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ABET Corporation
(Abet Laminati)

5195 Timberlea Blvd
Mississauga ON
L4W 2S3
Tel: 1-800-223-2238
<https://abetlaminati.com>

ABET LAMINATI Spec Note: This master specification is written to include SPEC NOTES noted as “ABET LAMINATI Spec Note” in order to assist designers in their decision-making process. SPEC NOTES precede the text to which they apply. This section should serve as a guideline only and should be edited by a knowledgeable person to meet the requirements of each specific Project.

Text indicated in bold and by square brackets is optional. Make appropriate decisions and delete the optional text as well as the brackets in the final copy of the specification. Delete or hide the SPEC NOTES in the final version of the document.

This specification section is written to follow the recommendations of the Construction Specifications Institute/Construction Specifications Canada (CSI/CSC) such as MasterFormat™, SectionFormat™, and PageFormat™. It is also written with metric and imperial units of measurement.

ABET LAMINATI manufactures and sells solid phenolic panel materials. ABET LAMINATI does not practice architecture or engineering. Therefore, the design responsibility remains with the architect, engineer, or consultant. We hope the information given here will be of some assistance. It is based upon data considered to be true and accurate and is offered solely for the user’s consideration, investigation and verification. Nothing contained herein is representative of a warranty or guarantee for which ABET LAMINATI can be held legally responsible. ABET LAMINATI does not assume any responsibility for any misinterpretation or assumptions the reader may formulate.

PART 1 - GENERAL

1.1 SUMMARY

1. Section Includes: Provide labour, materials, products, equipment and services to complete the Solid Phenolic Panels work specified herein. This includes, but is not necessarily limited, to:
 1. Fabricated exterior rear-ventilated solid phenolic panel systems for **[walls] [and] [soffits]**.
 2. Water-resistive barriers.

3. Auxiliary materials required for a complete installation.
2. Related Requirements: Specifications throughout all Divisions of the Project shall be read as a whole, and may be directly applicable to this Section.

ABET LAMINATI Spec Note: The following list of sections is provided as a sample only. Edit to meet the requirements of the project.

1. Related requirements provided below are for convenience purposes only.
 1. Section 07 21 00, Thermal Insulation: for provision of insulation.
 2. Section 07 27 00, Air Barriers: for provision of air barriers.
 3. Section 07 61 00, Sheet Metal Flashing and Trims: for provision of miscellaneous flashings and accessories.
 4. Section 07 92 00, Joint Sealants: for provision of joint sealants.

1.2 REFERENCES

1. The latest published edition of a reference shall be applicable to this Project unless identified by a specific edition date.
2. All reference amendments adopted prior to the Bid Closing date of this Project shall be applicable to this Project.
3. All materials, installation and workmanship shall comply with all applicable requirements and standards.

ABET LAMINATI Spec Note: Edit the following paragraphs to fit this project's requirements. Once edits are complete, delete any standards that are not mentioned in this Section.

1. American Architectural Manufacturers Association
 1. AAMA 501.2-15: Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls and Sloped Glazing Systems
2. American Society for Testing and Materials (ASTM)
 1. ASTM A653 / A653M-20: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 2. ASTM B317/B317M-07(2015): Standard Specification for Aluminum-Alloy Extruded Bar, Rod, Tube, Pipe, Structural Profiles, and Profiles for Electrical Purposes (Bus Conductor)
 3. ASTM C645-18: Standard Specification for Nonstructural Steel Framing Members
 4. ASTM E2556/E2556M-10(2016) Standard Specification for Vapor Permeable Flexible Sheet Water-Resistive Barriers Intended for Mechanical Attachment
3. British European Standards

1. BS EN 438-2: 2016: High-pressure decorative laminates (HPL). Sheets based on thermosetting resins (usually called laminates) - Determination of properties
2. BS EN 438-6: 2016: High-pressure decorative laminates (HPL). Sheets based on thermosetting resins (usually called laminates)
4. International Organization for Standardization
 1. ISO 178:2019: Plastics — Determination of flexural properties
 2. ISO 9001:2015, Quality management systems
 3. ISO 14001:2015, Environmental management systems
 4. ISO 14025:2006, Environmental labels and declarations — Type III environmental declarations — Principles and procedures
5. Canada Green Building Council (CaGBC)
 1. LEED Canada-Building Version 4.0, LEED (Leadership in Energy and Environmental Design): LEED BD+C: Core and Shell Development
6. Underwriters Laboratories of Canada (CAN/ULC)
 1. CAN/ULC S102-2018: Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies
 2. CAN/ULC-S134-13: Standard Method of Fire Test of Exterior Wall Assemblies
7. California Department of Public Health (CDPH)
 1. CDPH Standard Method v1.2–2017: Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers Version 1.2

1.3 DEFINITIONS

1. Drained / back-ventilated rainscreen cladding (D/BV): Rainscreen system that deflects and drains off the majority of rain water using the outermost surface of the wall. Joints are intended to withstand the kinetic action of wind-driven rain wind. However, no attempt is made to minimize leakage using pressure equalization or other methods.

1.4 ADMINISTRATIVE REQUIREMENTS

ABET LAMINATI Spec Note: Retain the paragraph below if the work of this Section is sufficiently extensive or complex to warrant a meeting prior to the installation of the panels. Review the information below and update as necessary to incorporate particular requirements about the meeting.

1. Preinstallation Meeting: Conduct conference at Project site.

1. Meet with Owner, Consultant, solid phenolic panel Subcontractor, solid phenolic panel manufacturer's representative, structural-support Subcontractor, and Subcontractors whose work interfaces with or impacts solid phenolic panels, such as doors, windows, and louvres Subcontractors.
 2. Review and finalize construction schedule, as well as establish staffing, material, equipment, and facilities requirements to proceed with work of this Section and avoid delays.
 3. Review procedures necessary for solid phenolic panel installation, including manufacturer's written instructions.
 4. Verify condition of sub-framing and supports, including alignment and connection to structural elements, and confirm that such framing meets manufacturer's acceptance criteria.
 5. Conduct a review of flashing, penetrations, openings and other special details that may impact solid phenolic panel installation.
 6. Review regulations and requirements pertaining to insurance, certificates, as well as requirements for testing and inspections.
 7. Confirm requirements for temporary protection of solid phenolic panel assemblies during and after installation.
 8. Review and establish procedures for repairing panels that have been damaged during or after installation.
 9. Maintain records of proceedings, including remedial measures and action items. Provide copy of meeting records to each participant.
2. Coordination: Coordinate work of this Section with Subcontractors providing rain drainage work, flashings, trims, sealants and other adjacent components to ensure final installation is secure and free from air or water leakage beyond limits indicated in Contract Documents.

1.5 ACTION SUBMITTALS

ABET LAMINATI Spec Note: Edit text in square brackets to reflect the specifics of the project.

1. Make Submittals in accordance with provisions indicated in **[Section 01 33 00, Submittal Procedures.]**
2. Product Data: Submit product literature and data sheets for solid phenolic wall panels indicating product features, performance criteria, physical dimensions, finishes and limitations.
3. Sustainable Design Submittals:
 1. Building Product Disclosure and Optimization: To promote the use of environmentally and health-conscious construction materials, manufacturer must provide publicly available information as follows:

ABET LAMINATI Spec Note: Retain text in square brackets below if the project is pursuing LEED V4 credits related to building product disclosure and optimization.

1. Environmental Product Declarations (EPD): Submit Product-specific Type III EPD conforming to ISO 14025 **[or other approved environmental product declaration framework recognized by CaGBC].**
2. Health Product Declarations (HPDs): Submit documentation demonstrating chemical inventory of materials to at least 0.1% (1000ppm) and conforming to: Health Product Declaration Open Standard v2.2 **[or other approved material ingredient framework recognized by CaGBC.]**

ABET LAMINATI Spec Note: For projects desiring to use wood from sustainably harvested sources, Abet Laminati can offer FSC certified wood. Review the requirements of the project and edit the paragraph below accordingly. Delete the paragraph below if the project does not plan to use FSC certified wood.

2. **[Sourcing of Raw Materials: Submit Forest Stewardship Council (FSC) chain-of-custody certifications demonstrating that products are manufactured from certified wood sources that comply with forest certification standards.]**

ABET LAMINATI Spec Note: Solid phenolic panel systems specified in this Section are manufactured with no-added formaldehyde (NAF) or ultra-low emitting formaldehyde (ULEF) as a standard. These characteristics contribute to the human health and sustainability criteria of various green building rating systems, such as LEED.

3. Low-Emitting Materials:
 1. Submit certifications indicating compliance with general emissions evaluation per CDPH Standard Method v1.2 as specified in this Section.
 2. Submit composite wood evaluation and certifications for no-added formaldehyde (NAF) or ultra-low emitting formaldehyde (ULEF) composite-wood products per California Air Resources Board (CARB) composite wood products Airborne Toxic Control Measure (ATCM)
4. Shop Drawings: Show the following:
 1. Solid phenolic panel manufacturing and installation details, including edge conditions, joints, panel profiles, corners, anchorages, attachment assembly, trims, flashings, closures, and accessories.
5. Delegated-Design Submittals: Submit Shop Drawings and submittals for solid phenolic wall panels that have been signed and sealed by a Professional Engineer licensed in the jurisdiction of the Project, and who is responsible for their preparation.
6. Samples: Submit samples minimum 305 mm (12 inches) in length by actual panel width for each exposed finish required. Include fasteners, closures, and other solid phenolic panel accessories.

1.6 INFORMATIONAL SUBMITTALS

1. Sample Warranties: Submit sample warranties for extended warranties indicated in this Section for Consultant's review.
2. Test and Evaluation Reports: Submit copies of test and evaluation reports prepared by independent testing agencies acceptable to authorities having jurisdiction attesting to the conformity of solid phenolic panels with fire performance requirements stipulated in this Section.

3. Certificates:

1. Submit proof of manufacturer's ISO 9001 registration and compliance.
2. Submit proof of manufacturer's ISO 14001 registration and compliance.

1.7 CLOSEOUT SUBMITTALS

1. Maintenance Data: Submit solid phenolic panel maintenance data for inclusion in building's operation and maintenance manuals.

1.8 QUALITY ASSURANCE

1. Manufacturer Qualifications: Provide Products from a manufacturer with minimum 20 years of experience and capable of providing solid phenolic panel systems that meet or exceed performance requirements indicated in this Section.
 1. Manufacturer must be an ISO 9001 and ISO 14001 registered company.

ABET LAMINATI Spec Note: ABET Corporation provides installation training to ensure that installers are acquainted with its products. Retain text in square brackets below to limit installer selection to persons or organizations who have previously completed installation training.

2. Installer Qualifications: Provide competent installers **[who are trained and approved by manufacturer,]** and have a minimum of five years' experience in the application of the Products, systems, and assemblies indicated in this Section.

ABET LAMINATI Spec Note: Edit text in square brackets to reflect the specifics of the project.

3. Mock-ups: Construct mock-ups at Project site to validate decisions made through submittals, to show aesthetic qualities, and to establish benchmarks for quality of fabrication and installation. **[Conform to requirements of Section 01 43 00, Quality Assurance.]**

ABET LAMINATI Spec Note: Keep the paragraph for a large-scale mockup. Indicate whether the extent of the mock-up will be indicated on Drawings or directed on-site by the Consultant. If mock-up location is indicated on Drawings, indicate the portion of the building that is to be represented by the mockup or sketch the mockup as a separate element.

1. Construct mockup of typical solid phenolic panel assembly including corner, soffits, supports, attachments, and accessories **[as indicated on Drawings] [as directed on site].**

ABET LAMINATI Spec Note: Edit paragraph below to establish whether mock-ups must be demolished at the end of the Project, or if they can be incorporated into the final building.

2. Mock-up at time of Substantial Performance of the Work: **[Demolish and remove.] [May be incorporated in the completed Work if intact and undamaged.]**

1.9 DELIVERY, STORAGE, AND HANDLING

1. Conform to manufacturer's written instructions for delivery, storage and handling.
2. Deliver solid phenolic panels and accessories undamaged and undeformed. Provide protection to solid phenolic panels during transportation and handling.
3. Unload, store, and erect solid phenolic panels such way that are not bent, warped, twisted, or suffer other damage.
4. Store solid phenolic panels horizontally on platforms or pallets, covered with appropriate weathertight and ventilated covering. Provide protective polyethylene sheet between pallet and the first panel, as well as on top of stack.
5. Provide steel or nylon straps to secure panels to pallets to prevent them from moving. Protect edges and corners.
6. Store solid phenolic panels in a dry location with positive slope for water drainage. Do not store solid phenolic panels in contact with other materials that may discolour, dent, or otherwise affect them.

1.10 FIELD CONDITIONS

1. Weather Conditions: Begin installation only when current and anticipated weather conditions allow for proper assembly of solid phenolic panels in accordance with manufacturers' written instructions and warranty requirements.

1.11 WARRANTY

ABET LAMINATI Spec Note: Abet Laminati's standard warranty is a 10-year limited warranty. Contact Abet Laminati if special warranty requirements are needed for this project.

1. Extended Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty certificate, in which manufacturer undertakes to repair or replace components of solid phenolic panel systems that exhibit material defects within warranty period. Defects include, but are not limited to, spontaneous splitting, splintering, rot, or delamination caused by material or manufacturing flaws.
2. Manufacturer's warranty is in addition to, and does not supersede, any other rights that Owner may have under Contract Documents.
3. Warranty Period: Ten years from date of completion of solid phenolic panel installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

1. Basis-of-Design: Materials specified in this Section are based on “MEG F1 | Material Exterior Grade” as supplied by Abet Corporation; 5195 Timberlea Blvd Mississauga ON L4W 2S3; Tel: 1-800-223-2238; web: <https://abetlaminati.com>

ABET LAMINATI Spec Note: Retain one of the two options below to either permit or preclude other manufacturers from bidding on the Work of this Section.

2. **[Substitution Limitations: No further substitutions are acceptable.]**

OR

3. **[Substitution Limitations: Conforming to requirements of Section 01 25 00, Substitution Procedures and as follows:**
 1. **Consultant will consider requests for substitution if received [10] days before Bid Closing Deadline. Requests received after that time will be rejected. Consultant will consider requests for substitution when following conditions are satisfied:**
 1. **Requests for substitution include a list of at least five similar projects of equivalent size where products have been installed for a minimum of five years.**
 2. **Requested substitution does not require extensive revisions to the Contract Documents.**
 3. **Requested substitution is consistent with the Contract Documents and will produce indicated results.**
 4. **Requested substitution will not adversely affect construction schedule.**
 5. **Requested substitution provides specified warranty.]**

2.2 SYSTEMS AND FABRICATORS

1. Fabrication of solid phenolic panels and associated support systems must be undertaken by one of the following fabricators:
 1. Abet Corporation; 5195 Timberlea Blvd Mississauga ON L4W 2S3; Tel: 1-800-223-2238; web: <https://abetlaminati.com>
 2. Fabricator approved by Abet Corporation.

2.3 REGULATORY REQUIREMENTS

ABET LAMINATI Spec Note: The clause below is based on the requirements of the National Building Code of Canada. Similar clauses exist in provincial codes. Verify and update to meet requirements of project.

1. System Fire Propagation Characteristics: Solid phenolic wall panel system must be tested to CAN/ULC-S134 and satisfy the requirements of the **[National Building Code of Canada, Clause 3.1.5.5]**.
2. Surface Burning Characteristics: in accordance with CAN/ULC S102 with the following results:
 1. Flame spread value (FSV): 5 or less.
 2. Smoke Developed Value (SDV): 26 or less.

2.4 DESIGN/PERFORMANCE REQUIREMENTS

1. Engineering Design: Employ the services of a Professional Engineer licensed to practice in the jurisdiction of the Project, and carrying professional liability insurance, to design and certify solid phenolic wall panel assemblies, including their attachment to the building's framing systems.

ABET LAMINATI Spec Note: Edit the paragraphs below to reflect the building code that applies to the project.

2. Structural Performance: Provide solid phenolic panel systems capable of withstanding the effects of the live and dead loads in accordance with requirements of **[National Building Code of Canada]**.
 1. Wind Loads: Determined in accordance with **[National Building Code of Canada]** requirements for geographical location of project, with 1 in 50-year return probability.
3. Design system as a drained / back-ventilated rainscreen cladding. Provide minimum 25 mm (1 inch) air space behind panels unless otherwise indicated.
4. Design drainage system to allow free flow of water from wall's interior to the exterior. Provide flashings and accessories to prevent moisture from entering the wall or to divert it to the exterior. Ensure drained water does not discolour architectural finishes, pool in puddles, or create icicles.
5. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

2.5 SUSTAINABILITY CHARACTERISTICS

1. General Emissions Evaluation: Solid phenolic panels must be tested and proven to be compliant using the applicable exposure scenario per CDPH Standard Method v1.2–2017.
2. Composite Wood Evaluation: Composite wood, as defined by CARB ATCM, must demonstrate low formaldehyde emissions consistent with certification requirements for ULEF or NAF resins.

ABET LAMINATI Spec Note: For projects desiring to use wood from sustainably harvested sources, Abet Laminati can offer FSC certified wood. Review the requirements of the project and edit the paragraph below accordingly. Delete the paragraph and subsequent paragraphs below if the project does not plan to use FSC certified wood.

3. [Wood components used in phenolic panel assembly must be FSC-certified.]

ABET LAMINATI Spec Note: Retain text in square brackets below if the project is pursuing LEED V4 certification.

4. [Sustainable Design Intent: Comply with project requirements intended to achieve sustainable design, measured and documented according to the LEED Green Building Rating System of the Canadian Green Building Council – LEED V4.1.]

2.6 SOLID PHENOLIC PANEL SYSTEM (PNL-#)

1. Provide exterior-grade compact solid phenolic wall panels conforming to BS EN 438-6 consisting of a core layer fabricated from sheets of kraft paper impregnated with phenolic resins, and with the following minimum characteristics:

ABET LAMINATI Spec Note: The following are salient characteristics of solid phenolic panels intended for outdoor use. Refer to the MEG F1 technical data sheets if additional performance criteria relevant to the project are required to be listed in addition to those indicated here.

1. Standard manufacturing dimensional tolerances (EN 438-2)
 1. Length: - 0 + 10 mm
 2. Width: - 0 + 10 mm
 3. Thickness : ± 0.5 mm (8 mm and 10 mm thickness)
 4. Squareness: ≤ 1.5 mm/m
2. Standard dimensional tolerances for fabrications and layouts (EN 438-2)
 1. Length : ± 1 mm
 2. Width : ± 1 mm
 3. Squareness: ≤ 1 mm/m
3. Mechanical characteristics (EN ISO 178)
 1. Flexural strength:
 1. Longitudinal ≥ 140 MPa
 2. Transverse ≥ 100 MPa
 2. Modulus of Elasticity:
 1. Longitudinal ≥ 14000 MPa
 2. Transverse ≥ 10000 MPa

ABET LAMINATI Spec Note: Make selections in paragraphs below to suit specifics of the project. Generally, 8 mm thicknesses are used for systems with exposed fasteners while 10 mm thicknesses are used for systems with concealed fasteners.

2. Panel Nominal Thickness: [8 mm (5/16 inch)] [10 mm (3/8 inch)]
3. Panel Dimensions: [3050mm x1300mm] [4200mm x1300mm] [4200mmx1610mm] [As indicated on Drawings.]

4. Finish: Manufacturer's standard UV-resistant **[single sided decorative] [double sided decorative]** finish.

ABET LAMINATI Spec Note: Use the paragraph below if final colour selections have not yet been made. Since various colour / pattern selections have cost implications and introduce uncertainty to the project's cost management systems, attempt to limit the list to selections that will complement the building's proposed aesthetics.

5. Colours and patterns: Allow Consultant to select colours and patterns from the following collections **["MEG Standard"] ["MEG Colours"] ["MEG Wood"] ["MEG Metal"] ["MEG Concrete"]**

OR

ABET LAMINATI Spec Note: Use the paragraph below if final colour / pattern selections are known. Specifying the panel's exact colours / patterns usually results in more accurate pricing from bidders.

6. Colours and patterns: **[Insert colour/pattern]**
7. Fastener visibility: **[exposed fasteners] [concealed fasteners]** assembly.

2.7 AUXILIARY MATERIALS

1. Substructure: aluminum extrusions or galvanized steel sections as specified in this Section.
 1. Aluminum extrusions: Minimum 1.4 mm (18 ga) thick 6063-T5 or 6063-T6 J-channels and hat-channels conforming to ASTM B317 attached to existing building structure and designed to support cladding panels.
 2. Galvanized steel components: ASTM C645, cold-formed, galvanized steel sheet to ASTM A653/A653M, Z275 hot-dip galvanized (G90) coating designation, minimum 3 mm thick J-channels and hat-channels or of other thicknesses shown to be structurally equivalent to aluminum extrusion thickness specified in this Section.
 3. Substructure nominal depth: 25 mm (1 inch).
 4. Material visible after assembly of wall panel: finished to be inconspicuous in final installation. Paint as required to be concealed behind panel open joints.

ABET LAMINATI Spec Note: Retain text below if the project intends to use thermally-broken sub framing. Verify suitability of products listed below against intended thermal performance objectives of the project.

2. Thermally-Broken Sub-framing: Low-conductivity thermally-broken, intermittent insulation clips with adjustable depth and suitability for vertical and horizontal sub-girts, designed to maintain insulation effectiveness.
 1. Basis-of-Design Products: **["Cascadia Clip" by Cascadia Windows and Doors.] ["Crossfix®" by EJOT Holding GmbH & Co. KG] ["Nvelope Rainscreen Cladding" by SFS Envelope Systems]**

3. Bird and Insect Screening: Aluminum mesh with minimum wire diameter of 0.30 mm (0.012 inch), painted as necessary to be concealed behind panel open joints. Screening must provide at least 50% open area.
4. Panel Joint Closures: Manufacturer's standard pre-coated black 0.8 mm (22 ga) sheet metal in locations indicated on reviewed Shop Drawings.
5. Panel Accessories: as required for full weathertight panel system. Include trims, flashings, closures and similar components. Unless otherwise indicated, ensure accessories are fabricated from aluminum to match to solid phenolic panel finishes.
6. Fasteners for fastening solid phenolic panels to subframing: Stainless steel self-tapping screws or other fasteners suitable for withstanding design loads and stresses.

ABET LAMINATI Spec Note: Delete paragraph below if fasteners are not exposed.

1. **[Exposed Fastener Head Finish: Provide plastic caps or factory-applied coating in colour to match solid phenolic panels.]**
2. Basis-of-Design Products: "Ejot JT3" by EJOT Holding GmbH & Co. KG.
7. Fasteners for miscellaneous metal framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.
8. Water Resistive Barrier (WRB): to ASTM E2556/E2556M, UV-Resistant, 3-layer tear-resistant spun-bonded polypropylene (PP) fabric. Product must be designed for application with open-joint cladding systems.
 1. Acceptable Products:
 1. "DELTA®FASSADE S" by Dörken Systems, Inc.
 2. "Tyvek Commercial Wrap" or "Tyvek Commercial Wrap D" by Dupont
 3. "WeatherMate" or "WeatherMate Plus" by Dow Chemical Company
 4. "RevealShield" by VaproShield
 5. "GreenGuard C500 Building Wrap", "GreenGuard C2000 Building Wrap", "GreenGuard Classic Wrap" (a.k.a. Lowes Housewrap), or "GreenGuard RainDrop 3d" by Pactiv Building Products
 6. "R-Guard Spray Wrap" or "R-Guard MVP" by Prosoco.

ABET LAMINATI Spec Note: Edit text in square brackets to reflect the specifics of the project.

9. Air Barrier/Vapour Retarder: As specified in **[Section 07 27 00, Air Barriers.]**
10. Insulation: As specified in **[Section 07 21 00, Building Insulation.]**

2.8 FABRICATION

1. Allow panels and substrates to acclimatize for at least 48 hours prior to beginning fabrication operations. Conform to manufacturer's instructions.

2. Fabricate and finish solid phenolic panels and accessories in the shop using techniques and processes indicated in manufacturer's written fabrication instructions.
3. Panel lines, breaks, and angles must be straight and true, with no warping or buckled surfaces.
4. Cut, sand and round edges to a smooth finish. Panel edges "as-provided" from solid phenolic manufacturer's factory are not permitted in the final installation.

PART 3 - EXECUTION

3.1 EXAMINATION

1. Examine substrates, locations, and existing conditions to ensure compliance with required installation tolerances, solid phenolic panel supports, and other factors that might impact performance of the work.
2. Ensure framing, girts, angles, channels, studs, and other support components and attachments are installed within alignment tolerances specified by solid phenolic panel manufacturer.
3. Where applicable, verify that air-barriers, vapour-retarders and water-resistive barriers have been properly installed over sheathing or backing substrate to prevent air infiltration or water penetration.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of work implies acceptance of in-place conditions.

3.2 PREPARATION

ABET LAMINATI Spec Note: Delete text in brackets below if thermally broken subframing is not used on this Project.

1. Install subframing, furring, **[thermally-broken subframing]** and other miscellaneous panel support members and anchorages according to solid phenolic panel manufacturer's written recommendations. Space sub-framing channels at interval indicated on reviewed Shop Drawings.
2. Install water resistive barrier behind solid phenolic wall panels in accordance with water resistive barrier manufacturer's instructions.

3.3 SOLID PHENOLIC PANEL INSTALLATION

1. Install solid phenolic panels in accordance with the manufacturer's written instructions, in orientations, sizes, and locations indicated on reviewed Shop Drawings. Unless otherwise indicated in manufacturer's installation instructions or on reviewed Shop Drawings, install panels perpendicular to supports.

2. Securely fasten solid phenolic panels and other components to structure, while allowing for thermal and structural movements. Separate panels from sub-framing using rubber strips to allow for movement between panel and support system, and in accordance with manufacturer's instructions.
3. Install accessories with positive attachment to building, and with weathertight mounting. Coordinate installation with flashings and other components.

3.4 ERECTION TOLERANCES

1. Installation Tolerances: align solid phenolic wall panel units within installed tolerance of 2 mm per m (0.08 inch per 3.3 feet) between fixing points, non-accumulative, on level, plumb, and location lines as indicated.

3.5 FIELD QUALITY CONTROL

1. Fabricator of products supplied under this Section must conduct a review of procedures including handling, installation, application, protection, and cleaning of products and provide written reports to Consultant. Provide field services, which include product use recommendations and periodic site visits to ensure that products are installed according to manufacturer's instructions.

ABET LAMINATI Spec Note: The following timeframe is a suggested schedule for conducting quality assurance inspections on the installation. Modify requirements to reflect the project's particularities and complexity.

1. Schedule site visits to review Work at the following stages:
 1. After delivery and storage of products, and when preparatory Work on which Work of this Section depends is complete, but before installation begins.
 2. **[Twice]** during progress of Work at **[25%]** and **[60%]** complete.
 3. Upon completion of Work, after cleaning is carried out.
2. Obtain reports promptly after field reviews are completed and submit to Consultant.

ABET LAMINATI Spec Note: Edit the wording in square brackets below to reflect which entity is responsible for engaging the inspection and testing agency's services.

2. Inspection and Testing Agency: **[Owner may engage] [Owner will engage] [Contractor must engage]** a qualified independent testing agency to perform field tests and inspections.
 1. Where tests and inspections reveal defective work, provide corrective measures promptly.
 2. Additional tests and inspections, if required, will be performed at Contractor's expense to determine compliance of replaced or additional work with specified requirements.

3.6 CLEANING AND PROTECTION

1. Remove temporary protective covers and strippable films before installing solid phenolic panels. Where films are provided on both sides of panels, ensure both films are removed at the same time to avoid panel warpage.
2. Clean completed surfaces of solid phenolic panels according to manufacturer's instructions.
3. Following installation of solid phenolic panels, clean obstructions, dirt, and sealants from weep holes and drainage channels.
4. Replace broken or damaged solid phenolic panels that cannot be repaired successfully using finish touchup or equivalent minor repair operations.

END OF SECTION