DIVISION 09 FINISHES

Section 09 00 00 Finishes - General

1 Refer to DC350, Part 1, Section 2, Division 9, Supplemented by the following:
- 1.1 Finishes must be selected to minimize off gassing to the air in the school.
- 1.2 All finishes must be non-toxic. This applies to furniture finishes as well as building finishes.
- 1.3 Natural organic products are preferable to manufactured petroleum based products.
- 1.4 Paints and adhesives must be specified to be low VOC and have "Ecologo" labels to meet emission and toxicity standards published by Environment Canada and CSA.
- 1.5 All finishes should be welcoming and attractive and environmentally safe with special emphasis on ease of maintenance and durability.
- 1.6 All alternatives to flooring materials specified herein are to be reviewed by an air quality consultant and approved in writing by the Minister's Representative prior to use or installation. Flooring alternatives thus approved may be subject to additional air quality testing prior to, during or after installation.

Section 09 21 16 Gypsum Board Assemblies

1 Standard Drywall
- 1.1 For corridor walls exposed to traffic and behind coat hanging areas, standard drywall is acceptable only when in areas protected by lockers or other equipment. Refer to Part 1, Section 2, Division 04, 04 22 00 Concrete Unit Masonry.
- 1.2 Areas behind cabinets, communication boards, tack boards, etc. may be standard drywall.

2 Abuse Resistant Drywall
- 2.1 In learning areas concrete block or abuse resistant drywall is required for all exposed walls.
- 2.2 Refer to Part 1, Section 2, Division 09, 09 22 16 Non-Structural Metal Framing..
- 2.3 Abuse resistant drywall shall be
  - 2.3.1 Fiberock Brand V.H.I. (Very High Impact) Abuse-Resistant Gypsum Fiber Panels as manufactured by CGC and installed as per manufacturer's recommendations.

3 Cement Board
- 3.1 For exterior walls, it is acceptable to use Cement Board providing:
  - 3.1.1 The Cement Board is not located within 3'-0" of roof surface or where snow build-up can occur.

3.1.2 The Cement Board with synthetic stucco finish shall not be used as exterior wall cladding within 12'-0" of finished grade.

4 Water resistant board
- 4.1 To CSA A82.27 standard ½" thick, 4'-0" wide x maximum practical length.
- 4.2 In all washrooms, janitor closets and wet or humid locations use water resistant board as principle sheathing material for wall area.
- 4.3 If epoxy painted concrete block is utilized as a finished wall surface in the washroom, janitor and other wet or humid locations, water resistant board is not a requirement.

5 Metal Furring and Suspension Systems
- 5.1 Metal furring runners, hangers, tie wires, inserts, anchors: to CSA A82.30-M, galvanized.
- 5.2 Resilient drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.

6 Fastenings
- 6.1 Screws
  - 6.1.1 To CSA A82.31. Self-drilling, self-tapping, case hardened, Philips head, drywall screws, with corrosion resistant finish.

7 Accessories
- 7.1 Casing beads, corner beads fill type: 0.5 mm base thickness commercial grade sheet steel with Z275 zinc finish to ASTM A525, perforated flanges; one piece length per location.
- 7.2 Acoustic Sealant: to CGSB 19-GP-21M.
- 7.3 Polyethylene: to CGSB A51.33, 6 mil.
- 7.4 Joint Compound: to CSA A82.31, asbestos free.
- 7.5 Joint Tape: 2" x 0.012" thick, perforated paper with chamfered edges.
- 7.6 Control Joints: Crimped rolled-formed zinc, with flanges for tape reinforcement, or two casing beads, set with gap for movement and backed with flexible air seal membrane.
- 7.7 Special purpose made angles and channels as required and as detailed to support radiant heating panels where applicable.

8 Partition System
- 8.1 Interior Steel Studs
  - 8.1.1 Minimum 25 ga. steel, (minimum 20 ga. in all areas where abuse resistant drywall is used) galvanized, having knurled flanges 1 1/4" wide edges double back at least 3/16", with girts as required, and with service access holes. Sizes as indicated on drawings.
  - 8.1.2 Partition Runners: as specified for studs, with flanges a minimum of 7/8" high, and

to suit width of studs.

8.1.3 Bracing Channels: 18 ga. 1 ½" x 3/4" cold rolled steel, wipe coated.

9 Insulation

9.1 Thermafibre sound attenuation batts. Minimum 3" thick.

10 Hanger Devices

10.1 Zinc coated annealed steel wire; to support a maximum weight of 310 lbs. per hanger.

Section 09 22 16 Non-Structural Metal Framing

1 Provide heavy gauge steel studs as support where Abuse Resistant Drywall is used. Gauge size to suit wall height, loading conditions, size and spacing of studs, (min. 20 gauge).

2 For Pre-cast Concrete Panels and Tilt-Up Concrete Wall Systems, where steel stud back-up walls are utilized as a back up to pre-cast or tilt-up, they shall be constructed at 16" o.c. Complete with 6 mil polyethylene vapour barrier and fibreglass batt insulation between the studs. Studs for steel stud back-up walls shall not be placed directly against the pre-cast or tilt-up concrete wall panels and shall be held away from the wall panels with a minimum 1" space.

Section 09 30 00 Tiling

1 Quarry tile, ceramic tile or porcelain tile is required in all washrooms, shower rooms, vestibules, lobbies, and all stairways except where noted elsewhere (treads and landings).

2 Main washrooms areas require ceramic tile for the lower half of the wall.

3 All shower areas require ceramic tile for the full height of the wall.

4 Staff washroom walls do not require ceramic tile. Refer to associated Room Data Sheets.

5 Refer to Part 2, Section 2, Division 09, 09 90 00, Item .2 for alternative finish of washrooms, shower areas and recycle rooms, where wall construction is of concrete block

6 Materials

6.1 Ceramic Mosaic Floor Tile

6.1.1 To CAN-75.1, Type 2, Class MR2.

6.2 Ceramic Wall Tile

6.2.1 To CAN-75.1, Type 5, Class MR4.

6.3 Ceramic Tile Base

6.3.1 finished curve, top and capped cut tile
6.3.2 100 mm high coved base to match ceramic wall tile.
6.3.3 Cut horizontal edges are unacceptable.

6.4 Quarry Tile Type 1 (Porcelain)
6.4.1 Field: to CAN2-75.1, Type 4, Class MR1, plain face cushioned edges.

6.5 Quarry Tile Type 2
6.5.1 To CAN2-75.1, Type 4, Class MR2.

6.6 Quarry Tile Base
6.6.1 finished curve, top and capped cut tile.
6.6.2 100 mm high coved base to match floor tile. Cut horizontal edges are unacceptable.

6.7 Workmanship
6.7.1 Install tile in accordance with details and specifications of the Terrazzo, Tile and Marble Association of Canada Installation Manual.
6.7.2 Clean and seal tile as recommended by product manufacturer.

7 Maintenance material, 2% of each product type used for owner use.

Section 09 51 00 Acoustical Ceilings

1 Provide acoustic tile ceilings as specified in Part 2, Section 3, Room Data Sheets.

2 Materials

2.1 Acoustical Ceiling Tile to meet the following unless otherwise required to meet applicable health regulations:
2.1.1 Type: CGSB 92.1, Type 3
2.1.2 NRC 0.50-0.60
2.1.3 Size: 24" x 48"x 5/8"
2.1.4 Fire rated as required.

2.2 Humidity Resistant Acoustical Ceiling Tile:
2.2.1 Type: CGSB 92.1, Type 3 or ASTM 1264, Type III
2.2.2 NRC 0.5-0.6
2.2.3 Size: 24" x 48"
2.2.4 Fire rated as required
2.2.5 Humidity resistance properties shall include sag resistance, mold and mildew growth resistance and low VOCs.
2.2.6 Provide for all washrooms including, but not limited to, Assistive Case Washroom, Change & Shower Rooms, Sick Room - Washroom (Administration), Staff Washrooms, Student Washrooms.

3 Maintenance material, 2% of each product type used for owner use.

Section 09 53 00 Acoustical Ceiling Suspension Assemblies

1 Reference Standards
- 1.1 Installation to ASTM C636 except where specified otherwise.

2 Design Criteria
- 2.1 Maximum deflection: 1/360th of span to ASTM C635 deflection test.

3 Materials
- 3.1 Exposed tee bar grid components: two directional 24" x 48" shop painted satin sheen white unless noted on drawings. Components die cut. Main tee with double web, rectangular bulb and 1" rolled cap on exposed face. Cross tee with rectangular bulb; web extended to form positive interlock with main tee webs; lower flange extended and offset to provide flush intersection. Fire rated where required.
- 3.2 Hanger Wire: galvanized soft annealed steel wire, 9 ga.
- 3.3 Hanger Inserts: purpose made.
- 3.4 Accessories: splices, clips, wire ties, retainers and wall mounting flush reveal, to complement suspension system components, as recommended by system manufacturer.
- 3.5 Fire-rated as required.

Section 09 64 00 Wood Flooring

1 Performance Testing
- 1.1 In addition to the requirements of Part 1 and those listed herein, all Junior, Middle and Senior High school gymnasium flooring system designers and contractors must provide proof to the Building Design Group of DTIR that a floor system under consideration as an acceptable system has been independently tested to meet or exceed all six of the requirements of the DIN 18032 Part 2 (1991 or 2001) tests, **prior to consideration as an approved system**. The Building Design Group of DTIR will only consider approval of pre-engineered athletic flooring systems after such proof is provided and includes complete system specifications and copies of current independent test results for the exact systems proposed. For Design-Build proposals, alternatives will only be considered during the tender period in the manner prescribed in the Instructions to Bidders.
- 1.2 Elementary schools gymnasium flooring system designers and contractors must provide proof to the Building Design Group of DTIR that a floor system under consideration as an acceptable system has been independently tested to meet or exceed the requirements of the DIN 18032 Part 2, 1991 or 2001 tests for Shock Absorption, Ball Rebound, Rolling Load and Friction tests, **prior to consideration as an approved system**. The Building Design Group of DTIR will only consider approval of pre-engineered athletic flooring systems after such proof is provided and includes complete system

specifications and copies of current independent test results for the exact systems proposed. For Design-Build proposals, alternatives will only be considered during the tender period in the manner prescribed in the Instructions to Bidders

1.3 Manufacturers are to provide specification information and DIN test report identification information in order to have reports sent directly to the Minister from the independent DIN testing agency for request of approval of alternate systems.

1.4 Engineering Performance

1.4.1 Only pre-engineered athletic flooring systems will be approved for use in schools.

2 Environmental Requirements

2.1 See DC350, Part 1, Section 2, Division 09, 09 64 00.

2.2 Coordinate design and construction schedule of new schools to ensure that the gymnasium flooring is installed with sufficient time to allow for the required ventilation period (a minimum of 8 weeks) prior to occupancy.

2.3 Gymnasium Floor Finishing Procedures in School

2.3.1 No painting (this includes painting of the lines) while students are present.

2.3.2 Isolate gymnasium area from remainder of the school including all openings, fixtures (including fabric acoustic panels) and HVAC supply and return diffusers/grilles. Cover with 6 ml. plastic sheets and tape joints.

2.3.3 Install negative air units with high efficiency particulate air exhaust. Units must run at all times to ensure negative pressure in the gym (including the application and curing of the floor finish and line paint).

2.3.3.1 To adequately ventilate the gym during floor finishing, a minimum of 12,000 cfm @0.25 sp. air flow is required. The fan inlet should have a plastic connection and be sealed tight around one of the outside doors to make a plenum type connection. Plastic discharge duct should be connected to the negative air units and run a minimum of 30 feet from the building and located to minimize air return potential. Ensure that all openings to the gym are sealed tight with the exception of one outside door to allow for make-up air during fan operation. The gymnasium air handling unit is to be "locked out" and remain off at all times during this process.

2.3.4 No interior exit from the work area is to be used (only an outside entrance).

2.3.5 After sanding, cleaning shall be done using proper equipment and the gymnasium will require final inspection prior to turn over to the school.

2.3.6 Gymnasium is to remain closed for 5 days after the last finish coat is applied and the gym is to remain isolated and the negative air units operating.

2.3.7 Air Tests

2.3.7.1 An air test shall be taken outside the gym (at a location to be determined by the testing agency) prior to the application of the first coat of floor finish. This will be the reference air test.

2.3.7.2 An air test shall be taken outside the gym (at the same location as the

reference test) immediately after the completion of the application of the first coat of floor finish.

2.3.7.3 An air test shall be taken outside the gym (at the same location as the reference test) immediately after the completion of the application of floor lines.

2.3.7.4 An air test shall be taken outside the gym (at the same location as the reference test) immediately after the last coat of floor finish is applied.

2.3.7.5 An air test shall be taken inside the gym (at a location to be determined by the testing agency) seven days after the last coat of floor finish is applied.

2.3.8 Information of the process for the gym floor finish shall be communicated to the staff, students and parents of the school through DTIR and DOE. i.e. Sub-Contractor □□ General Contractor □□ DTIR Representative □□ DOE □□ School Board/School Staff□□ Students.

2.3.9 No deviation from the work schedule shall be made unless the procedure is also changed and new communications are provided to that effect.

2.3.10 A person shall be appointed by the Contractor to ensure that this procedure is followed prior to commencement and during work process. A daily report shall be prepared and provided to DTIR representative for distribution to DTIR & DOE.

2.3.11 Fire extinguishers to be located in Gym while work is being carried out.

2.3.12 Employees shall be trained on produce specific (WHMIS) and proper use of PPE (personal protective equipment).

2.3.13 No open flames or source of ignition allowed in Gym area at time of application.

2.3.14 Projects which involve installation or repair of gymnasium floors during periods when the school is occupied will require conformation from all team members that these restrictions are understood and will be followed. Those team members are listed below and specification documents shall contain a form for submission to the DTIR Representative before gymnasium work begins.

Partner	**Signature**	**Date**
DTIR	_____	
Department of Education	_____	_____
School Board	_____	_____
Others	**Signature**	**Date**
Principal	_____	_____
General Contractor	_____	_____

Sub-Contractor _____ _____

3 Protection

3.1 Barricade areas where floor laying and finishing is in progress to prevent traffic over flooring.

3.2 Cover finished flooring installations with protection adequate to prevent traffic damage, and maintain and replace protection as necessary until Project Completion.

4 Prohibit smoking, use spark-proof equipment and take all other precautions to avoid fire or explosion, or both, in areas where flammable materials are being used.

5 Materials

5.1 Kiln dry flooring and ensure that at time of installation it has an average moisture content of 8%, with permitted range of 6% to 10% in individual pieces.

5.2 Gymnasium Strip flooring

5.2.1 No. 2 or better grade to CLA Grading Rules for Canadian Hardwood Strip Flooring, latest edition, minimum 50% No. 1 stock or, Grade 3 or better, Select Northern Hard Maple, MFMA Certified. 25/32" X 21/4" strip flooring

5.3 Stage Strip Flooring, leading edges 25/32" x 1 ½" T & G, maple to match gym flooring.

5.4 Fasteners:

5.4.1 Channel Anchors:

5.4.1.1 minimum 1-1/2" long concrete screws at 24" o.c., or

5.4.1.2 minimum 1 1/4" long steel powder actuated or pneumatic anchors to achieve 900lbs pull-out strength, spaced not less than 22 ½" staggered anchoring.

5.4.2 Subfloor anchors: 1" to 1-3/4" subfloor nails or staples

5.4.3 Flooring Fasteners: 2" barbed cleats or coated staples

5.5 Membrane: 6 mil polyethylene, ultra plus.

5.6 Resilient Pads :

5.6.1 Polyurethane pads,

OR

5.6.2 Hemispherical or double trapezoidial profiled EPDM Pads :

5.6.3 Ensure a minimum of 1 pad / square foot

5.6.4 hot-melt glued to underside of plywood panels or sleepers or encased in steel channels between channel and sleepers allowing room for sleeper movement for resilient function.

5.7 Subfloor:

5.7.1 Factory assembly 2 layers 15/32" CDX grade APA plywood,

OR

5.7.2 Factory assembly 1 layer 23/32" CDX grade APA plywood, with minimum 1" plywood sleepers

5.8 Continuous Steel Channels
5.8.1 16 gauge zinc treated steel, 8' long
5.8.2 "Hat" shaped or "C" shaped
5.9 Standard of acceptance
5.9.1 For elementary and middle schools gymnasiums:
5.9.1.1 Robbins "Bio-Cushion" or
5.9.1.2 Connor "Neo-Shok" systems.
5.9.2 For high schools:
5.9.2.1 Robbins "Bio-Channel" or
5.9.2.2 Connors "Rezill Channel" systems.
5.10 Heavy aluminum thresholds at all door openings and understage storage openings.

5.11 Rubber angle base
5.11.1 Moulded 3"x 4" vent base heavy duty rubber complete with premoulded corners.
5.12 Game Lines
5.12.1 Enamel paint to colours as indicated on drawings, type compatible with floor finish.

5.13 Finish: oil-modified Urethane floor finish.

6 Ensure that:
6.1 Environmental conditions have been provided as requested and specified.
6.2 Work specified in other Sections which in execution could interfere with or damage flooring installation has been completed.
6.3 Quality Assurance:
6.3.1 To manufacturers written requirements.
6.3.2 Ensure that no contaminants are present on subfloor that would affect bond of adhesive.
6.3.3 Defective Work resulting from installation of flooring on unsatisfactory surfaces or because of adverse environmental conditions will be considered the responsibility of those performing the Work of this Section.

7 Preparation:
7.1 Clean subfloors to remove dirt, oil, grease and other foreign materials, and vacuum clean.

8 Installation:
8.1 Gymnasium Floor:
8.1.1 Apply one layer vapour barrier membrane, lapping edges 4" and up walls 3". Tape all joints with product approved by Gymnasium flooring manufacturer.
8.1.2 Install plywood subfloor in accordance with manufacturers printed instructions.
8.1.3 Install base in accordance with manufacturer's instructions.
8.1.4 Install floor sockets and equipment anchors supplied by others.

8.2 Sanding and Finishing
- 8.2.1 Floors shall be sanded after all other trades are finished.
- 8.2.2 All flooring shall be sanded to smooth, even, and uniform surface with a minimum of three cuts using coarse, medium and fine sandpapers.
- 8.2.3 Final sanding of pattern floors should be performed with a screen and disc sander. This final sanding should provide a smooth and even surface, free from scratches.
- 8.2.4 After sanding, contractor shall thoroughly vacuum floor with heavy duty commercial type vacuum to remove sanding dust from entire surface and request an inspection by Consultant before any finishing work shall start.
- 8.2.5 Apply two (2) coats of approved seal and two (2) coats of approved finish per manufacturer's instructions.
  - 8.2.5.1 Ensure that first two coats of finish is applied immediately after sanding to avoid raised grain.
- 8.2.6 Buff and clean floor between coats.
- 8.2.7 Game lines: apply game lines between seal and first coat of finish.

8.3 Game Lines
- 8.3.1 Apply game lines to gymnasium floor to colours and areas as indicated on drawings.
- 8.3.2 School crest school steering committee to provide art work including colours, lettering and design to contractor. Contractor to engage Graphic Designer to generate an accurate, electronic version of same to facilitate implementation on floor. Contractor is responsible to do this.

9 Adjustment and Cleaning
- 9.1 Refinish damaged or defective Work so that no variation in surface appearance is discernible.
- 9.2 At completion of Work, and after finish has cured for at least 72 hours, clean flooring.

Section 09 65 13 Resilient Base and Accessories

1 Refer to DC-350, PART 1, Section 2, Division 09, 09 65 13.

Section 09 65 19 Resilient Tile Flooring

1 Vinyl composite tile in 12" x 12" squares shall be used where indicated in PART 2, Section 3, Room Data Sheets.

2 Materials
- 2.1 Vinyl composition tile: 1/8" thick, 12" x 12" size.
- 2.2 Resilient base: top set coved rubber, minimum 4'-0" length and 4" high, including premoulded end stops and external corners.

2.3 Resilient stair riser: top set vinyl 1/8" thick, full riser height, solid pattern.
2.4 Stair Treads for Service Stairs: resilient stair treads with integral nosing. Top set vinyl 1/8"
thick full tread width and length.

3 Mock -Up
3.1 Prior to installation ensure that a mock-up room is prepared, for approval by the DTIR Project Manager.

4 Tile Application
4.1 Apply adhesive uniformly using recommended trowel in accordance with flooring manufacturer's instructions. Do not spread more adhesive than can be covered by flooring before initial set takes place.
4.2 Lay flooring with joints parallel to building lines to produce symmetrical tile pattern. Border tiles minimum half tile width.
4.3 Install flooring to square grid pattern with all joints aligned with pattern grain alternating.
4.4 Cut tile and fit neatly around fixed objects.
4.5 Terminate flooring at center line of door in openings where adjacent floor finish or colour is dissimilar.

5 Stair Application
5.1 Install stair risers and nosings one piece for full width of stair. Adhere over entire surface and fit accurately. Bring tread level up with filler to ensure resilient tile tread flush with nosing, where used on service stairs.

6 Base Application
6.1 Lay out base to keep number of joints at minimum.
6.2 Set base in full bed of adhesive, tightly against wall and floor surfaces.
6.3 Install straight and level to variation of 1:1000.
6.4 Scribe and fit to door frames and other obstructions. Use premoulded end pieces at flush door frames.
6.5 Cope internal corners. Use premoulded corner units for right angle external corners. Use formed straight base material for external corners of other angles.

7 Accessories
7.1 Install reducer strips at terminations of resilient tile flooring where edges are exposed to view.
7.2 At door openings, install reducer strips and transition strips under doors.
7.3 Secure strips and adapters to subfloor with contact bond adhesive to ensure complete bond.

8 Maintenance material: supply 2% of each product type used to owner.

9 Ensure that sealing and waxing of tile flooring is to manufacturer's recommended finish procedures.

Section 09 67 00 Fluid-Applied Flooring

1 Seamless Composite Floor System
- 1.1 Quality Assurance:
  - 1.1.1 General:
    - 1.1.1.1 Materials provided shall incorporate the manufacturer's latest improvements in materials available at time of manufacture.
    - 1.1.1.2 Manufacturer of resilient flooring shall be a firm specializing in manufacturing products specified herein.
    - 1.1.1.3 The complete installation of the flooring system shall be carried out by an experienced and certified flooring contractor approved by the manufacturer and the work shall be performed in accordance with the most recent installation instructions of the manufacturer.

- 1.2 Site Conditions:
  - 1.2.1 Subfloors:
    - 1.2.1.1 Shall be adequately waterproofed beneath the slab and around the perimeter using a suitable membrane.
    - 1.2.1.2 Shall be true and level being very flat in accordance with C.S.A. classification A23.1 subsection 22.1.2. Install subfloor to ensure level of finish is within 3 mm of established elevations in any 6 metre area, and shall when measured with a 3 metre straight edge the gap at any point shall not exceed 3 mm; ensure that finish levels do not vary by more than 1 mm per 300 mm.
    - 1.2.1.3 Subfloors shall have a steel troweled finish, and be fully cured; maximum moisture content of 3% measured by the volume percentage method.

- 1.3 Products
  - 1.3.1 General:
    - 1.3.1.1 All urethane materials shall be free of any heavy metals such as lead or mercury which could seriously affect human health.
    - 1.3.1.2 All urethane materials shall be manufactured by the same manufacturer and designed to chemically react with the previous layer to enhance bonding.
    - 1.3.1.3 Shall have a minimum overall thickness of 11 mm.
    - 1.3.1.4 Flooring system to be DIN tested and rated.
      - 1.3.1.4.1 Subject to compliance with all requirements listed herein, approved synthetic flooring systems.

1.3.1.4.2 All applications shall be
1.3.1.4.2.1 “Elastiplus” as manufactured by Connor
and
1.3.1.4.2.2 “Pulastic 2000" as manufactured by Robbins.

1.3.2 Acceptable Materials:
1.3.2.1 Seamless urethane composition flooring system to meet the following standards:
1.3.2.1.1 Surface hardness according to DIN 53505
1.3.2.1.2 Shore A 76 deg.
1.3.2.1.3 Compressive modulus by D.S.F. 8 Kgf/cm2/mm
1.3.2.1.4 Rebound resilience DIN 53512 29%
1.3.2.1.5 Ball Rebound 1.29/2.00 m
1.3.2.1.6 Wear Resistence Taber h18: 1.3.2.1.6.1 500 cycles 1.7% vol. 1.3.2.1.6.2 1000 cycles 1.9%
1.3.2.1.7 Compression set DIN 53517 1.9%
1.3.2.1.8 Impact Resistance by OGI 2 Kgm/cm2
1.3.2.1.9 Rolling Load Resistance no damage (DIN 18032 100 kg)
1.3.2.1.10 Tensile Strength DIN 53571 6.5N/m2
1.3.2.1.11 Elongation at Break DIN 53571 140%
1.3.2.1.12 Water Absorption Top Layer 2%
1.3.2.1.13 Water Absorption Under Layer 20.8%
1.3.2.1.14 Heat Resistance 0.089 kw/m2

1.4 Installation Procedure
1.4.1 Application:
1.4.1.1 Resilient underlay shall be bonded to the subfloor surface using approved adhesive applied at a minimum rate of .625 kg/sq.m., cut neatly around any fixed objects; terminate flooring at center line of openings where adjacent floor finish or colour is dissimilar.
1.4.1.2 Apply sealer at a minimum rate of .5 kg/Sq. M. to the joints and over the entire surface of the resilient underlay.
1.4.1.3 Layers shall be applied at a minimum rate of 2.8 kg/sq M and to a total thickness of 2 mm, being applied in two applications so that any irregularities that occur in the first application can be corrected in the second application.
1.4.1.4 Apply mat finish at a minimum rate of .15 kg/Sq. M. and allow to cure prior to application of the games lines.
1.4.1.5 Games lines shall be laid out and painted in accordance with the approved standards.

1.4.2 Accessories:
1.4.2.1 Thresholds
1.4.2.1.1 Install thresholds or reducer strips to cover spaces at

doorways or changes in floor finishes.

1.4.2.2 Resilient Base

1.4.2.2.1 Install to walls using adhesive, providing a neat application without deformation.

1.4.3 Protection:

1.4.3.1 Allow a minimum of 72 hours after completion of the floor prior to allowing any access to the area.

1.4.3.2 Should access be required after this period, ensure the General Contractor is responsible to protect the floor surface using cardboard or non-fibred kraft paper with joints taped as per manufacturer's specifications.

Section 09 68 00 Carpeting

1. Do not use Carpet as a floor finish in any part of the school including administration areas and libraries.

Section 09 72 16 Vinyl-Coated Fabric Wall Covering

1. Do not use Vinyl wall fabrics as the adhesive provides an area that will support the growth of mould under certain environmental conditions.

Section 09 80 00 Acoustical Treatment

1 Provide for control of sound in music and drama rooms, gymnasiums, stages and cafeterias.

2 Provide for an acoustical analysis to be conducted by a qualified sound quality professional which identifies effective design solutions and construction efficiency.

3 Sound Absorbing Panels:

3.1 Provide 2" thick panels to gymnasium, cafeteria, with top and bottom impact supports; and 3" thick panels to music room walls, etc. where required. 7 pound per cubic foot fibreglass with standard fabric covering, with flame spread rating of 25 or less. Bullnosed vertical edges.

3.2 Sound absorbing panels in gymnasium to be impact resistant, with scrim facing between fabric and insulation board.

4 Maintenance material, 2% of each product type used for owner use.

Section 09 90 00 Painting and Coating

1 See DC350, PART 1, Section 2, Division 09, 09 90 00, unless otherwise specified.

2 In lieu of ceramic tile finish specified for washroom, shower areas and recycle rooms (Refer to PART 1, Section 2, Division 09, 09 30 00), and where wall construction is of concrete block, epoxy paint is an acceptable alternate finish.

3 The best practices specified or recommended in CGSB 85.100 shall govern for materials, methods and procedures.

4 Environmental Requirements
- 4.1 Refer to DC350, PART 1, Section 2, Division 09, 09 00 00 Finishes - General and 09 90 00 Painting and Coating.

5 Product Delivery, Storage And Handling
- 5.1 Deliver to site each container sealed and labeled with manufacturer's name, catalogue number or brand name, colour, formulation type, reducing instructions, and reference standard specification number if applicable.
- 5.2 Store only acceptable project materials at site, and in an area specifically set aside for purpose that is locked, ventilated, maintained at a temperature of over 4^0C and protected from direct rays of sun. Ensure that health and fire regulations are compiled with in storage area.

6 Products
- 6.1 All paint products are to be "Eco-Logo" approved products. Supply appropriate certificate from manufacturer.
- 6.2 Location and Paint:
  - 6.2.1 Gymnasium Hardwood Floors:
    - 6.2.1.1 Apply first coat modified urethane thinned 25%.
    - 6.2.1.2 Apply 3 coats modified urethane over gym Court line markings. Apply 3 coats over finish carpentry hardwood.
    - 6.2.1.3 Gym Court Lines: latex - 2 coats.
  - 6.2.2 Typical Classroom and Corridor Concrete Block Walls:
    - 6.2.2.1 100% Acrylic satin Industrial enamel; 2 colour coats.
  - 6.2.3 Typical Offices and Gypsum Board Walls:
    - 6.2.3.1 Hi Build Latex primer sealer; 1 coat, applied at 80-90 sq. ft. per gallon.
    - 6.2.3.2 Latex Satin or Semi gloss, 2 colour coats. Applied 3 mils dry.
  - 6.2.4 Gymnasium Concrete Block Walls:
    - 6.2.4.1 Heavy duty Epoxy Block Filler; 1 coat.
    - 6.2.4.2 Water based epoxy; 2 coats colour. Note that there is to be a variance in colour between coats.
  - 6.2.5 Kitchen, Cafeteria, Washrooms and Lockers, Concrete Block:

6.2.5.1 Epoxy Block Filler: 1 coat.
6.2.5.2 Water based epoxy; 2 coats colour applied at 2.5 mils per coat.
6.2.6 Exposed Deck and Structure: Sprayed Dry Fog alkyd semi-gloss colour coat: 1 coat.
6.2.7 Metal Handrails: (interior)
6.2.7.1 1 coat primer.
6.2.7.2 Scrubbable gloss latex; 2 colour coats.
6.2.8 Steel Doors & Frames
6.2.8.1 1 coat primer.
6.2.8.2 Scrubbable satin latex; 2 colour coats.
6.2.9 Wood Base (Typical):
6.2.9.1 1 coat latex primer.
6.2.9.2 Latex semi-gloss; 2 colour coats. Applied 3 mils dry.
6.2.10 Metal Columns (Exterior):
6.2.10.1 1 coat primer epoxy.
6.2.10.2 Water based epoxy, 2 coats colour.
6.2.11 Floors (Exposed): 2 coats colour on exposed concrete.
6.2.12 Maintenance materials. See DC350 Part 1, Section 2, Division 09, Item 09 90 00 .8

7 Preparation Of Surfaces
7.1 General
7.1.1 Vacuum clean interior areas immediately before finishing work commences.
7.1.2 Remove from surfaces: grease, oil, dirt, dust, ridges, and other soil and materials that would adversely affect the adhesion or appearance of finish coatings.
7.1.3 Rust on surfaces primed under work of other Sections shall be removed and the areas reprimed under the Work of these Sections.
7.1.4 Finish, patch and smooth surfaces to remove cracks, holes, ridges, and similar blemishes.
7.1.5 Touch-up damaged prime coats on shop primed metals with same priming material. Feather out edges of shop coat and smooth repair coat into shop coat surfaces.
7.1.6 Scrub mildewed surfaces with a solution of tri-sodium phosphate, bleach with a solution of one part sodium hypochlorite (Javex) to three parts water, and rinse with clear water.
7.1.7 Cover or mask surface adjacent to those receiving finish to protect work of others from damage and soil.

7.2 Gypsum Board:
7.2.1 Fill minor holes and depressions, caused by accidental damage, with drywall joint compound, and sand smooth when it is set, taking care not to raise nap of paper cover.

8 Application

8.1 Sand and dust between each coat to remove defects.

8.2 Apply each coat only after preceding coat is dry and hard or as otherwise directed by material manufacturer.

END