SECTION 12 36 00

COUNTERTOPS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies casework countertops with integral accessories.

B. Integral accessories include:

1. Sinks with traps and drains.

2. Mechanical Service fixtures.

1.2 RELATED WORK

A. Color and patterns of plastic laminate: Refer to Room Finish Schedule indicated on the Drawings.

B. DIVISION 22, PLUMBING.

C. DIVISION 26, ELECTRICAL.

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 Society for Testing and Materials (ASTM):

1. G21-96 (R2002) Determining Resistance of Synthetic Polymeric Materials to Fungi

C. Federal Specifications (FS):

1. A-A-1936 Adhesive, Contact, Neoprene Rubber

D. National Electrical Manufacturers Association (NEMA):

1. LD 3-05 High Pressure Decorative Laminates

2. LD 3.1-95 Performance, Application, Fabrication, and Installation of High Pressure Decorative Laminates

PART 2 - PRODUCTS

2.1 MATERIALS

A. Plastic Laminate: NEMA LD 3.

1. Concealed backing sheet: Type BKL.
2. Decorative surfaces:
   a. Flat components: Type GP-HGL.
   b. Post forming: Type PF-HGP.

B. Adhesive:

1. For plastic laminate: FS A-A-1936.
2. For Field Joints:
   a. Fungi resistant: ASTM G-21, rating of 0.

C. 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.

D. Homogenous quartz surfaces material:

1. Material shall have minimum physical and performance properties specified

Performance characteristics: Physical properties data sheet:

Property	Typical Result	Test Procedure
Flexural Strength	>5,300 psi	ASTM D 790
Flexural Modulus	5.3–5.7E6 psi	ASTM D 790
Flexural Elongation ASTM D 790	>0.1%	
Compression Strength (Dry) ASTM C 170	~27,000 psi	
Compression Strength (Wet) ASTM C 170	~24,000 psi	
Hardness	7	Mohs' Hardness Scale
Thermal Expansion ASTM D 696	1.45 x 10-5 in./in./°C	
Gloss (60° Gardner) ANSI Z 124	45–50	
Colorfastness ANSI Z 124.6.5.1	Passes	
Wear and Cleanability ANSI Z 124.6.5.3	Passes	
Stain Resistance (stain 5.2, chemical 5.5, cigarette 5.4 resistances)	Passes	ANSI Z 124.6
Fungal and Bacterial Resistance ASTM G 21 & G 22	No growth	

High Temperature Resistance (356°F)	None to slight effect	NEMA LD 3.3.6*
Boiling Water Resistance NEMA LD 3.3.5*	None to slight effect	
Freeze-Thaw Cycling	Unaffected	ASTM C 1026
Point Impact ANSI Z 124.6.4.2	Passes	
Ball Impact	164 inches	NEMA LD 3.3.8*
Slip Resistance ASTM C 1028	Above 0.80 for textured models	
Static Coefficient of Friction ASTM C 1028 (as received)	0.89/0.61 (wet/dry)	
Static Coefficient of Friction ASTM C 1028 (with renovator)	0.87/0.65 (wet/dry)	
Abrasion Resistance	139	ASTM C 501
Specific Gravity	2.44	ASTM D 792
Density	~2400 kg/m3	
Water Absorption	0.12%	ASTM C 373
Long- and Short-Term	<0.04%	ASTM D 570
Moisture Expansion ASTM C 370	<0.01% on average	
Toxicity Pittsburgh Protocol	Passes, LC50=68–128	
Flammability ASTM E 84, UL 723 (Class I and Class A)	For all colors tested and NFPA 255	
Flame Spread Index	FSI <10 for 3 cm and <15 for 2 cm	
Smoke Developed Index	SDI <50 for 3 cm and <100 for 2 cm	
Nominal Thickness	2 cm and 3 cm	
Nominal Weight	10 lb./ft.2 (2 cm) 15 lb./ft.2 (3 cm)	

* NEMA results based on the NEMA LD 3-2000

2.2 SINKS

A. Stainless steel circular or oval shaped bowl

2.3 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.

H. Drill or cutout for sinks, and penetrations.

1. Accurately cut for size of penetration.

I. Plastic Laminate Countertops:

1. Fabricate plastic laminate on five-ply plywood.

2. Front edge over cabinets not less than 38 mm (1-1/2 inches) thick except where plastic "T" insert is used, not less than 19 mm (3/4 inch) thick.

3. Exposed Surface and edges of decorative laminated plastic or laboratory chemical resistant surface.

a. Use decorative surface tops when noted plastic laminate, for tops 10A, 10B and 10C.

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. 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.

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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