

SECTION 06 20 00 - FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

1. Interior trim.
2. Plastic laminate-faced cabinets not scheduled as plastic laminate casework.
3. Plastic laminate-clad countertops and other plastic laminate fabrications.
4. Simulated stone, including quartz countertops and other simulated stone fabrications.
5. Miscellaneous finished carpentry.
6. Shop finishing of finished carpentry.

- B. Related Requirements:

1. Division 06 Section "Rough Carpentry" for furring, blocking, and other carpentry work not exposed to view.
2. Division 09 Section "Painting and Finishing" for priming, backpriming and staining of interior finish carpentry.
3. Division 12 Section "Plastic-Laminate-Faced Casework" for stock-designed cabinets and accessories.

1.3 DEFINITIONS

- A. MDO: Plywood with a medium-density overlay on the face.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.
- B. Shop Drawings: Show location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 1. Show details full size.
 2. Show locations and sizes of furring, blocking, details of joints, and hanging strips, including concealed blocking and reinforcement specified in other Sections.
 3. Show direction of veining, grain, or other directional patterns
 4. Show locations and sizes of cutouts and holes for electrical switches and outlets and other items installed in architectural cabinets.

- C. Samples for Initial Selection: For each type of product involving selection of colors, profiles, or textures. Provide complete sample box with all colors and patterns from price ranges specified included for selection.
- D. Samples for Verification:
 - 1. For each species and cut of lumber and panel products with transparent, non-transparent or non-factory-applied finish, with 1/2 of exposed surface finished, 50 sq. in. for lumber and 8 by 10 inches for panels.
 - 2. Exposed cabinet hardware.
 - 3. Plastic laminate, Solid Polymer, Quartz, for each type, color, pattern, and surface finish.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and fabricator.
- B. Product Certificates: For each type of product.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For finish carpentry to include in maintenance manuals. Include product data for use and care products used or recommended by Installer, and names, addresses, and telephone numbers of local sources for products.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Firm experienced in successfully producing finished carpentry similar to that indicated for this project, with sufficient production capacity to produce required units without causing delay in the work.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate products similar to those required for this Project and whose products have a record of successful in-service performance.
- C. Installer Qualifications: Arrange for installation of finished carpentry by a firm that can demonstrate successful experience in installing finished carpentry and solid surfacing items similar in type and quality to those required for this project.
- D. AWI Quality Standard: Comply with applicable requirements of "Architectural Woodwork Quality Standards" published by the Architectural Woodwork Institute (AWI) except as otherwise indicated.

1.8 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at project site:
 - 1. Review specification requirements.
 - 2. Review installation procedures.
 - 3. Inspect project conditions.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Protect materials from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.
- B. Deliver finish carpentry materials only when environmental conditions meet requirements specified for installation areas. If finish carpentry materials must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.10 FIELD CONDITIONS

- A. Field Measurements: Where finish carpentry is indicated to be fitted to other construction, check actual dimensions of other construction by accurate field measurements before manufacturing woodwork; show recorded measurements on final shop drawings. Coordinate manufacturing schedule with construction progress to avoid delay of work.
 - 1. Where field measurements cannot be made without delaying the work, guarantee dimensions and proceed with manufacture of woodwork without field measurements. Coordinate other construction to ensure that actual dimensions correspond to guaranteed dimensions.
- B. Established Dimensions: Where countertops and assemblies are indicated to fit to other construction, establish dimensions for areas where countertops are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.
- C. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.
- D. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.
 - 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Lumber: DOC PS 20 and the following grading rules:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association, "Standard Grading Rules for Northeastern Lumber."
 - 2. NHLA: National Hardwood Lumber Association, "Rules for the Measurement and Inspection of Hardwood & Cypress."
 - 3. NLGA: National Lumber Grades Authority, "Standard Grading Rules for Canadian Lumber."
 - 4. SPIB: The Southern Pine Inspection Bureau, "Standard Grading Rules for Southern Pine Lumber."
 - 5. WCLIB: West Coast Lumber Inspection Bureau, Standard No. 17, "Grading Rules for West Coast Lumber."
 - 6. WWPA: Western Wood Products Association, "Western Lumber Grading Rules."

- B. Factory mark each piece of lumber with grade stamp of inspection agency indicating grade, species, moisture content at time of surfacing, and mill.
 - 1. For exposed lumber, mark grade stamp on end or back of each piece, or omit grade stamp and provide certificates of grade compliance issued by inspection agency.
- C. Softwood Plywood: DOC PS 1.
- D. Hardboard: AHA A135.4.
- E. MDF: ANSI A208.2, Grade 130, made with binder containing no urea-formaldehyde resin.
- F. Particleboard: ANSI A208.1, Grade M-2 made with binder containing no urea-formaldehyde resin.

2.2 INTERIOR TRIM

- A. Hardwood Lumber Trim for Transparent Finish (Stain or Clear Finish):
 - 1. Species and Grade: Red oak; NHLA.
 - 2. Maximum Moisture Content: 10 percent.
 - 3. Finger Jointing: Not allowed.
 - 4. Gluing for Width: Use for lumber trim wider than 6 inches.
 - 5. Veneered Material: Use for lumber trim wider than 6 inches.
 - 6. Face Surface: Surfaced (smooth).
 - 7. Matching: Selected for compatible grain and color.
- B. Lumber Trim for Opaque Finish (Painted Finish):
 - 1. Species and Grade: Eastern white pine, Finish or 1 Common; NeLMA or NLGA.
 - 2. Species and Grade: B Finish; NHLA.
 - 3. Maximum Moisture Content: 15 percent.
 - 4. Finger Jointing: Not allowed.
 - 5. Face Surface: Surfaced (smooth).
- C. Hardwood Moldings for Transparent Finish (Stain or Clear Finish): WMMPA HWM 2, N-grade wood moldings made to patterns included in WMMPA HWM 1.
 - 1. Species: Red oak.
 - 2. Maximum Moisture Content: 9 percent.
 - 3. Finger Jointing: Not allowed.
 - 4. Matching: Selected for compatible grain and color.
- D. Moldings for Opaque Finish (Painted Finish): Made to patterns included in WMMPA WM 12.
 - 1. Hardwood Moldings: WMMPA HWM 2, P-grade.
 - a. Species: Aspen, basswood, cottonwood, gum, magnolia, soft maple, tupelo, or yellow poplar.
 - b. Maximum Moisture Content: 9 percent.
 - 2. Finger Jointing: Not allowed.
- E. Plastic Laminate Trim:
 - 1. Plastic laminate as specified in this Section.

F. Simulated Stone Trim:

1. Solid Polymer-Surface Material or Quartz as specified in this Section.

2.3 PLASTIC-LAMINATE-FACED CABINETS

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades of architectural plastic-laminate cabinets indicated for construction, finishes, installation, and other requirements.
- B. Grade: Premium.
- C. Cabinet, Door, and Drawer Front Interface Style: As indicated.
- D. Reveal Dimension: As indicated.
- E. High-Pressure Decorative Laminate: NEMA LD 3, grades as specified in this Section.
- F. Laminate Cladding for Exposed Surfaces:
1. Horizontal Surfaces: Grade HGS.
 2. Postformed Surfaces: Grade HGP.
 3. Vertical Surfaces: Grade VGS.
 4. Edges: PVC edge banding, 0.12 inch thick, matching laminate in color, pattern, and finish.
- G. Materials for Semiexposed Surfaces:
1. Surfaces Other Than Drawer Bodies: High-pressure decorative laminate, NEMA LD 3, Grade VGS.
 - a. Edges of Plastic-Laminate Shelves: PVC edge banding, 0.12 inch thick, matching laminate in color, pattern, and finish.
 - b. For semiexposed backs of panels with exposed plastic-laminate surfaces, provide surface of high-pressure decorative laminate, NEMA LD 3, Grade VGS.
 2. Drawer Sides and Backs: Solid-hardwood lumber.
 3. Drawer Bottoms: Hardwood plywood.
- H. Dust Panels: 1/4-inch plywood or tempered hardboard above compartments and drawers unless located directly under tops.
- I. Concealed Backs of Panels with Exposed Plastic-Laminate Surfaces: High-pressure decorative laminate, NEMA LD 3, Grade BKL.
- J. Drawer Construction: Fabricate with exposed fronts fastened to subfront with mounting screws from interior of body.
1. Join subfronts, backs, and sides with glued rabbeted joints supplemented by mechanical fasteners.
- K. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
1. As selected by Architect from laminate manufacturer's full range in the following categories:

- a. Solid colors.
- b. Wood grains.
- c. Patterns.

L. Wood Materials

- 1. Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
 - a. Wood Moisture Content: 5 to 10 percent.
- 2. Veneer-Faced Panel Products (Hardwood Plywood): HPVA HP-1, made with adhesive containing no urea formaldehyde.

2.4 CABINET HARDWARE AND ACCESSORIES

- A. General: Provide cabinet hardware and accessory materials associated with cabinets except for items specified in Division 08 Section "Door Hardware (Descriptive Specification)."
- B. Butt Hinges: 2-3/4-inch, five-knuckle steel hinges made from 0.095-inch- thick metal, and as follows:
 - 1. Semiconcealed Hinges for Flush Doors: BHMA A156.9, B01361.
- C. Back-Mounted Pulls: BHMA A156.9, B02011.
- D. Wire Pulls: Back mounted, solid metal, 4 inches long, 5/16 inch in diameter.
- E. Catches: Magnetic catches, BHMA A156.9, B03141.
- F. Adjustable Shelf Standards and Supports: BHMA A156.9, B04071; with shelf rests, B04081.
- G. Shelf Rests: BHMA A156.9, B04013; metal, two-pin type with shelf hold-down clip.
- H. Drawer Slides: BHMA A156.9.
 - 1. Grade 1HD-100 and Grade 1HD-200: Side mounted; full-extension type; zinc-plated-steel ball-bearing slides.
 - 2. For drawers not more than 3 inches high and not more than 24 inches wide, provide Grade 1.
 - 3. For drawers more than 3 inches high but not more than 6 inches high and not more than 24 inches wide, provide Grade 1HD-100.
 - 4. For drawers more than 6 inches high or more than 24 inches wide, provide Grade 1HD-200.
 - 5. For computer keyboard shelves, provide Grade 1HD-100.
 - 6. For trash bins not more than 20 inches high and 16 inches wide, provide Grade 1HD-200.
- I. Door Locks: BHMA A156.11, E07121.
- J. Drawer Locks: BHMA A156.11, E07041.
- K. Door and Drawer Silencers: BHMA A156.16, L03011.
- L. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with BHMA A156.18 for BHMA finish number indicated.
 - 1. Satin Chromium Plated: BHMA 626 for brass or bronze base; BHMA 652 for steel base.

- M. For concealed hardware, provide manufacturer's standard finish that complies with product class requirements in BHMA A156.9.

2.5 CABINET MISCELLANEOUS MATERIALS

- A. Furring, Blocking, Shims, and Hanging Strips: Softwood or hardwood lumber, kiln dried to less than 15 percent moisture content.
- B. Anchors: Select material, type, size, and finish required for each substrate for secure anchorage. Provide metal expansion sleeves or expansion bolts for post-installed anchors. Use nonferrous-metal or hot-dip galvanized anchors and inserts at inside face of exterior walls and at floors.
- C. Adhesives: Do not use adhesives that contain urea formaldehyde.

2.6 CABINET FABRICATION

- A. Fabricate cabinets to dimensions, profiles, and details indicated.
- B. Complete fabrication, including assembly and hardware application, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - 1. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.
- C. Shop-cut openings to maximum extent possible to receive hardware, appliances, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Sand edges of cutouts to remove splinters and burrs.

2.7 PLASTIC-LAMINATE COUNTERTOPS AND ASSEMBLIES

- A. Quality Standard: Unless otherwise indicated, comply with the "Architectural Woodwork Standards" for grades indicated for construction, installation, and other requirements.
- B. Grade: Premium.
- C. High-Pressure Decorative Laminate: NEMA LD 3, Grade HGP.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Formica Corporation.
 - b. Pionite; a Panolam Industries International, Inc. brand.
 - c. Wilsonart LLC.
- D. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1. As selected by Architect from manufacturer's full range in the following categories:

- a. Solid colors.
 - b. Wood grains.
 - c. Patterns.
2. Grain Direction: Parallel to cabinet fronts.
3. A maximum of 12 laminates will be selected.
- E. Edge Treatment: Same as laminate cladding on horizontal surfaces, applied before top material.
- F. Outside Corner Treatment: 2" radius or as indicated on Drawings.
- G. Core Material: Particleboard.
- H. Core Thickness: 1-1/4 inch.
- I. Backer Sheet: Provide plastic-laminate backer sheet, NEMA LD 3, Grade BKL, on underside of countertop substrate.
- J. Wood Materials
 1. Wood Products: Provide materials that comply with requirements of referenced quality standard unless otherwise indicated.
 2. Composite Wood Products: Provide materials that comply with requirements of referenced quality standard for each type of woodwork and quality grade specified unless otherwise indicated.
 - a. Particleboard: ANSI A208.1. Density 45#-48#, 3-ply ASTM DD1037-91A, Grade M-2.
- K. Accessories
 1. Grommets for Cable Passage through Countertops: 3-inch OD, molded-plastic grommets and matching plastic caps with slot for wire passage.
- L. Fabrication
 1. Sand wood lightly to remove raised grain on exposed surfaces before fabrication.
 2. Fabricate countertops to dimensions, profiles, and details indicated. Provide front and end overhang of 1 inch over base cabinets. Provide continuous drip groove on under-surface ½ inch from the edge. Ease edges to radius indicated for the following:
 - a. Solid-Wood (Lumber) Members: 1/16 inch unless otherwise indicated.
 3. Complete fabrication, including assembly, to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
 - a. Trial fit assemblies at fabrication shop that cannot be shipped completely assembled. Install dowels, screws, bolted connectors, and other fastening devices that can be removed after trial fitting. Verify that various parts fit as intended and check measurements of assemblies against field measurements before disassembling for shipment.

2.8 SIMULATED STONE COUNTERTOPS AND FABRICATIONS

- A. Solid Polymer-Surface-Material Fabrications:

1. Fabrications: As indicated on Drawings.
- B. Quartz Countertops and Fabrications:
1. Configuration: Provide countertops with the following front and backsplash style:
 - a. Front: as indicated on Drawings.
 - b. Backsplash: Straight, slightly eased at corner.
 - c. Endsplash: Matching backsplash.
 - d. Other Fabrications: As indicated on Drawings.
 2. Countertops: 3/4-inch- thick, quartz with front edge built up with same material.
 3. Backsplashes: 3/4-inch- thick, quartz.
 4. Fabrication: Fabricate tops in one piece with shop-applied edges and backsplashes unless otherwise indicated. Comply with quartz manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
 - a. Fabricate with loose backsplashes for field assembly.
- C. Countertop Materials:
1. Plywood: Exterior softwood plywood complying with DOC PS1, Grade C-C Plugged, touch sanded.
 2. Solid Polymer Surface Material: Homogeneous solid sheets of filled plastic resin complying with ANSI SS1.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Avonite Surfaces; a brand of Aristech Surfaces LLC.
 - 2) DuPont (Corian); DuPont de Nemours, Inc.
 - 3) Formica Corporation.
 - 4) Meganite Inc.
 - 5) Wilsonart LLC.
 - b. Type: Provide Standard Type or Veneer Type made from material complying with requirements for Standard Type, as indicated unless Special Purpose Type is indicated.
 - c. Colors and Patterns: As selected by Architect from manufacturer's full range equal to DuPont's (Corian) Price Groups 1-7. For purposes of bidding, Price Group 7 shall be included in the Bid. A credit shall be provided should a lesser price group be selected.
 3. Quartz: Solid sheet consisting of quartz aggregates bound together with a matrix of filled plastic resin and complying with the "Physical Characteristics of Materials" Article of ANSI SS1.
 - a. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1) Cambria.
 - 2) DuPont (Corian Quartz); DuPont de Nemours, Inc.
 - 3) Meganite Inc.
 - 4) Wilsonart LLC.
 - b. Colors and Patterns: As selected by Architect from manufacturer's full range equal to Cambria's "Signature and "Classic" Price Groups.

2.9 MISCELLANEOUS FINISHED CARPENTRY

- A. General: Fabricate miscellaneous finished carpentry indicated on the Drawings, in accordance with this Section for work including, but not limited to:
 - 1. Stools or sills.

2.10 MISCELLANEOUS MATERIALS

- A. Fasteners for Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.
- B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.
- C. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.
- D. Prefabricated, factory-finished, heavy-duty countertop support brackets equal to Universal Heavy-Duty Commercial Support Bracket by Iron Supports. Unless otherwise indicated, provide 18-inch long by 12-inch high brackets mounted as recommended by manufacturer for indicated applications.

2.11 FABRICATION

- A. Back out or kerf backs of the following members except those with ends exposed in finished work:
 - 1. Interior standing and running trim except shoe and crown molds.
- B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius unless noted otherwise.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.
- C. Before installing countertops, examine shop-fabricated work for completion and complete work as required, including removal of packing and back priming.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application.

- B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.
- C. Advise installers of other work about specific requirements for placement of inserts and similar items to be used by countertop Installer for anchoring countertops. Furnish installers of other work with Drawings or templates showing locations of these items.

3.3 CONSTRUCTION TOLERANCES FOR COUNTERTOPS

- A. Variation from Level: Do not exceed 1/8 inch in 96 inches, 1/4 inch maximum.
- B. Variation in Joint Width: Do not vary joint thickness more than one-fourth of nominal joint width.
- C. Variation in Plane at Joints (Lipping): Do not exceed 1/64-inch difference between planes of adjacent units.
- D. Variation in Line of Edge at Joints (Lipping): Do not exceed 1/64-inch difference between edges of adjacent units, where edge line continues across joint.

3.4 INSTALLATION, GENERAL

- A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, too small to fabricate with proper jointing arrangements, or with defective surfaces, sizes, or patterns.
- B. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.
 - 1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
 - 2. Where face fastening is unavoidable, countersink fasteners, fill surface flush, and sand unless otherwise indicated.
 - 3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
 - 4. Coordinate finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.5 STANDING AND RUNNING TRIM INSTALLATION

- A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary. Stagger joints in adjacent and related standing and running trim. Cope at returns, miter at outside corners, and cope at inside corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.
 - 1. Match color and grain pattern of trim for transparent finish (stain or clear finish) across joints.
 - 2. Install trim after gypsum-board joint finishing operations are completed.
 - 3. Install without splitting; drill pilot holes before fastening where necessary to prevent splitting. Fasten to prevent movement or warping. Countersink fastener heads on exposed carpentry work and fill holes.

3.6 CABINET INSTALLATION

- A. Grade: Install cabinets to comply with same grade as item to be installed.
- B. Assemble cabinets and complete fabrication at Project site to the extent that it was not completed in the shop.
- C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
- D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
- E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Secure with countersunk, concealed fasteners and blind nailing. Use fine finishing nails for exposed fastening, countersunk and filled flush with woodwork.
 - 1. Use filler matching finish of items being installed.
- F. Cabinets: Install without distortion so doors and drawers fit openings properly and are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation. Complete installation of hardware and accessory items as indicated.
 - 1. Install cabinets with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
- G. Install countertops indicated on Drawings in accordance with requirements of applicable Division 12 Section.

3.7 COUNTERTOP AND FABRICATION INSTALLATION

- A. Plastic Laminate Countertop and Fabrication Installation
 - 1. Grade: Install countertops to comply with same grade as item to be installed.
 - 2. Assemble countertops and complete fabrication at Project site to the extent that it was not completed in the shop.
 - a. Provide cutouts for appliances, plumbing fixtures, electrical work, and similar items.
 - 3. Field Jointing: Where possible, make in the same manner as shop jointing, using dowels, splines, adhesives, and fasteners recommended by manufacturer. Prepare edges to be joined in shop so Project-site processing of top and edge surfaces is not required. Locate field joints where shown on Shop Drawings.
 - a. Secure field joints in plastic-laminate countertops with concealed clamping devices located within 6 inches of front and back edges and at intervals not exceeding 24 inches. Tighten according to manufacturer's written instructions to exert a constant, heavy-clamping pressure at joints.
 - 4. Install countertops level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.
 - 5. Scribe and cut countertops to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.
 - 6. Countertops: Anchor securely by screwing through corner blocks of base cabinets or other supports into underside of countertop.

- a. Install countertops with no more than 1/8 inch in 96-inch sag, bow, or other variation from a straight line.
- b. Seal junctures of tops, splashes, and walls with mildew-resistant silicone sealant or another permanently elastic sealing compound recommended by countertop material manufacturer.

B. Simulated Stone Countertops and Fabrications Installation:

1. Install countertops and fabrications level to a tolerance of 1/8 inch in 8 feet.
2. Fasten countertops by screwing through corner blocks of base units into underside of countertop. Pre-drill holes for screws as recommended by manufacturer. Align adjacent surfaces and, using adhesive in color to match countertop, form seams to comply with manufacturer's written instructions. Carefully dress joints smooth, remove surface scratches, and clean entire surface.
 - a. Install backsplashes and endsplashes to comply with manufacturer's written instructions for adhesives, sealers, fabrication, and finishing.
 - b. Seal edges of cutouts in particleboard subtops by saturating with varnish.

3.8 ADJUSTING

- A. Replace finish carpentry that is damaged or does not comply with requirements. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.
- B. Clean, lubricate and adjust hardware.

3.9 CLEANING

- A. Clean finish carpentry on exposed and semiexposed surfaces. Restore damaged or soiled areas and touch up factory-applied finishes, if any.

3.10 PROTECTION

- A. Protect installed products from damage from weather and other causes during construction.
- B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.
 1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 06 20 00