

# **NuLab Furniture Corp. Phenolic Casework Specifications**

## **PART 1 GENERAL:**

### **1.1 INTENT:**

The intent of the following specifications is to provide a general outline of the standard

**NuLab Furniture Corporation Phenolic Resin Casework** product line.

**\* NuLab Furniture Corporation reserves the right to make any specification and/ or warranty changes.**

### **1.2 MATERIALS:**

**NuLab Casework and Countertops** are guaranteed for a period of 1.5 years. Any defects due to improper or abusive use will be excluded. In addition, routine cleaning and housekeeping practices should be performed for safety and to insure long lasting durability, appearance and service.

## **PART 2 MATERIALS:**

**2.1** All casework members are to be constructed of Phenolic Resin in thickness as outlined below.

**2.2** Drawer suspension system to be white epoxy coated steel.

**2.3** Hinges to be heavy duty 5 knuckle institutional type. Hinges to be powder coated and silver in color.

**2.4** All construction fasteners to be zinc plated.

### **2.5 MATERIAL THICKNESS OUTLINE:**

Cabinet sides & bottoms: \_\_\_\_\_ .5"

Door & Drawer fronts: \_\_\_\_\_ .5"

Horizontal rail supports: \_\_\_\_\_ 1"

Drawer bottoms:— .125"

Drawer sides, front & back: \_\_\_\_\_ .375"

Base and wall cabinet backs: \_\_\_\_\_ .125"

Wall cabinet hanging and construction cleat: \_\_\_\_\_ .5"

Casework shelves: \_\_\_\_\_ .625"

## **2.6 COMPONENT MATERIAL COLORS:**

Interior of cabinet backs to be White Phenolic Resin. Remainder of cabinet interior to match exterior. Base and Wall cabinet edges, and support rails to be Black Phenolic Resin.

Door and drawer fronts to be selected from our full compliment of colors. All edges to have a polished black finish.

All interior and exterior colors to be chemically resistant as per our test result.

## **PART 3 CASEWORK CONSTRUCTION:**

**3.1** Each cabinet manufactured, shall be of mortise and tenon construction resulting in a premium style flush overlay unit. Casework shall be rigid and self supporting, capable of interchangeable use in assembly or as a stand alone cabinet. All vertical and horizontal members shall be keyed in, then pheno seal bonded and mechanically fastened. All exposed edges shall be sanded and polished to a satin smooth finish. Underside and toespace shall be enclosed and vermin proof. Base cabinet backs shall be removable and supplied at cupboard units only. Full base cabinet bottoms to be supplied at cupboard units only.

**3.2** Doors shall be squared edged with a slight radius overlay design. Doors shall have a .125" reveal horizontally and vertically as well as a .125" vertical reveal at the ends of the cabinets.

**3.3** Drawer body shall be full box construction. Sides, front and back to be Premium Grade Lock Shoulder construction and screwed together on the sides. Material to be 3/8" Thick White Phenolic Resin. Bottoms of sides, front and back shall be grooved to accept 1/8" Thick White Phenolic Resin bottom. Drawer fronts are finished similar to doors and shall be screwed on from the back. All drawers shall have self-closing action with a 100 LB. load capacity. Drawer stops to be designed to permit easy removal of drawer, yet prevent inadvertent drawer removal. Drawer shall also have a positive open feature allowing for easy loading of drawer.

**3.4** Hinges shall be heavy duty commercial grade. Hinges to be 5 knuckle type. Material of hinges to be powder coated and silver in color. Field adjustment of hinges shall be incorporated in its design.

**3.5** Door and drawer pulls to be brushed aluminum. Pulls to be mounted with two screws secured from inside. Additional style pulls available upon request.

**3.6** Sides of cabinets to be drilled to accept shelf clips. All shelves to be adjustable on 1.25" increments.

**3.7** All base cabinets to have non rusting, adjustable, polystyrene leg levelers attached to the underside of the toespace. Adjusting of levelers shall be from outside the cabinet. The inside bottom of the cabinet shall be free from penetrations, allowing for easy cleaning of the bottom as well as containing any spills and not allowing liquids to fall under the cabinet on to the floor.

**PRODUCT COMPOSITION:**

A flat panel based on thermosetting resins, Phenolic Resin is homogeneously reinforced with cellulose fibers and manufactured under high pressure and temperature. Using a special process, Phenolic Resin is given an integrated, decorative surface made of melamine impregnated paper.

**TECHNICAL PRODUCT DATA:**

Modulus of Elasticity, 1.5 Million psi minimum  
Shear Strength, 2000 psi minimum  
Compressive Strength, 24000 psi minimum  
Weight 93 pounds per cubic foot maximum  
Flammability : Self extinguishing  
Water Absorption 3% maximum  
Use temperature 350F maximum  
Non-porous surface and edges  
Will not support fungus or bacteria  
Uniform load deflection 1/4" maximum per **Table "A"**  
Screw Pull-out Resistance per **Table "B"**

**Table "A"** —Uniform Load (lbs) which causes 1/4" deflection on center ( Shelves not fixed at either end, static load based on modulus of  $2.0 \times 10^6$ ). \*

THICKNESS	12" x 24"	12" x 36"	12" x 48"	24" x 36"
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<b>1/4" (6MM)</b>	35	10	5	20
<b>5/16" (8MM)</b>	85	25	10	50
<b>3/8" (10mm)</b>	170	50	20	100
<b>1/2" (13mm)</b>	370	110	45	220
<b>5/8" (16mm)</b>	690	210	85	410
<b>3/4" (20mm)</b>	1400	400	170	800
<b>1" (25mm)</b>	2600	780	330	1500

\* loads can be affected by temperature, humidity, time & other environmental factors. Users should test shelves in appropriate environment. It is assumed that deflection greater than 1/4" is undesirable aesthetically even though rupture has not occurred.

**TABLE "B"- Screw Pull-out Resistance (lbs)\***

<b>SCREW DEPTH</b>	<b>#2</b>	<b>#4</b>	<b>#6</b>	<b>#8</b>	<b>#10</b>	<b>#12</b>	<b>1/4"</b>	<b>5/16"</b>	<b>3/8"</b>	<b>7/16"</b>	<b>1/2"</b>
<b>1/8" (3MM)</b>	35	50	60								
<b>3/16" (5MM)</b>	55	75	90	110	130						
<b>1/4" (6MM)</b>	75	100	120	150	170	200	230				
<b>5/16" (8MM)</b>	95	130	160	190	210	240	280	350			
<b>3/8" (10MM)</b>	120	150	190	220	260	290	340	420	510		
<b>7/16" (11MM)</b>		180	220	260	300	340	400	490	590	690	
<b>1/2" (13MM)</b>			250	300	340	390	450	560	680	790	900
<b>5/8" (16MM)</b>			310	370	430	490	560	710	850	990	1100
<b>3/4" (20MM)</b>					510	590	680	850	1000	1200	1400

Screw pull-out can be affected by temperature, humidity, time and other environmental factors. In addition, dynamic forces are more severe and

require substantial safety factors. Users should test under worst anticipated conditions.

**Underwriters Laboratories Inc.** fire tests have been conducted on Phenolic Resin Panels under Assignment 91NK583, File R14221 in accordance with the test Standard UL 723 "Tests for Surface Burning Characteristics of Building Materials" comparable to ASTM E84, NFPA-225 and ASA-A2-5.

PANEL THICKNESS	6MM TO 16MM	13MM	16MM TO 25MM
Flame Spread	50	30	25
Smoke Developed	300	85	70

**TEST PROCEDURE:**

The received panel was placed on a flat surface, cleaned with soap and water and blotted dry. The panel was then conditioned for 48 hours at 73 degrees plus or minus 3 degrees F. and 50 plus or minus 5% relative humidity. The panel was then tested for chemical resistance using ( 49 ) different chemical reagents by one of the following methods.

**METHOD A** - Volatile chemicals were tested by placing a cotton ball saturated with reagent in the mouth of a 1 oz. bottle and inverting the bottle on the surface of the panel.

**METHOD B** - Non-volatile chemicals were tested by placing five ( 5 ) drops of the reagent on the surface of the panel and covering with a 25mm. watch glass.

For both of the above methods, the reagents were left on the panel for a period of 24 hours. The panel was then washed off with water, cleaned with detergent and naphtha, and rinsed with deionized water. The panel was then dried with a towel and evaluated after 24 hours at 73 degrees plus or minus 3 degrees F. and 50 plus or minus 5% relative humidity using the following rating system:

- 0-** No detectable change in working surface material.

**1** - Slight detectable change in color or gloss, but no change to the function or life of the working surface.

**2**- Slight surface etching or severe staining.

**3** - Pitting, cratering, or erosion of working surface material an significant deterioration.

***ALL CHEMICAL TESTING WAS PERFORMED BY PROFESSIONAL SERVICES INDUSTRIES SEATTLE, WASHINGTON***

***PROJECT # 578-16038***

<u>TEST #</u>	<u>CHEMICAL REAGENT</u>	<u>TEST METHOD</u>	<u>ATHLON RESULT</u>	<u>TOPLAB RESULT</u>
1	ACETATE, AMYL	A	1	0
2	ACETATE, ETHYL	A	1	0
3	ACETIC, ACID 98%	B	1	0
4	ACETONE	A	1	0
5	ACID DICHROMATE, 5%	B	0	0
6	ALCOHOL, BUTYL	A	0	0
7	ALCOHOL, ETHYL	A	1	0
8	ALCOHOL, METHYL	A	1	0
9	AMMONIUM HYDROXIDE, 28%	B	1	0
10	BENZENE	A	0	0
11	CARBON TETRACHLORIDE	A	0	0
12	CHLOROFORM	A	1	0
13	CHROMIC ACID, 60%	B	2	0
14	CRESOL	A	0	0
15	DICHLOR ACETIC ACID	A	0	0
16	DIMETHYLFORMANIDE	A	2	0
17	DIOXANE	A	0	0
18	ETHYL ETHER	A	0	0
18	FORMALDEHYDE, 37%	A	1	0
20	FORMIC ACID, 90%	B	2	0
21	FURFURAL	A	0	0
22	GASOLINE	A	0	0
23	HYDROCHLORIC ACID, 37%	B	2	0
24	HYDROFLUORIC ACID, 48%	B	2	0
25	HYDROGEN PEROXIDE, 3%	B	2	0
26	IODINE, TINCTURE OF	B	2	0
27	METHYL ETHYL KETONE	A	1	0
28	METHYLENE CHLORIDE	A	1	0
29	MONO CHLOROBENZINE	A	1	0
30	NAPHTALENE	A	0	0
31	NITRIC ACID, 20%	B	3	0

32	NITRIC ACID 30%	B	3	0
33	NITRIC ACID 70%	B	3	3
34	PHENOL, 90%	A	1	0
35	PHOSPHORIC ACID, 85%	B	2	0
36	SILVER NITRATE, SATURATED	B	1	0
37	SODIUM HYDROXIDE, 10%	B	1	0
38	SODIUM HYDROXIDE, 20%	B	1	0
39	SODIUM HYDROXIDE, 40%	B	2	0
40	SODIUM HYDROXIDE, FLAKE	B	2	0
41	SODIUM SULFIDE, SATURATED	B	0	0
42	SULFURIC ACID, 33%	B	2	0
43	SULFURIC ACID, 77%	B	2	0
44	SULFURIC ACID, 96%	B	2	2
45	SULFURIC ACID 77% & NITRIC ACID 70% EQUAL PARTS	B	2	3
46	TOLUENE	A	0	0
47	TRICHLOROETHYLENE	A	1	0
48	XYLENE	A	0	0
49	ZINC CHLORIDE, SATURATED	B	0	0