial coating. | | |
| INT 3.1M | Institutional low odor / low VOC finish. | | |
| INT 3.1N | Latex [insert texture type] aggregate coating. | | |
| INT 3.1P | | | |
| INT 3.1Q | Epoxy high build gloss finish (over epoxy high build gloss). | | |

.4 Concrete Horizontal Surfaces: (floors and stairs)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 3.2A | Latex floor enamel [gloss] [low gloss] finish. | | |
| INT 3.2B | Alkyd floor enamel [gloss] [low gloss] finish. | | |
| INT 3.2C | Epoxy finish. | | |
| INT 3.2D | Pigmented polyurethane finish. | | |
| INT 3.2E | Concrete stain finish. | | |
| INT 3.2F | Concrete floor sealer finish. | | |
| INT 3.2G | Concrete floor sealer, water based finish. | | |
| INT 3.2H | Latex zone / traffic marking finish. [for parking lines, etc] | | |
| INT 3.2J | Alkyd zone / traffic marking finish. [for parking lines, etc] | | |
| INT 3.2K | Polyurethane, Clear (2 component) finish. | | |
| INT 3.2L | Epoxy high build low gloss finish (over epoxy high build low gloss). | | |
| INT 3.2M | Epoxy high build gloss finish (over epoxy high build gloss). | | |

.5 Cementitious Composition Board Surfaces:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 3.3A | Latex finish. | | |
| INT 3.3B | High performance architectural latex finish. | | |

| | | | |
|---|---|---|---|
| INT 3.3C | Alkyd finish. | | |
| INT 3.3D | Epoxy-modified latex finish. | | |
| INT 3.3E | Epoxy (tile like) finish. | | |
| INT 3.3F | Multiclour finish. | | |
| INT 3.3G | Institutional low odor / low VOC finish. | | |
| INT 3.3H | Water based light industrial coating. | | |

.6 Clay Masonry Units: (pressed and extruded brick)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 4.1A | Latex finish. | | |
| INT 4.1B | Latex [insert texture type] aggregate coating. | | |
| INT 4.1C | Water based light industrial coating. | | |
| INT 4.1D | Alkyd finish. | | |
| INT 4.1F | Epoxy (tile like) finish. [for smooth concrete] | | |
| INT 4.1G | Epoxy-modified latex finish. [for smooth surfaces] | | |
| INT 4.1H | Multiclour finish. | | |
| INT 4.1J | Water repellent, clear (paintable) finish. | | |
| INT 4.1K | Polyurethane, clear, 2 component finish. | | |
| INT 4.1L | High performance architectural latex finish. | | |
| INT 4.1M | Institutional low odor / low VOC finish. | | |

.7 Concrete Masonry Units: (smooth and split face block and brick)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 4.2D | High performance architectural latex finish. | | |
| INT 4.2E | Institutional low odor / low VOC finish. | | |
| INT 4.2F | Epoxy (tile-like) finish. [for dry environments] | | |
| INT 4.2G | Epoxy (tile-like) finish. [for wet environments] | | |
| INT 4.2L | Water repellent (non-paintable) finish. [do not use on light weight block] | | |
| INT 4.2M | Water repellent (paintable) finish. [do not use on light weight block] | | |
| INT 4.2P | High performance architectural latex finish (over alkali resistant primer). | | |

| | | | |
|---|---|---|---|
| INT 4.2Q | Polyurethane, clear, 2 component finish. | | |
| INT 4.2R | Epoxy high build low gloss finish (over epoxy high build low gloss). | | |
| INT 4.2S | Epoxy high build gloss finish (over epoxy high build gloss). | | |

.8 Structural Steel and Metal Fabrications: (columns, beams, joists, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 5.1A | Quick dry enamel [gloss] [semi-gloss] finish. | | |
| INT 5.1B | Water based light industrial coating. | | |
| INT 5.1C | Water based dry fall finish. | | |
| INT 5.1CC | Water based dry fall finish (over quick dry shop primer). [for dry locations only] | | |
| INT 5.1D | Alkyd dry fall finish. | | |
| INT 5.1DD | Alkyd dry fall finish (over quick dry shop primer). [for dry locations only] | | |
| INT 5.1E | Alkyd finish. | | |
| INT 5.1F | Polyurethane, pigmented finish (over epoxy primer). | | |
| INT 5.1G | Polyurethane, pigmented finish (over high-build epoxy). | | |
| INT 5.1H | Polyurethane, pigmented finish (over inorganic zinc primer and epoxy). | | |
| INT 5.1J | Polyurethane, pigmented finish (over epoxy zinc rich primer and epoxy). | | |
| INT 5.1K | Epoxy-modified latex finish. | | |
| INT 5.1L | Epoxy finish. | | |
| INT 5.1LL | Epoxy Deck Coating finish (over epoxy primer). | | |
| INT 5.1R | High performance architectural latex finish. | | |
| INT 5.1S | Institutional low odor / low VOC finish. | | |
| INT 5.1U | Polyurethane, pigmented finish (over self-priming epoxy). | | |
| INT 5.1V | Epoxy finish (over self-priming epoxy). | | |
| INT 5.1Y | Epoxy high build low gloss finish (over primer) | | |
| INT 5.1Z | Epoxy high build gloss finish (over epoxy primer). | | |

.9 Steel High Heat:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 5.2A | Heat resistant enamel finish, maximum 400° F (205° C). | | |
| INT 5.2B | Heat resistant enamel, aluminum paint finish, maximum 800° F (427° C). | | |
| INT 5.2C | Inorganic zinc rich coating, maximum 750° F (400° C). | | |
| INT 5.2D | High heat resistant coating, maximum 1100° F (593° C). | | |

.10 Galvanized Metal: (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 5.3L | Alkyd finish (over non-cementitious primer). | | |
| INT 5.3M | High performance architectural latex finish. | | |
| INT 5.3N | Institutional low odor / low VOC finish. | | |

.11 Glue Laminated Beams and Columns:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.1D | Polyurethane varnish finish. | | |
| INT 6.1G | Semi transparent stain finish. | | |
| INT 6.1J | Polyurethane varnish [gloss] [satin] finish (over stain). | | |
| INT 6.1S | Polyurethane, clear, moisture cured [gloss] [flat] finish (over stain). | | |
| INT 6.1U | Fire retardant, pigmented coating (ULC rated). | | |
| INT 6.1V | Fire retardant, clear coating (ULC rated). | | |
| INT 6.1W | Polyurethane, clear, 2 component finish. | | |

.12 Dimension Lumber: (columns, beams, exposed joists, underside of decking, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.2B | High performance architectural latex finish. | | |
| INT 6.2C | Alkyd finish. | | |

| | | | |
|---|---|---|---|
| INT 6.2F | Fire retardant, pigmented coating (ULC rated). | | |
| INT 6.2G | Fire retardant, clear coating (ULC rated). | | |
| INT 6.2H | Polyurethane varnish finish. | | |
| INT 6.2L | Institutional low odor / low VOC finish. | | |
| INT 6.2M | Water based varnish, clear finish (over stain). | | |
| INT 6.2N | Polyurethane,clear, moisture cured [gloss] [flat] finish (over stain). | | |

.13 Dressed Lumber: (including doors, door and window frames, casings, molding, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.3A | High performance architectural latex finish. | | |
| INT 6.3B | Alkyd finish. | | |
| INT 6.3D | Alkyd varnish finish (over stain). | | |
| INT 6.3E | Polyurethane varnish finish (over stain). | | |
| INT 6.3J | Alkyd varnish finish. | | |
| INT 6.3K | Polyurethane varnish finish. | | |
| INT 6.3R | Fire retardant, pigmented finish (ULC rated). | | |
| INT 6.3S | Fire retardant, clear finish (ULC rated). | | |
| INT 6.3T | Latex [semi-gloss] [gloss] finish (over latex primer). | | |
| INT 6.3U | Latex [semi-gloss] [gloss] finish (over alkyd primer). | | |
| INT 6.3V | Institutional low odor / low VOC finish. | | |
| INT 6.3W | Water based varnish, clear finish (over stain). | | |
| INT 6.3X | Polyurethane, clear, moisture cured [gloss] [flat] finish. | | |
| INT 6.3Y | Polyurethane, clear, moisture cured [gloss] [flat] finish (over stain). | | |

.14 Wood Paneling and Casework: (partitions, panels, shelving, millwork, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.4A | Latex finish (over alkyd sealer). | | |
| INT 6.4B | Alkyd finish (over alkyd sealer). | | |
| INT 6.4C | Semi-transparent stain finish. | | |

| | | | |
|---|---|---|---|
| INT 6.4D | Alkyd varnish finish (over stain). | | |
| INT 6.4E | Polyurethane varnish finish (over stain). | | |
| INT 6.4F | Lacquer finish (over stain). | | |
| INT 6.4G | Alkyd varnish finish. | | |
| INT 6.4H | Lacquer, pigmented finish. | | |
| INT 6.4J | Polyurethane varnish finish. | | |
| INT 6.4P | Fire retardant, pigmented coating (UL/ULC rated). | | |
| INT 6.4Q | Fire retardant, clear coating (UL/ULC rated). | | |
| INT 6.4S | High performance architectural latex finish. | | |
| INT 6.4T | Institutional low odor / low VOC finish. | | |
| INT 6.4U | Water based varnish, clear finish (over stain). | | |
| INT 6.4V | Polyurethane, clear moisture cured [gloss] [flat] finish (over stain). | | |

.15 Wood Floors and Stairs

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.5A | Alkyd floor enamel [low gloss] [gloss] finish. | | |
| INT 6.5B | Polyurethane varnish [gloss] finish (over stain). | | |
| INT 6.5C | Polyurethane varnish [gloss] finish. | | |
| INT 6.5E | Alkyd game line marking. | | |
| INT 6.5F | Epoxy game line marking. | | |
| INT 6.5M | Polyurethane, clear, 2 component finish. | | |

.16 Fiberglass: (panels, trims, fabrications, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.7A | Latex finish. | | |
| INT 6.7B | Alkyd finish. | | |
| INT 6.7D | Epoxy finish. | | |
| INT 6.7E | Polyurethane, pigmented finish. | | |
| INT 6.7F | Epoxy-modified latex finish. | | |
| INT 6.7H | High performance architectural latex finish. | | |

| | | | |
|---|---|---|---|
| INT 6.7J | Institutional low odor / low VOC finish. | | |

.17 Plastic: (lumber, panels, trims, fabrications, vinyl wall covering, PVA / PVC materials, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 6.8A | High performance architectural latex finish. | | |
| INT 6.8F | Institutional low odor / low VOC finish. | | |

.18 Spray Textured Surfaces: (ceilings)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 9.1A | Latex, flat finish [for spray application only]. | | |
| INT 9.1B | Latex finish (over alkyd sealer). | | |
| INT 9.1E | Latex finish. [for spray application only] | | |

.19 Plaster and Gypsum Board: (gypsum wallboard, drywall, “sheet rock type material”, etc., and textured finishes)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 9.2B | High performance architectural latex finish. | | |
| INT 9.2C | Alkyd finish (over latex sealer). | | |
| INT 9.2E | Epoxy (tile-like) finish. | | |
| INT 9.2F | Epoxy-modified latex (tile-like) finish. | | |
| INT 9.2H | Fire retardant coating [clear or pigmented] (UL/ULC rated). | | |
| INT 9.2J | Water based fire retardant coating (UL/ULC rated). | | |
| INT 9.2M | Institutional low odor / low VOC finish. | | |
| INT 9.2N | Epoxy high build low gloss finish (over latex sealer). | | |
| INT 9.2P | Epoxy high build gloss finish (over latex sealer). | | |

.20 Acoustic Panels and Tiles:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| INT 9.3A | Latex, flat finish. | | |
| INT 9.3D | Institutional low odor / low VOC finish. | | |
| INT 9.3E | High performance architectural latex finish. | | |

## 2.3 INTERIOR REPAINTING AND COATING SYSTEMS

.1 Refer to Finish Schedule for products, locations and colours.

.2 General:

.1 Paint interior surfaces in accordance with the following MPI Maintenance Repainting Manual requirements. Where the specification states VOC Max, it means maximum grams per litre less water.

.3 Concrete Vertical Surfaces: (including horizontal soffits)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 3.1D | Alkyd finish. | | |
| RIN 3.1E | Epoxy finish [for smooth concrete]. | | |
| RIN 3.1F | Epoxy-modified latex finish [for smooth concrete]. | | |
| RIN 3.1H | Water repellent paintable finish. | | |
| RIN 3.1J | High performance architectural latex finish. | | |
| RIN 3.1K | Concrete stain finish. | | |
| RIN 3.1L | Institutional low odor / low VOC finish. | | |

.4 Concrete Horizontal Surfaces: (floors and stairs)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 3.2A | Latex floor enamel [gloss] [low gloss] finish. | | |
| RIN 3.2B | Alkyd floor enamel [gloss] [low gloss] finish. | | |
| RIN 3.2C | Epoxy finish. | | |
| RIN 3.2D | Pigmented polyurethane finish. | | |
| RIN 3.2E | Concrete floor sealer. | | |
| RIN 3.2F | Waterborne concrete floor sealer. | | |
| RIN 3.2G | Latex zone / traffic marking finish [for parking or game court lines]. | | |
| RIN 3.2H | Alkyd zone / traffic marking finish [for parking or game court lines]. | | |
| RIN 3.2J | Concrete stain finish. | | |
| RIN 3.2K | Clear two component polyurethane finish. | | |
| RIN 3.2A | Latex floor enamel [gloss] [low gloss] finish. | | |
| RIN 3.2B | Alkyd floor enamel [gloss] [low gloss] finish. | | |

.5 Cementitious Composition Board Surfaces:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 3.3A | Latex finish. | | |
| RIN 3.3B | High performance architectural latex finish. | | |
| RIN 3.3C | Alkyd finish. | | |
| RIN 3.3D | Epoxy-modified latex finish. | | |
| RIN 3.3E | Epoxy finish. | | |
| RIN 3.3G | Institutional low odor / low VOC finish. | | |

.6 Clay Masonry Units: (pressed and extruded brick)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 4.1A | Latex finish. | | |
| RIN 4.1D | Alkyd finish. | | |
| RIN 4.1F | Epoxy finish. | | |
| RIN 4.1G | Epoxy-modified latex finish. | | |
| RIN 4.1J | Clear water repellent paintable finish. | | |
| RIN 4.1K | Clear two component polyurethane finish. | | |
| RIN 4.1L | High performance architectural latex finish. | | |
| RIN 4.1M | Institutional low odor / low VOC finish. | | |
| RIN 4.1N | Water repellent, clear (non-paintable). | | |

.7 Concrete Masonry Units: (smooth and split face block and brick).

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 4.2A | Latex finish. | | |
| RIN 4.2B | Latex [insert texture type] aggregate coating. | | |
| RIN 4.2C | Alkyd finish. | | |
| RIN 4.2D | Epoxy finish. | | |
| RIN 4.2F | Epoxy-modified latex finish. | | |
| RIN 4.2H | Water repellent, clear, non-paintable finish [for use on surfaces previously coated with a water repellent]. | | |
| RIN 4.2J | Water repellent, clear, paintable finish. | | |

| | | | |
|---|---|---|---|
| RIN 4.2K | High performance architectural latex finish. | | |
| RIN 4.2L | Institutional low odor / low VOC finish. | | |

.8 Structural Steel and Metal Fabrications: (columns, beams, joists, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 5.1A | Quick dry enamel [gloss] [semi-gloss] finish. | | |
| RIN 5.1B | Waterborne light industrial coating. | | |
| RIN 5.1C | Waterborne dry fall finish. | | |
| RIN 5.1D | Alkyd dry fall finish. | | |
| RIN 5.1E | Alkyd finish. | | |
| RIN 5.1F | Pigmented polyurethane finish. | | |
| RIN 5.1G | Pigmented polyurethane finish (over high-build epoxy). | | |
| RIN 5.1H | Pigmented polyurethane finish (over epoxy). | | |
| RIN 5.1J | Epoxy-modified latex finish. | | |
| RIN 5.1K | Epoxy finish. | | |
| RIN 5.1N | Latex finish. | | |
| RIN 5.1P | Waterborne light industrial coating (over epoxy primer). | | |
| RIN 5.1Q | High build epoxy finish. | | |
| RIN 5.1R | High performance architectural latex finish. | | |
| RIN 5.1S | Institutional low odor / low VOC finish. | | |

.9 Galvanized Metal: (doors, frames, railings, misc. steel, pipes, overhead decking, ducts, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 5.3A | Latex finish. [do not use flat finish on doors and frames] | | |
| RIN 5.3C | Alkyd finish. [do not use flat finish on doors and frames] | | |
| RIN 5.3D | Epoxy finish. | | |
| RIN 5.3H | Pigmented polyurethane finish. | | |
| RIN 5.3J | High performance architectural latex finish. [do not use flat finish on doors / door frames] | | |

| | | | |
|---|---|---|---|
| RIN 5.3K | Institutional low odor / low VOC finish. [do not use flat finish on doors / door frames] | | |
| RIN 5.3 L | Quick dry enamel [gloss] [semi-gloss] finish | | |

.10 Aluminum: (unanodized)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 5.4A | Alkyd [insert gloss level finish. | | |
| RIN 5.4B | Epoxy finish. | | |
| RIN 5.4C | Pigmented polyurethane finish. | | |
| RIN 5.4D | Aluminum paint finish. [for exposed aluminum] | | |
| RIN 5.4F | High performance architectural latex finish. | | |
| RIN 5.4G | Institutional low odor / low VOC finish. | | |

.11 Glue Laminated Beams and Columns:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 6.1A | Latex finish (over alkyd primer). | | |
| RIN 6.1B | Alkyd finish. | | |
| RIN 6.1C | Alkyd varnish finish. | | |
| RIN 6.1D | Polyurethane varnish finish. | | |
| RIN 6.1G | Semi transparent stain finish. | | |
| RIN 6.1K | Epoxy finish. | | |
| RIN 6.1L | Alkyd varnish finish (over stain). | | |
| RIN 6.1M | Polyurethane varnish finish (over stain). | | |
| RIN 6.1N | Fire retardant coating. (UL/ULC rated) | | |
| RIN 6.1Q | High performance architectural latex finish. | | |
| RIN 6.1R | Institutional low odor / low VOC finish. | | |
| RIN 6.1S | Waterborne clear varnish finish (over stain). | | |
| RIN 6.1T | Clear moisture cured polyurethane [gloss] [flat] finish (over stain). | | |

.12 Dimension Lumber: (columns, beams, exposed joists, underside of decking, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|

| | | | |
|---|---|---|---|
| RIN 6.2B | High performance architectural latex finish. | | |
| RIN 6.2C | Alkyd finish. | | |
| RIN 6.2D | Latex finish. | | |
| RIN 6.2F | Pigmented fire retardant coating (UL/ULC rated). | | |
| RIN 6.2G | Clear fire retardant coating (UL/ULC rated). | | |
| RIN 6.2H | Polyurethane varnish [gloss] [satin] finish (over stain). | | |
| RIN 6.2L | Alkyd varnish finish. | | |
| RIN 6.2M | Polyurethane varnish [gloss] [satin] finish. | | |
| RIN 6.2N | Alkyd varnish finish (over stain). | | |
| RIN 6.2P | Institutional low odor / low VOC finish. | | |
| RIN 6.2Q | Waterborne clear varnish finish (over stain). | | |
| RIN 6.2R | Clear moisture cured polyurethane [gloss] [flat] finish (over stain). | | |
| RIN 6.2S | Semi-transparent stain finish. | | |

.13 Dressed Lumber: (including doors, door and window frames, casings, molding, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 6.3A | Latex [gloss] [semi-gloss] finish (over alkyd undercoat). | | |
| RIN 6.3B | Alkyd [gloss] [semi-gloss] finish. | | |
| RIN 6.3C | Semi-transparent stain finish [for low traffic / low contact areas only]. | | |
| RIN 6.3D | Alkyd varnish finish (over stain). | | |
| RIN 6.3E | Polyurethane varnish [gloss] [satin] finish (over stain). | | |
| RIN 6.3F | Lacquer [gloss] [satin] finish (over stain). | | |
| RIN 6.3J | Alkyd varnish finish. | | |
| RIN 6.3K | Polyurethane varnish [gloss] [satin] finish. | | |
| RIN 6.3L | Epoxy finish. | | |
| RIN 6.3Q | Waterborne clear varnish finish. | | |
| RIN 6.3R | Pigmented fire retardant finish (UL/ULC rated). | | |
| RIN 6.3S | Clear fire retardant finish (UL/ULC rated). | | |
| RIN 6.3T | High performance architectural latex finish. | | |

| | | | |
|---|---|---|---|
| RIN 6.3U | Latex [gloss] [semi-gloss] finish (over latex primer). | | |
| RIN 6.3V | Institutional low odor / low VOC finish. | | |
| RIN 6.3W | Waterborne clear varnish finish (over stain). | | |
| RIN 6.3X | Clear moisture cured polyurethane [gloss] [flat] finish. | | |
| RIN 6.3Y | Clear two component polyurethane finish. | | |
| RIN 6.3Z | Clear moisture cured polyurethane [gloss] [flat] finish (over stain). | | |

.14 Wood Paneling and Casework: (partitions, panels, shelving, millwork, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 6.4B | High performance architectural latex finish. | | |
| RIN 6.4C | Alkyd finish. | | |
| RIN 6.4D | Institutional low odor / low VOC finish. | | |
| RIN 6.4E | Semi-transparent stain finish. | | |
| RIN 6.4F | Alkyd varnish finish (over stain). | | |
| RIN 6.4G | Polyurethane varnish [gloss] [satin] finish (over stain). | | |
| RIN 6.4J | Alkyd varnish finish. | | |
| RIN 6.4K | Pigmented lacquer finish. | | |
| RIN 6.4L | Polyurethane varnish [gloss] [satin] finish. | | |
| RIN 6.4P | Waterborne clear varnish finish. | | |
| RIN 6.4R | Pigmented fire retardant coating (UL/ULC rated). | | |
| RIN 6.4S | Clear fire retardant coating (UL/ULC rated). | | |
| RIN 6.4T | Latex [gloss] [semi-gloss] finish (over latex primer). | | |
| RIN 6.4U | Waterborne clear varnish finish (over stain). | | |
| RIN 6.4V | Clear moisture cured polyurethane [gloss] [flat] finish (over stain). | | |

.15 Wood Floors and Stairs:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 6.5A | Alkyd floor enamel [gloss] [low gloss] [SRA Optional]finish. | | |

| | | | |
|---|---|---|---|
| RIN 6.5B | Polyurethane varnish gloss finish (over stain) [SRA Optional]. | | |
| RIN 6.5C | Polyurethane varnish gloss finish [SRA Optional]. | | |
| RIN 6.5D | Moisture cured polyurethane gloss finish [SRA Optional]. | | |
| RIN 6.5E | Alkyd game line marking. | | |
| RIN 6.5F | Epoxy game line marking. | | |
| RIN 6.5G | Clear two component polyurethane finish. | | |
| RIN 6.5H | Pigmented polyurethane finish. | | |
| RIN 6.5L | Clear moisture cured polyurethane gloss finish (over stain). | | |
| RIN 6.5M | Epoxy Enamel [SRA Optional]. | | |

.16 Fiberglass: (panels, trims, fabrications, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 6.7B | Alkyd finish. | | |
| RIN 6.7D | Epoxy finish. | | |
| RIN 6.7F | Epoxy-modified latex finish. | | |
| RIN 6.7H | High performance acrylic latex finish. | | |
| RIN 6.7J | Institutional low odor / low VOC finish. | | |

.17 Plastic: (lumber, panels, trims, fabrications, vinyl wall covering, PVA / PVC materials, etc.)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 6.8A | High performance architectural latex finish. | | |
| RIN 6.8B | Alkyd finish. | | |
| RIN 6.8F | Institutional low odor / low VOC finish. | | |
| RIN 6.8G | High performance architectural latex finish. [for vinyl wall coverings only] | | |
| RIN 6.8H | Latex finish. [for vinyl wall coverings only] | | |
| RIN 6.8J | Institutional low odor / low VOC finish. [for vinyl wall coverings only] | | |
| RIN 6.8K | Alkyd finish. [for vinyl wall coverings only] | | |

.18 Spray Textured Surfaces: (ceilings)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 9.1A | Latex flat finish. | | |
| RIN 9.1B | Latex finish. | | |
| RIN 9.1C | Alkyd flat finish. | | |
| RIN 9.1D | Alkyd finish. | | |

.19 Plaster and Gypsum Board: (gypsum wallboard, drywall, “sheet rock type material”, etc., and textured finishes)

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 9.2B | High performance architectural latex finish. | | |
| RIN 9.2C | Alkyd finish. | | |
| RIN 9.2D | Epox) finish. | | |
| RIN 9.2E | Epoxy-modified latex finish. | | |
| RIN 9.2G | Fire retardant coating (UL/ULC rated). | | |
| RIN 9.2H | Waterborne fire retardant coating (UL/ULC rated). | | |
| RIN 9.2J | Pigmented polyurethane coating. | | |
| RIN 9.2K | Latex finish (over alkyd primer) for plaster surfaces only. | | |
| RIN 9.2M | Institutional low odor / low VOC finish. | | |

.20 Acoustic Panels and Tiles:

| FINISHING SYSTEM | DESCRIPTION | GL | VOC MAX |
|---|---|---|---|
| RIN 9.3A | Latex flat finish. | | |
| RIN 9.3C | Alkyd flat finish. | | |
| RIN 9.3D | Institutional low odor / low VOC finish. | | |
| RIN 9.3E | High performance architectural latex finish. | | |

## PART 3 - EXECUTION

### 3.1 PREPARATION OF SURFACES

.1 Prepare surfaces in accordance with MPI Manual requirements unless indicated otherwise. Refer to the Manual for specific surface preparation requirements for each substrate material.

.2 Prepare surfaces for repainting in accordance with MPI Maintenance Repainting Manual. Refer to the Maintenance Repainting Manual for specific surface preparation requirements for each substrate material.

## 3.2 APPLICATION

.1 Do not paint unless substrates are acceptable and/or until environmental conditions (heating, ventilation, lighting and completion of other subtrade work) are acceptable for application of products.

.2 Paint surfaces requiring paint or stain finish to minimum MPI Manual finish requirements with application methods in accordance with best trade practices for type and application of materials used.

.3 Use aggregate coating or a slip resistant additive in paint for surfaces as noted (e.g. stair treads/landings, handrails) where scheduled to be painted.

.4 Continue paint finishes through behind wall mounted items.

## 3.3 FIELD QUALITY CONTROL / STANDARD OF ACCEPTANCE

.1 Ensure all surfaces, preparation and paint applications are inspected.

.2 Painted interior surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent:

.1 Brush marks, roller marks, streaks, laps, runs, sags, drips, heavy stippling, hiding or shadowing by inefficient application methods, skipped or missed areas, and foreign materials in paint coatings.

.2 Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles.

.3 Damage due to touching before paint is sufficiently dry or any other contributory cause.

.4 Damage due to application on moist surfaces or caused by inadequate protection from the weather.

.5 Damage or contamination of paint due to blown contaminants such as dust or spray paint.

.3 Painted surfaces shall be considered unacceptable if any of the following are evident final lighting source (including daylight) for interior surfaces:

.1 Visible defects are evident on vertical surfaces when viewed at normal viewing angles from a distance of not less than 1m (3 ft.).

.2 Visible defects are evident on horizontal surfaces when viewed at normal viewing angles from a distance of not less than 1m (3 ft.).

.3 Visible defects are evident on ceiling, soffit and other overhead surfaces when viewed at normal viewing angles.

.4 When the final coat on any surface exhibits a lack of uniformity of colour, sheen, texture, and hiding across full surface area.

.4 Repair rejected surfaces at no additional cost to the Owner. Small affected areas may be touched up. Repaint large affected areas or areas without sufficient dry film thickness. Remove runs and sags of paint by scraper or by sanding prior to application of paint.

## 3.4 MECHANICAL AND ELECTRICAL EQUIPMENT

.1 Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas as well as inside cupboards and cabinet work. Colour and texture to match adjacent surfaces, except as noted otherwise. Coordinate with mechanical trades applying banding and labeling after pipes have been painted.

.2 Paint pipes at Service level to match Base Building colour code.

.3 Before painting any pipes in public areas, review with Consultant.

.4 Paint gas piping gas standard yellow where visible in service spaces.

.5 Paint surfaces inside of ductwork, and elsewhere behind grilles, where visible, using primer and one coat of matte black paint.

.6 Paint both sides and edges of plywood backboards for equipment before installation.

.7 Leave equipment in original finish except for touch-up as required, and paint conduits, mounting accessories and other unfinished items.

**3.5 PAINT SCHEDULE**

.1 Perform painting in accordance with the instructions of the selected paint manufacturers and in conformance with the systems specified.

.2 Additional coats may be required to achieve acceptable colour and coverage.

**3.6 PROTECTION AND CLEAN-UP**

.1 Protect newly painted interior surfaces from elements condensation and contamination until paint coatings are completely dry. Erect barriers or screens and post signs to warn of or limit or direct traffic.

.2 Remove spilled, splashed, splattered or over sprayed paint as work progresses, remove waste materials and keep area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.

**END OF SECTION**