

SECTION 12 36 53
LABORATORY WORKSURFACES
MANUFACTURED BY DURCON A WILSONART COMPANY
(Durcon Solicor – Chemical Resistance)

Part 1 – General

1.1 Summary

Specifier Note: The following specification contains design options and must be edited to meet project requirements.

A. Section includes:

Durcon Solicor-CR Laboratory Worksurfaces suitable for use on laboratory grade casework and as shelving, backsplashes, wall cladding, drawer fronts, cabinet doors, partitions and other structural components.

B. Related Sections:

1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section [06 4100 - Architectural Wood Cabinets] [-] - Base cabinets.
3. Section [12 3100 - Manufactured Wood Casework] [-] - Base cabinets.
4. Section [12 3200 - Manufactured Metal Casework] [-] - Base cabinets.
5. Section [12 3400 - Manufactured Plastic Casework] [-] - Base cabinets.
6. Section [12 3500 - Specialty Casework] [-] - Base cabinets.

1.2 References

A. Scientific Equipment and Furniture Association (SEFA):

1. SEFA 3 Worksurfaces

B. ASTM International (ASTM):

1. EN 438-2:25 - Standard Test Method for Resistance to Scratch.
2. EN 438-2:16 - Standard Test Method for Resistance to Dry Heat.
3. EN 12721 - Standard Test Method for Resistance to Wet Heat
4. EN 438-2:17 - Standard Test Method for Dimensional Stability in Elevated Temperature.
5. EN ISO 178/ASTM 790-08 - Standard Test Method for Flexural Strength
6. EN ISO 1183/ASTM 792-08 - Standard Test Method for Density
7. ASTM E-84/UL 723 - Standard Test Method for Surface Burning Characteristics

- C. **International Organization for Standardization (ISO) 9001 - Quality Management Systems.**

1.3 Submittals

A. Submittals for Review:

1. Shop Drawings:
 - a. Submit plan, section, elevation and perspective drawings necessary to describe and convey layout, profiles, and product components, including edge conditions, joints, fitting and fixture locations, anchorage, accessories, and finish colors.
 - b. Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on Shop Drawings.
 - c. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.
2. Product Data: Manufacturer's data sheets on each product to be used, including:
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Installation methods.
3. Samples:
 - a. Selection samples: For each finish product specified, submit complete set of color chips representing manufacturer's full range of standard colors.
 - b. Verification samples: For each finish product specified, submit samples representing actual product color; supplied product color and gloss may vary slightly from supplied samples.

B. Quality Control Submittals:

1. Test Reports: Certified test reports or recognized evaluation reports showing compliance with specified performance characteristics and physical properties.

C. Sustainable Design Submittals:

1. **Regional Materials:** Certify products extracted, processed, and manufactured within 500 mile radius of Project site.
2. **Low-Emitting Materials:** Certify volatile organic compound (VOC) content.

D. Closeout Submittals:

1. Maintenance Data:
 - a. Provide maintenance, cleaning, and life cycle information.
 - b. Include recommended cleaning materials and procedures, and list of materials detrimental to Durcon Solicor-CR.

1.4 Quality Assurance

A. Manufacturer Qualifications:

1. Primary products furnished by single manufacturer with minimum [10] [] years [documented] experience in work of this Section.
2. Products manufactured in ISO 9001 certified facility.

B. Installer Qualifications: Minimum [5] [] years [documented] experience in work of this Section.

C. Mockup:

1. Construct worksurface mockup, [6] [] feet wide x full depth.
2. Include worksurface, and trim.] [.]
3. Locate [where directed.] [.]
4. Approved mockup may [not] remain as part of the Work.

1.5 Delivery, Storage and Handling

A. Delivery:

1. Use pallets larger than sheets during transportation.
2. Package materials to prevent damage during shipping and handling.

B. Storage:

1. Use pallets larger than sheets during transportation.
2. Avoid prolonged exposure to direct sunlight.
3. Store in an environment where the temperature is within the range of 50F to 86F (10C to 30C).
4. Store in an environment where the humidity is within the range of 40% to 60% Relative Humidity.
5. Store panels in manufacturer's unopened packaging until ready for installation.
6. Store panels using protective dividers to avoid damage to surfaces.
7. For horizontal storage, store panels on pallets of equal or greater size than panels with protective layer between pallet and panel and on top of uppermost panel.
8. Do not store panels vertically.
9. Do not leave protective film on stored or installed panels for longer than six months.

C. Handling:

1. If protective film is provided, do not remove until panel has been installed.
2. Handle sheets individually to prevent damage from two panels sliding against another.
3. It is acceptable to use a gripping system, such as a suction pad, to lift panels.
4. Remove stickers immediately after installation.
5. Do not use worksurfaces as a workbench, ladder or seating area.

1.6 Coordination and Project Conditions

A. Do not install products under environmental conditions outside manufacturer's limits.

B. Avoid direct exposure of products to sunlight.

C. Do not use worksurfaces as workbench, ladder or seating area.

Part 2 – Products

2.1 Manufacturers

- A. **Contract Documents** are based on products fabricated by Durcon A Wilsonart Company, 206 Allison Drive, Taylor, TX 76574, 512-595-8000, www.durcon.com and manufactured by Wilsonart LLC, 2501 Wilsonart Drive, Temple, TX 76503-6110, www.wilsonart.com.
- B. **Substitutions:** [Under provisions of Division 01.] [Not permitted].

2.2 Materials

A. Durcon Solicor-CR Laboratory Worksurfaces:

Durcon Solicor-CR is a distinctive, chemical resistant surfacing material composed of decorative and core papers impregnated with resins and press over decorative paper core impregnated with special thermosetting resins to achieve an overall thickness up to 1" thick. These sheets are then bonded at pressures and temperatures similar to High Pressure laminates. Durcon Solicor-CR worksurfaces are chemical resistant and suitable for use on laboratory grade casework, available in color-through core in selected designs and finishes. The continuous color core of Solicor-CR provides any application with the look of a solid one-piece worksurface with a core that is color-matched to the top and bottom surfaces.

- B. **Basis of Design:** Drawings and specifications are based on Durcon Solicor-CR worksurfaces.
- C. **Manufacturer:** Wilsonart LLC – 2501 Wilsonart Drive, Temple, TX, 76503
Fabricated by: Durcon A Wilsonart Company - 206 Allison Drive, Taylor, TX 76574

2.3 Material Properties

- A. **Worksurfaces shall be constructed of solid phenolic compact Chemical Resistant panels with a core that matches the color of the two outer surfaces.**
- B. **Thickness shall be as specified on drawings and shall be [3/8" (10mm)] [1/2" (13mm)] [3/4" (19mm)] [1" (25mm)].**
- C. **Colors:** [Durcon Graphite, Durcon Gray].
- D. **Finish:** Matte Sheen

E. Physical Properties:

Test	Method	Unit	Solicor-CR Results
Resistance to Surface Wear	EN 438-2:10	Revolutions	500
Resistance to Scratch	EN 438-2:25	Appearance (Rating)	5 (Best)
Resistance to Dry Heat (180F)	EN 438-2:16	Appearance (Rating)	5 (Best)
Dimensional Stability in Elevated Temperature	EN 438-2:17	Millimeters	0.501
Tensile Strength	ASTM 638-08	CD	16.99 KSI
		MD	24.42 KSI
Lightfastnesses	ISO 4586 (33)	Rating (4 min)	5 (Best)
Resistance to Impact by Large Diameter Ball	EN 438	Millimeters	1981
Resistance to Radiant Heat	ISO 4586 (37)	Seconds	310
Moisture Absorption	EN 438	Percentage	0.81%

F. Fire Rating:

Method	Unit	Results
Time to Ignition	Minutes	0.48
Maximum Flamespread Distance	Feet	6.74
Time to Maximum Spread	Minutes	7.45
Flame Spread Index		25
Smoke Developed Index		20

G. Chemical Resistance:

CHEMICAL (% BY VOL.)	METHOD	RATING
Acetate, Amyl	A	0
Acetate, Ethyl	A	0
Acetone	A	0
Alcohol, Butyl	A	0
Alcohol, Ethyl	A	0
Alcohol, Methyl	A	0
Benzene	A	0
Carbon Tetrachloride	A	0
Chloroform	A	0
Cresol	A	0
Dichloroacetic Acid	A	1
Dimethylformamide	A	0
Dioxane	A	0
Ethyl Ether	A	0
Formaldehyde, 37%	A	0
Furfural	A	1
Gasoline	A	0
Methyl Ethyl Ketone	A	0
Methylene Chloride	A	0
Monochlorobenzene	A	0
Naphthalene	A	0
Phenol, 90%	A	0
Toluene	A	0
Trichloroethylene	A	0
Xylene	A	0

CHEMICAL (% BY VOL.)	METHOD	RATING
Acetic Acid, 98%	B	0
Acid Dichromate, 5%	B	1
Ammonium Hydroxide, 28%	B	1
Chromic Acid, 60%	B	2
Formic Acid, 90%	B	0
Hydrochloric Acid, 37%	B	0
Hydrofluoric Acid, 48%	B	0
Hydrogen Peroxide, 30%	B	0
Iodine, Tincture of	B	2
Nitric Acid, 20%	B	1
Nitric Acid, 30%	B	1
Nitric Acid, 70%	B	1
Phosphoric Acid, 85%	B	0
Silver Nitrate, Saturated	B	0
Sodium Hydroxide, 10%	B	0
Sodium Hydroxide, 20%	B	0
Sodium Hydroxide, 40%	B	0
Sodium Hydroxide, Flake	B	0
Sodium Sulfide, Saturated	B	0
Sulfuric Acid, 33%	B	0
Sulfuric Acid, 77%	B	1
Sulfuric Acid, 96%	B	0
Sulfuric Acid, (77%) & Nitric Acid (70%), equal parts	B	1
Zinc Chloride, Saturated	B	0

2.4 Accessories

- A. Laboratory Shelving: Provide Durcon Solicor-CR laboratory shelving as indicated. Shelving shall be in [3/8" (10mm)] [1/2" (13mm)] [3/4" (19mm)] [1" (25mm)] thickness.
- B. Pegboards (Drying Racks): Provide Durcon Solicor-CR pegboards as indicated. Pegboards shall be in [3/4" (19mm)] [1" (25mm)] thickness.
- C. Reagent Racks: Provide Durcon Solicor-CR reagent racks as indicated. Reagent racks shall be in [3/4" (19mm)] [1" (25mm)] thickness.
- D. Window Sills: Provide Durcon Solicor-CR window sills as indicated. Window sills shall be in [3/4 (19mm)] [1" (25mm)] thickness.
- E. Installation Materials: Provide joint adhesive as required to suit project conditions.

2.5 Fabrication

A. Fabricated tops and accessories in accordance with manufacturer's recommendations, approved Shop Drawings, and SEFA 8.

B. Durcon Solicor-CR Worksurfaces:

1. Thickness:
 - a. [3/8" (10mm)] [1/2" (13mm)] [3/4" (19mm)] [1" (25mm)].
 - b. Check each sheet at factory for required thickness.
 - c. Maximum
2. Warpage:
 - a. Inspect tops for warpage prior to fabrication by placing on true flat surface.
 - b. Maximum allowable warpage: 1/16" (1.5 mm) in 36" (900 mm) span or 3/16" (4.5 mm) in 96" (2400 mm) span.
3. Fabrication:
 - a. Shop fabricate in longest practical lengths.
 - b. Bond joints with highly chemical resistant cement with properties and color similar to base material.
 - c. Provide 1/8" (3 mm) drip groove at underside of exposed edges, set back 1/2" (13 mm) from face.
 - d. Finish exposed edges.
4. Edge treatment: [Standard 1/8" (2 mm) chamfered edge.] [Standard 1/4" (2 mm) radius edge.] [Standard 1/8" (2 mm) chamfered edge with drip groove.] [Standard 1/4" (2 mm) radius edge with drip groove.] [As indicated on Drawings.]
5. Fabricate tops [flat] [with 1/4" (6 mm) raised epoxy resin marine edge] [Flat with 1/4" (6 mm) raised epoxy resin marine edge at sink locations].
6. Corner treatment: exposed corners shall be eased slightly for safety.
7. Back and end splashes:
 - a. Supplied loose for field installation.
 - b. Same material and thickness as worksurfaces.
 - c. [4] [] inches ([100] [] mm) high unless otherwise indicated.
 - d. Back and end splashes: Furnish loose end splashes where worksurfaces abut adjacent construction and locations indicated on Drawings
8. Joints: [As indicated on Drawings.] [Maximum 1/8" (2 mm), bonded with epoxy grout.] [] [].
9. Make joints between two benches level.
 - a. [3/8" (10mm)] [1/2" (13mm)] [3/4" (19mm)] [1" (25mm)].
10. Locate joints away from sinks and over or near supports.
11. Sink cutouts: [As indicated on Drawings.] [Routed for drop-in sink.] [Routed for undermount sink.] [Sink cutout with cover.] [] [].
12. Allowable tolerances:
 - a. Square: Plus or minus 1/64" (0.4 mm) for each 12" (300 mm) of length.
 - b. Location of cutouts and drilled openings: Plus or minus 1/8" (3 mm) of design dimension
 - c. Size of cutouts and drilled openings: Plus 1/8" (3 mm) or minus 0" (0 mm).

C. Epoxy Resin Sinks

1. Mold sinks from thermosetting epoxy resin.
2. Mold interior corners to radius. Slope sink base to drain outlet.
3. Provide 1-1/2" (38 mm) outlet with open ended standpipe; standpipe overflow 2" (50 mm) shorter than depth of sink.
4. Unless otherwise indicated, fabricate sinks of drop-in design supported by upper flange from worksurface.
5. Color: To match adjacent worksurface.

Part 3 – Execution

3.1 EXAMINATION

- A. Do not begin installation until cabinets have been installed.
- B. Confirm that surfaces to receive tops are plumb and level, with maximum deflection of 1/4" (6 mm) in 20' (6 m).

3.2 PREPARATION

- A. Prepare surfaces using methods recommended by manufacturer.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and approved Shop Drawings.
- B. Install tops plumb and level.
- C. Adhere to adjacent surfaces in accordance with manufacturer's recommendations.
- D. Fasten tops to supporting construction with adhesives appropriate for use with adjoining construction and as recommended by manufacturer.
- E. Form field joints using manufacturer's recommended adhesive. Form joints to be inconspicuous and nonporous.
- F. Install [laboratory shelving] [pegboards] [reagent racks] using fasteners and adhesive appropriate for use with adjoining construction and as recommended by manufacturer.

3.2 PROTECTION

- A. Protect installed products until completion of Project.
- B. Touch up, repair, or replace damaged products.

3.2 PREPARATION

- A. Prepare surfaces using methods recommended by manufacturer.

End of Section