

**SECTION 12 36 00
COUNTERTOPS**

PART 1 - GENERAL**1.1 DESCRIPTION**

- A. This section specifies casework countertops.

1.2 RELATED WORK

- A. Color and patterns of plastic laminate: SECTION 09 06 00, SCHEDULE FOR FINISHES.
- B. DIVISION 22, PLUMBING.
- C. DIVISION 26, ELECTRICAL.
- D. Equipment Reference Manual for SECTION 12 36 00, COUNTERTOPS.

1.3 SUBMITTALS

- A. Submit in accordance with SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings
1. Show dimensions of section and method of assembly.
 2. Show details of construction at 1/2 scale.
- C. Samples:
1. 150 mm (6 inch) square samples each top.
 2. Front edge, back splash, end splash and core with surface material and booking.

1.4 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. American Hardboard Association (AHA):
- A135.4-95.....Basic Hardboard
- C. Composite Panel Association (CPA):
- A208.1-09.....Particleboard
- D. American Society of Mechanical Engineers (ASME):
- A112.18.1-12.....Plumbing Supply Fittings
- A112.1.2-12.....Air Gaps in Plumbing System
- A112.19.3-08(R2004).....Stainless Steel Plumbing Fixtures (Designed for Residential Use)
- E. American Society for Testing and Materials (ASTM):
- A167-99 (R2009).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip
- A1008-10.....Steel, Sheet, Cold-Rolled, Carbon, Structural, High Strength, Low Alloy
- D256-10.....Pendulum Impact Resistance of Plastic

- D570-98(R2005).....Water Absorption of Plastics
 D638-10.....Tensile Properties of Plastics
 D785-08.....Rockwell Hardness of Plastics and Electrical
 Insulating Materials
 D790-10.....Flexural Properties of Unreinforced and
 Reinforced Plastics and Electrical Insulating
 Materials
 D4690-99(2005).....Urea-Formaldehyde Resin Adhesives
 F. Federal Specifications (FS):
 A-A-1936.....Adhesive, Contact, Neoprene Rubber
 G. U.S. Department of Commerce, Product Standards (PS):
 PS 1-95.....Construction and Industrial Plywood
 H. National Electrical Manufacturers Association (NEMA):
 LD 3-05.....High Pressure Decorative Laminates

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Adhesive
1. For plastic laminate FS A-A-1936.
 2. For wood products: ASTM D4690, unextended urea resin or unextended melamine resin, phenol resin, or resorcinol resin.
 3. For Field Joints:
 - a. Epoxy type, resistant to chemicals as specified for plastic laminate laboratory surfaces.
 - b. Fungi resistant: ASTM G-21, rating of 0.
- J. Fasteners:
1. Metals used for welding same metal as materials joined.
 2. Use studs, bolts, spaces, threaded rods with nuts or screws suitable for materials being joined with metal splice plates, channels or other supporting shape.
- K. Solid Polymer Material:
1. Filled Methyl Methacrylic Polymer.
 2. Performance properties required:

Property	Result	Test
Elongation	0.3% min.	ASTM D638
Hardness	90 Rockwell M	ASTM D785
Gloss (60° Gordon)	5-20	NEMA LD3.1
Color stability	No change	NEMA LD3 except 200 hour

Property	Result	Test
Abrasion resistance	No loss of pattern Max wear depth 0.0762 mm (0.003 in) - 10000 cycles	NEMA LD3
Water absorption weight (5 max)	24 hours 0.9	ASTM D-570
Izod impact	14 N·m/m (0.25 ft-lb/in)	ASTM D256 (Method A)
Impact resistance	No fracture	NEMA LD-3 900 mm (36") drop 1 kg (2 lb.) ball
Boiling water surface resistance	No visible change	NEMA LD3
High temperature resistance	Slight surface dulling	NEMA LD3

3. Cast into sheet form.
4. Color throughout with subtle veining through thickness.
5. Joint adhesive and sealer: Manufacturers silicone adhesive and sealant for joining methyl methacrylic polymer sheet.
6. Bio-based products will be preferred.

2.2 SINKS

A. Stainless Steel:

1. ANSI/ASME A112.19.3, Type 304.
2. Self rim for plastic laminate or similar tops with concealed fasteners.
3. Flat rim for welded into stainless steel tops.
4. Ledge back or ledge sides with holes to receive required fixtures when mounted on countertop.
5. Apply fire resistant sound deadening material to underside.

C. Stainless steel circular or oval shaped bowl.

2.3 TRAPS AND FITTINGS

A. Material as specified in DIVISION 22, PLUMBING.

B. For Stainless Steel Sinks:

1. Either cast or wrought brass or stainless steel P-traps and drain fittings; ASME A112.18.1
2. Flat strainer, except where cup strainer or overflow standpipe specified.
 - a. Provide cup strainer in cabinet type 1B.
 - b. Provide stainless steel overflow stand pipe to within 38 mm (1-1/2 inches) of sink rim.
3. Exposed surface chromium plated finish.

C. Plaster traps:

1. Cast iron body with porcelain enamel exterior finish.
2. 50 mm (2 inch) female threaded side inlet and outlet.
3. Removable galvanized cage having integral baffles and replaceable brass screens.
4. Removable gasketed cover.
5. Minimum overall dimensions: 350 x 350 x 400 mm high (14 x 14 x 16 inches) with 175 mm (7 inch) water seal.
6. Non-siphoning and easily accessible for cleaning.

D. Air Gap Fittings: ASME A112.1.2.**E. Methyl Methacrylic Polymer Sink Traps:**

1. Cast or wrought brass with flat grid strainer, off-set tail piece, adjustable 38 x 32 mm (1-1/2 x 1 1/4-inch) P trap.
2. Chromium plated finish.

2.4 WATER FAUCETS**A. ASME A112.18.1.**

1. Cast or forged brass, compression type with replaceable seat and stem assembly or replaceable cartridge.
2. Gooseneck minimum clearance above countertop of 190 mm (7-1/2 inches), bent 180 degrees for vertical discharge.
3. Exposed brass surfaces chromium plated.

2.5 ELECTRICAL RECEPTACLES

- A. Hospital grade per electrical specifications.

2.6 COUNTERTOPS

- A. Fabricate in largest sections practicable.
- B. Fabricate with joints flush on top surface.
- C. Fabricate countertops to overhang front of cabinets and end of assemblies 25 mm (one inch) except where against walls or cabinets.
- D. Provide 1 mm (0.039 inch) thick metal plate connectors or fastening devices (except epoxy resin tops).
- E. Join edges in a chemical resistant waterproof cement or epoxy cement, except weld metal tops.
- F. Fabricate with end splashes where against walls or cabinets.
- G. Splash Backs and End Splashes:
1. Not less than 19 mm (3/4 inch) thick.
 2. Height 100 mm (4 inches) unless noted otherwise.
 3. Fabricate epoxy splash back in maximum lengths practical of the same material.
- H. Drill or cutout for sinks, and penetrations.
1. Accurately cut for size of penetration.
- J. Methyl Methacrylic Polymer Tops:

1. Fabricate countertop of methyl methacrylic polymer cast sheet, 19 mm (3/4 inch) thick.
2. Fabricate back splash and end splash to height shown.
3. Fabricate skirt to depth shown.
4. Fabricate with marine edge where sinks occur.
5. Fabricate in one piece for full length from corner to corner up to 3600 mm (12 feet).
6. Join pieces with adhesive sealant.
7. Cut out countertop for lavatories, plumbing trim.
8. Provide concealed fasteners and epoxy cement for anchorage of sinks to countertop.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Before installing countertops verify that wall surfaces have been finished as specified and that mechanical and electrical service locations are as required.
- B. Secure countertops to supporting rails of cabinets with metal fastening devices, or screws through pierced slots in rails.
 1. Where type, size or spacing of fastenings is not shown or specified, submit shop drawings showing proposed fastenings and method of installation.
 2. Use round head bolts or screws.
 3. Use epoxy or silicone to fasten the epoxy resin countertops to the cabinets.
 4. Use wood or sheet metal screws for wood or plastic laminate tops; minimum penetration into top 16 mm (5/8 inch), screw size No 8, or 10.
- C. Rubber Moldings:
 1. Where shown install molding with butt joints in horizontal runs and mitered joints at corners where ceramic tile occurs omit molding.
 2. Fasten molding to wall and to splashbacks and splashends with adhesive.
- D. Sinks
 1. Install stainless steel sink in plastic laminate tops with epoxy compound to form watertight seal under shelf rim.
 - a. In laboratory and pharmacy fit stainless steel sink with overflow standpipe.
 - b. Install faucets and fittings on sink ledges with watertight seals where shown.
 2. Install molded resin sinks with epoxy compound to form watertight seal with underside of molded resin top.

- a. Install sink with not less than two channel supports with threaded rods and nuts at each end, expansion bolted to molded resin top.
- b. Design support for a twice the full sink weight.
- c. Install with overflow standpipes.
3. Install methyl methacrylic polymer sinks in manufacturers recommended adhesive sealer or epoxy compound to underside of methyl methacrylic polymer countertop.
 - a. Bolt or screw to countertop to prevent separation of bowl and fracture of adhesive sealant joint.
 - b. Install drain and traps to sink.
- E. Faucets, Fixtures, and Outlets:
 1. Seal opening between fixture and top.
 2. Secure to top with manufacturers standard fittings.
- F. Range Tops, Electrical Outlets, Film Viewer:
 1. Set in cutouts with manufacturers gasket sealing joint with top to prevent water leakage.
 2. Install control unit and electric outlets where shown. Seal escutcheon plate at lap if on counter or top to prevent water leakage.

3.2 PROTECTION AND CLEANING

- A. Tightly cover and protect against dirt, water, and chemical or mechanical injury.
- B. Clean at completion of work.

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