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**PLASTIC LAMINATE FINISHING FOR INTERIOR ARCHITECTURAL WOODWORK**

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**PART 1      GENERAL**

**1.1 RELATED REQUIREMENTS**

- .1 Section 06 20 00 - Finish Carpentry: Plastic laminate finish for paneling.
- .2 Section 07 92 00 - Joint Sealants

**1.2 REFERENCE STANDARDS**

- .1 American National Standards Institute (ANSI):
  - .1 ANSI 208.1-09, Particleboard
  - .2 ANSI A208.2-09, Medium Density Fiberboard (MDF) for Interior Applications
- .2 Architectural Woodwork Manufacturers Association of Canada (AWMAC):
  - .1 North American Architectural Woodwork Standards (NAAWS), 4<sup>th</sup> edition, 2021
- .3 ASTM International (ASTM):
  - .1 ASTM E 1333-14, Standard Test Method for Determining Formaldehyde Concentrations in Air and Emission Rates From Wood Products Using a Large Chamber
- .4 Canadian General Standards Board (CGSB):
  - .1 CAN/CGSB-71.19-M88, Adhesive, Contact, Sprayable
  - .2 CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable
- .5 CSA Group (CSA):
  - .1 CSA O112-M Series 1977 (R2006) Standards for Wood Adhesives
  - .2 CSA O121-08, Douglas Fir Plywood
  - .3 CSA O151-09, Canadian Softwood Plywood
  - .4 CSA O153-M1980(R2008), Poplar Plywood
  - .5 CAN/CSA-Z809-[08], Sustainable Forest Management
- .6 Forest Stewardship Council (FSC):
  - .1 FSC-STD-01-001-2004, FSC Principle and Criteria for Forest Stewardship
- .7 Green Seal Environmental Standards (GS):

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- .1 GS-36-13, Commercial Adhesives
- .8 Health Canada/Workplace Hazardous Materials Information System (WHMIS):
  - .1 Safety Data Sheets (SDS)
- .9 National Electrical Manufacturers Association (NEMA):
  - .1 ANSI/NEMA LD-3-05, High Pressure Decorative Laminates (HPDL)
- .10 Scientific Equipment and Furniture Association (SEFA):
  - .1 SEFA 8-99, Laboratory Furniture
- .11 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards:
  - .1 SCAQMD Rule 1113-A2011, Architectural Coatings
  - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications
- .12 Sustainable Forestry Initiative (SFI):
  - .1 SFI-2015-2019 Standard
- 1.3 ACTION AND INFORMATIONAL SUBMITTALS**
- .1 Submit in accordance with Section 01 33 00 - Submittals.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for [laminate, adhesive, and core materials] and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit WHMIS SDS. Indicate VOC's for adhesives in g/L.
- .3 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.
  - .3 Submit duplicate samples of joints, edging, cutouts and postformed profiles.
- .4 Shop Drawings
  - .1 Prepare and submit shop drawings in accordance with AWMAC NAAWS and as follows.

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- .2 Indicate AWMAC NAAWS quality grade where different from predominant grade specified.
- .3 Include color schedule of all plastic laminate work, including all countertop, exposed, and semi-exposed cabinet finishes, finish material manufacturer, pattern, and color.
- .5 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

**1.4 SUSTAINABLE DESIGN SUBMITTALS**

- .1 Wood Certification: submit manufacturer's Chain-of-Custody Certificate number for CAN/CSA-Z809 or FSC or SFI certified wood.
- .2 Submit ASTM E1333 test report for formaldehyde emissions from composite wood products showing compliance with specified limits.
- .3 Submit product data indicating compliance with other specified sustainable design characteristics.

**1.5 CLOSEOUT SUBMITTALS**

- .1 Provide maintenance data for laminate work for incorporation into manual specified in Section 01 78 00 - Closeout Submittals.

**1.6 QUALITY ASSURANCE**

- .1 Perform Work of this Section by plastic laminate fabricator with minimum 5 years of current experience and having completed minimum one project in the past 5 years with value within 20% of the cost of the work of this Section.
- .2 Independent inspection/testing agency may be engaged by Owner for purpose of inspecting and/or testing Work of this Section.
  - .1 Cost of inspection and testing services will be borne by Owner.
  - .2 Costs of inspection and testing services will be paid in accordance with Section 01 21 00 - Allowances.
- .3 Mock-ups:
  - .1 Construct mock-ups in accordance with Section 01 45 00 - Quality Control.
  - .2 Prepare one typical plastic laminate finish installation where directed by Consultant.
  - .3 Allow 24 hours for inspection of mock-up by Consultant before proceeding with Work.

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- .4 When accepted, mock-up will demonstrate minimum standard for Work.
- .5 Do not proceed with work before receipt of written acceptance of mock-up by Consultant.
- .6 Accepted mock-up may [not] remain as part of finished work.

**1.7 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Storage and Handling Requirements:
  - .1 Maintain indoor temperature and humidity within range recommended by the AWMAC Quality Standards for location of the project.
  - .2 Replace defective or damaged materials with new.

**PART 2      PRODUCTS**

**2.1 SUSTAINABILITY CHARACTERISTICS**

- .1 Lumber, plywood and composite wood products to be CAN/CSA-Z809 or FSC or SFI certified
- .2 Composite wood products: formaldehyde emissions within the following limits when tested in accordance with ASTM E1333
  - .1 Hardwood plywood with veneer core (HWPW-VC): 0.05 ppm.
  - .2 Hardwood plywood with composite core (HWPW-CC): 0.05 ppm.
  - .3 Particleboard (PB): 0.09 ppm.
  - .4 Medium density fibreboard (MDF): 0.11 ppm.
  - .5 Thin (less than 8 mm) medium density fibreboard (tMDF): 0.13 ppm.
- .3 Fibreboard must contain less than 10% roundwood by weight, using weighted average over three month period at manufacturing locations.
- .4 Adhesives: VOC limit 30 g/L maximum to SCAQMD Rule 1168
- .5 Sealant: in accordance with Section 07 90 00 - Joint Sealants.

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**2.2 QUALITY GRADE**

- .1 Provide all materials and perform all fabrication in accordance with AWMAC NAAWS Custom Grade except where specified otherwise, excepting the following:
  - .1 Economy Grade: mechanical rooms and utility areas, storage areas, janitor's closets.
  - .2 Premium Grade: kitchen.
- .2 In case of conflict between Contract Documents and AWMAC NAAWS grade requirements, Contract Documents govern.

**2.3 LAMINATED PLASTIC MATERIALS**

- .1 Laminated plastic for flatwork: to NEMA LD3
  - .1 Type: general purpose.
  - .2 Grade: HGS
  - .3 Thickness: 1.2 mm thick.
  - .4 Colour: multilayered.
  - .5 Pattern: solid
  - .6 Finish: satin
- .2 Laminated plastic for postforming work: to NEMA LD3
  - .1 Type: postforming.
  - .2 Grade: HGP
  - .3 Thickness: 0.76 mm thick.
  - .4 Colour: multilayered.
  - .5 Pattern: solid
  - .6 Finish: satin
- .3 Laminated plastic fire retardant: to NEMA LD3
  - .1 Type: flame retardant.
  - .2 Grade: SGF.

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- .3 Thickness: 0.76mm thick.
  - .4 Colour: multilayered.
  - .5 Pattern: solid
  - .6 Finish: satin
- .4 Solid plastic laminate: to NEMA LD3 and SEFA 8, decorative, homogeneous, solid core phenolic composite panels resistant to solvents, general reagents and cleaning agents, finished 1-side only, backs sanded, extra wear resistant.
- .1 Type: postforming (PF)
  - .2 Thickness: 2.0 mm.
  - .3 Colour: multilayered.
  - .4 Pattern: solid
  - .5 Finish: [satin
- .5 Solid self-supporting plastic laminate-multi-layered and coloured: to NEMA LD3 and SEFA 8, decorative, homogeneous, solid core phenolic composite panels resistant to solvents, general reagents and cleaning agents, self-supporting, finished 1-side only, backs sanded, extra wear resistant.
- .1 Type: self-supporting (SS)
  - .2 Thickness: 6.4mm.
  - .3 Colour: solid white.
  - .4 Finish: satin
- .6 Solid plastic laminate: laboratory grade: to NEMA LD3 and SEFA 8, decorative, homogeneous, solid core phenolic composite panels resistant to solvents, general reagents and cleaning agents
- .1 Type: self-supporting (SS).
  - .2 Thickness: 1.0mm.
  - .3 Colour: multilayered.
  - .4 Pattern: solid
  - .5 Finish: satin

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- .7 Solid grade plastic laminate: acid resistant: to NEMA LD3 and SEFA 8, decorative, homogeneous, solid core phenolic composite panels resistant to acid
  - .1 Type: self-supporting (SS).
  - .2 Thickness: 3.2mm.
  - .3 Colour: integral colour throughout, colour black.
  - .4 Finish: matt
- .8 Laminated plastic high wear: to NEMA LD3
  - .1 Type: high wear.
  - .2 Grade: HGH
  - .3 Size: 0.7mm thick.
  - .4 Colour: multilayered
  - .5 Pattern: solid
  - .6 Finish: satin
- .9 Laminated plastic specific purpose: to NEMA LD3
  - .1 Type: specific purpose.
  - .2 Grade: HSH
  - .3 Thickness: 0.7mm thick.
  - .4 Colour: multilayered
  - .5 Pattern: solid
  - .6 Finish: satin
- .10 Laminated plastic for backing sheet: to NEMA LD3
  - .1 Type: backer.
  - .2 Grade: BKH
  - .3 Thickness: same thickness as face laminate.
  - .4 Colour: same colour as face laminate.
- .11 Laminated plastic for liner: to NEMA LD3

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- .1 Type: cabinet liner.
- .2 Grade: CLS.
- .3 Thickness: 0.2mm thick
- .4 Colour: white.

**2.4 CORE MATERIALS**

- .1 Interior mat-formed wood particleboard: to ANSI/NPA A208.1, industrial grade M-2 or M-3, medium density (640-800 kg/m<sup>3</sup>), thickness 19 mm unless indicated otherwise.
  - .1 Use moisture resistant grade 2-M-2 or 2-M-3 for countertops and splash-backs to receive plumbing fixtures.
- .2 MDF (medium density fibreboard) core: to ANSI A208.2, density 769 kg/m<sup>3</sup>, Grade Standard, 19 mm thick unless indicated otherwise
  - .1 Use moisture resistant MR grade for countertops and splash-backs to receive plumbing fixtures.
- .3 Douglas fir plywood (DFP): to CSA O121, standard construction
- .4 Hardwood plywood: to ANSI/HPVA HP-1.
- .5 Canadian softwood plywood (CSP): to CSA O151, standard construction
- .6 Poplar plywood (PP): to CSA O153, standard construction

**2.5 ADHESIVES, SEALERS AND ACCESSORIES**

- .1 Laminated plastic adhesive: contact adhesive to CAN/CGSB-71.20
  - .1 VOC limit 80 g/L 5% by weight maximum to SCAQMD Rule 1168.
- .2 Sealer: water resistant sealer or glue acceptable to laminate manufacturer.
  - .1 VOC limit: 200 g/L maximum to SCAQMD Rule 1113.
  - .2 Chemical restrictions to SCAQMD Rule 1113
- .3 Sealants: Wood Glue (Type 2). Fill miter gaps with seam fil.
- .4 Draw bolts and splines: as recommended by fabricator.
- .5 Edge finishing:
  - .1 HPDL to match face.

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- .2 Matching melamine and polyester overlay edge strip with thermoplastic adhesive.
- .3 PVC: solid colour to match face, 1 mm thick.
- .4 Edges dadoed or saw kerfed to take plastic "T" moulding in width and colour to match face.

**2.6 FABRICATION**

- .1 Fabricate plastic laminate finished items in accordance with NEMA LD3, Annex A and specified AWMAC NAAWS quality grade requirements
- .2 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.
- .3 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .4 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 2400 mm. Keep joints 600 mm from sink cutouts.
- .5 Form shaped profiles and bends as indicated, using postforming grade laminate to laminate manufacturer's instructions.
- .6 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .7 Apply laminated plastic liner sheet where indicated.
- .8 Edge treatment:
  - .1 For HPDL edge treatment use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
  - .2 Apply melamine and polyester overlay edge strip in accordance with manufacturer's instructions.
  - .3 Apply plastic edge mouldings in accordance with manufacturer's instructions.

**PART 3      EXECUTION**

**3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for laminate, adhesive, and core materials installation in accordance with manufacturer's written instructions.

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- .1 Visually inspect substrate in presence of Consultant.
- .2 Inform Consultant of unacceptable conditions immediately upon discovery.
- .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Consultant.

**3.2 INSTALLATION**

- .1 Install laminated plastic work in accordance with AWMAC NAAWS Custom Grade, except as follows:
  - .1 Economy Grade: mechanical rooms and utility areas
- .2 In case of conflict between Contract Documents and AWMAC AWS grade requirements, Contract Documents govern.
- .3 Install work plumb, true and square, neatly scribed to adjoining surfaces.
- .4 Make allowances around perimeter where fixed objects pass through or project into laminated plastic work to permit normal movement without restriction.
- .5 Use draw bolts and splines in counter top joints. Maximum spacing 450 mm on centre, 75 mm from edge. Make flush hairline joints.
- .6 Provide cutouts for inserts, grilles, appliances, outlet boxes and other penetrations. Round internal corners, chamfer edges and seal exposed core.
- .7 At junction of laminated plastic counter back splash and adjacent wall finish, apply small bead of sealant in accordance with Section 07 90 00 - Joint Sealants.

**3.3 SITE APPLIED PLASTIC LAMINATE**

- .1 Site apply laminated plastic to units as indicated.
- .2 Adhere laminated plastic over entire surface.
- .3 Make corners with hairline joints.
- .4 Use full sized laminate sheets.
- .5 Make joints only where approved by Consultant.
- .6 Slightly bevel arises.
- .7 Offset joints in plastic laminate facing from joints in core.

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**3.4 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
  - .1 Clean to NEMA LD3, Annex B
  - .2 Remove traces of primer, caulking, epoxy and filler materials and clean doors and frames.

**3.5 PROTECTION**

- .1 Cover finished laminated plastic veneered surfaces with heavy kraft paper or put in cartons during shipment.
- .2 Protect installed laminated surfaces in accordance with manufacturer's written recommendations.
  - .1 Remove protection only immediately before final inspection.

**END OF SECTION**