PHENOLIC RESIN VS. EPOXY RESIN VS. SOLICOR

COUNTERTOP COMPARISON AND BUYING GUIDE

ChemTops
A OnePointe Solutions Company

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We serve general contractors, architects, and end users with laboratory quality tops and workbenches. Let us know your specifications, including thickness, surface area, material, and color finish, and we'll quickly build you a quote and detailed design drawing.

Pros and Cons

	Pros	Cons
Lab Grade Phenolic Resin	• Short Lead Times • Best-Value Pricing • Easy to cut in the field • Resistant to scratches, chemicals, impact, moisture and heat	• Black edges regardless of top color • Excessive heat will burn through laminate surface
Epoxy Resin	• Solid core all the way through • Heat and moisture resistant • Most commonly used material in specifications • Integral sinks	• Difficult to produce on short lead times • Chalky and difficult to cut in the field • High price point • Heavy material • Scratches easily
Solicor-CR	• Solid core all the way through • Heat and moisture resistant	• Not common in specifications

Chemical and Physical Test Results

CHEMICAL RESISTANT PROPERTIES TESTING

CHEMICAL Tested	TEST method	EPOXY RATING	SPC-CR RATING
Amyl Acetate	A	0	0
Ethyl Acetate	A	0	0
Acetic Acid, 98%	B	0	0
Acetone	A	1	0
Acid Dichromate, 5%	B	0	1
Butyl Alcohol	A	0	0
Ethyl Alcohol	A	0	0
Methyl Alcohol	A	1	0
Ammonium Hydroxide, 28%	B	0	1
Benzene	A	1	0
Carbon Tetrachloride	A	0	0
Chloroform	A	1	0
Chromic Acid, 60%	B	0	1
Cresol	A	0	1
Dichloracetic Acid	A	0	1
Dimethylformamide	A	0	0
Dioxane	A	0	0
Ethyl Ether	A	0	0
Formaldehyde, 37%	A	0	0
Formic Acid, 90%	B	0	1
Furfural	A	1	0
Gasoline	A	0	0
Hydrofluoric Acid, 37%	B	0	0
Hydrofluoric Acid, 48%	B	0	1
Hydrogen Peroxide, 28%	B	0	0
Tincture of Iodine	B	0	1
Methyl Ethyl Ketone	A	0	1
Methylene Chloride	A	0	0
Monochlorobenzene	A	0	1
Naphthalene	A	0	0
Nitric Acid, 20%	B	0	0
Nitric Acid, 30%	B	1	0
Nitric Acid, 70%	B	1	0
Phenol, 90%	A	0	1
Phosphoric Acid, 85%	B	1	0
Silver Nitrate, Saturated	B	0	0
Sodium Hydroxide, 10%	B	1	0
Sodium Hydroxide, 20%	B	1	0
Sodium Hydroxide, 40%	B	1	0
Sodium Hydroxide, Flake	B	1	0
Sodium Sulfide, Saturated	B	2	0
Sulfuric Acid, 33%	B	1	0
Sulfuric Acid, 77%	B	2	0
Sulfuric Acid, 96%	B	3	0
Sulfuric Acid 77%, and Nitric Acid 70%, equal parts	B	3	0
Toluene	A	1	0
Trichloroethylene	A	0	0
Xylene	A	0	0
Zink Chloride, Saturated	B	0	0

After 24-hours exposure, areas are washed with water, then a detergent solution and finally with isopropyl alcohol. Materials are then rinsed with distilled water and dried with a cloth.

0 = No effect, 1 = Excellent, 2 = Good, 3 = Fair

EPOXY PHYSICAL PROPERTIES TESTING

TEST Identification	TEST Description	EPOXY RESULTS [imperial]
ASTM D785-08	Rockwell Hardness	110 [M scale]
ASTM D696-03	Linear Thermal Expansion	1.18x 10^{-5} in/in°F
ASTM D3801-00	Burning Characteristics Sample as Received	30 seconds max burning time
ASTM D3801-00	Burning Characteristics Samples as Received	41 seconds max burning time
ASTM D635-06	Fire Resistance	Self-extinguishing
ASTM D570-98	Water Absorption	0.008% [after 24 hours]
ASTM D792-00	Density	133 lb/ft^3
ASTM D695-02	Compressive Strength	33.5 kpsi
ASTM D648-07	Heat Distortion Temperature	380°F
ASTM E84-06	Fire Resistance - Flame Spread Index	0.29 in
ASTM E84-06	Fire Resistance - Smoke Developed Index	0.88 in
ASTM D790-07	Flexural Strength	14.9 kpsi

SOLID PHENOLIC COMPACT - CHEMICAL RESISTANCE GRADE PHYSICAL PROPERTIES TESTING

TEST Identification	TEST Description	SPC-CR RESULTS
EN 438-2:10	Resistance to Surface Wear	≥150 Revolutions (Inital Point)
EN 438-2:21	Resistance to Impact	0.4 Indention Diameter (mm)
		No Cracks or Scoring
EN 438-2:25	Resistance to Scratch	5 Rating (Based on Load)
EN 438-2:16	Resistance to Dry Heat (320°F)	5 Appearance*
EN 12721	Resistance to Wet Heat (212°F)	5 Appearance*
EN 438-2:12	Resistance to Immersion in Boiling Water	5 Appearance*
		0.4 Mass Increase %
		1.9 Thickness Increase %
EN 438-2:17	Dimensional Stability in Elevated Temperature	0.05 Longitudinal (Parallel) %
		0.05 Transversal (Perpendicular) %
EN 438-2:26	Resistance to Staining (Appearance Rating)	5 Acetone
		5 NaOH
		5 Hydrogen Peroxide (H_2O_2 3%)
ASTM G53/ EN 4382:27	Resistance to Color Change	5 Appearance* (Grey Wool Scale)
EN 438-2:24	Resistance to Crazing	5 Appearance*
ASTM 638-08/ EN ISO 178	Modulus of Elasticity	≥1.85e^6 psi
ASTM 790-08/ EN ISO 178	Flexural Strength	≥2.87e^4 psi
ASTM 638-08/ EN ISO 527-2	Tensile Strength	≥2.71e^4 psi
ASTM 792-08/ EN ISO 1183	Density	≥86.15 lbs/ft^3

***Appearance Rating 5 = No Change**

Solicor-CR Test Results

chemical testing results

CHEMICAL (% BY VOL.)	METHOD	RATING
Acetate, Amyl	A	0
Acetate, Ethyl	A	0
Acetic Acid, 98%	B	0
Acetone	A	0
Acid Dichromate, 5%	B	1
Alcohol, Butyl	A	0
Alcohol, Ethyl	A	0
Alcohol, Methyl	A	0
Ammonium Hydroxide, 28%	B	1
Benzene	A	0
Carbon Tetrachloride	A	0
Chloroform	A	0
Chromic Acid, 60%	B	2
Cresol	A	0
Dichloroacetic Acid	A	1
Dimethylformanide	A	0
Dioxane	A	0
Ethyl Ether	A	0
Formaldehyde, 37%	A	0
Formic Acid, 90%	B	0
Furfural	A	1
Gasoline	A	0
Hydrochloric Acid, 37%	B	0
Hydrofluoric Acid, 48%	B	0
Hydrogen Peroxide, 30%	B	0

CHEMICAL (% BY VOL.)	METHOD	RATING
Iodine, Tincture of	B	2
Methyl Ethyl Ketone	A	0
Methylene Chloride	A	0
Monochlorobenzene	A	0
Naphthalene	A	0
Nitric Acid, 20%	B	1
Nitric Acid, 30%	B	1
Nitric Acid, 70%	B	1
Phenol, 90%	A	0
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
Toluene	A	0
Trichloroethylene	A	0
Xylene	A	0
Zinc Chloride, Saturated	B	0

KEY | 0 = No effect, 1 = Excellent, 2 = Good, 3 = Fair

Chemical resistance tests are performed in accordance with the Scientific Equipment and Furniture Association (SEFA) recommended practices for laboratory worksurfaces.

Lab Grade Phenolic Resin

Chemical Resistant Solid Phenolic Compact (SPC-CR), commonly referred to simply as phenolic resin or lab grade phenolic resin, is one of the most **durable, cost-effective, and aesthetic** surfaces for heavy-duty lab workbenches and casework countertops.

Phenolic resin is ideal in various heavy-duty scientific applications, healthcare lab settings (e.g. urology and hematology labs), universities and science classrooms, and wastewater treatment plants. This material is also light weight in comparison to epoxy resin.

Features

- Shorter Lead Times than Epoxy
- Impact & Moisture Resistant
- Bacteria & Microbe Resistant
- Corrosion Resistant

Phenolic Resin (SPC)

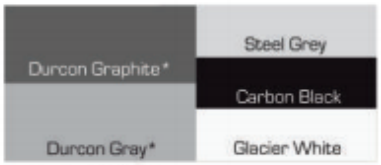
SPC GRADES

Chemical Resistance Grade SPC-CR includes a specially Electron Beam Cured (EBC) layer, providing industry leading resistance to many acids, solvents, reagents & cleaning agents.
Note: not available in 4' x 8' or 4' x 10' sheets.

APPLICATIONS

- Laboratory settings
- Reagent shelving
- Prep room worksurfaces
- Mobile carts

COLORS



**color-match Epoxy*

Fire-rated SPC is thick Standard Grade with fire retardant properties, used where building codes require a rating of **Class A (or 1).**

- Elevator cabs
- Stairwells
- Hospitals
- Airports
- Marine/Aerospace

Available colors for both Fire-rated and Standard Grades:

In addition to our three signature colors above, Fire-rated and Standard grades are available in 100s of other options.

*To view the full selection, visit www.wilsonart.com/compact, select a color option, then look for **Finish 60** under the Pattern Availability section. Finish 60 indicates that a color is available in both SPC Fire-rated & Standard grades.*

If you are not sure about a specific color or need help, please contact a Customer Service associate for clarification.

Standard Grade SPC is a surfacing solution designed for *all-around* use, available in a selection of smart colors, plus the option for custom colors of graphic designs.

- Partitions
- Cabinetry
- Assembly stations
- Doctor's offices

THICKNESS & SIZES

Thicknesses available:
0.25" 0.375" 0.5"
0.75" 1.0"
Samples available in 1.0"

Sheets sizes available:
4' x 8' 4' x 10' (Standard & Fire-rated only)
5' x 8' 5' x 10' 5' x 12' (All grades)

Epoxy Resin

Epoxy resins are thermoset polymers characterized by high heat, chemical, and solvent resistance. Epoxy resins can be applied to a broad range of substrates and materials, making epoxy resin an extremely versatile option and helping to add to its popularity.

For use in laboratory countertop manufacturing, epoxy resin has been touted for its versatility and relative ease of use as compared to other materials with similar levels of heat and chemical resistance.

Applications

- Classrooms
- Research Areas
- Highly Corrosive Environments
- High Moisture Environments

Key Features

- Durable
- Heat Resistant
- Long-Lasting
- Versatile
- High Chemical Resistance

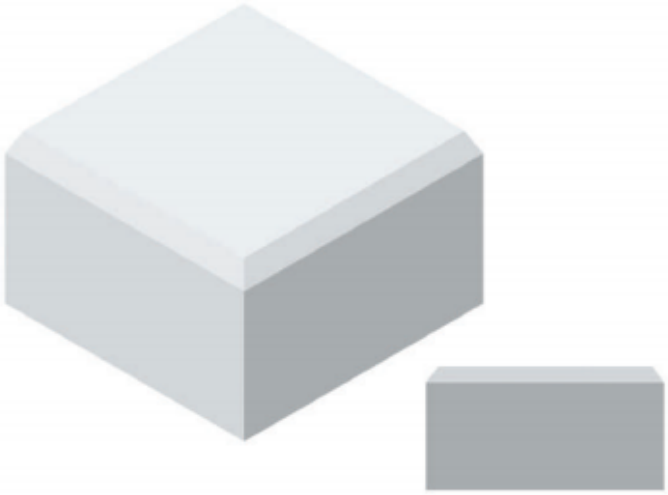
Product Configurations

Marine Edge Containment Tops - Drain Tops - Balance Tables - Isotopes - Isopads - DropIn and Undermount Sinks - Wall Mount, Utility, and Specialty Sinks - ADA Compliant Sinks

Epoxy Resin

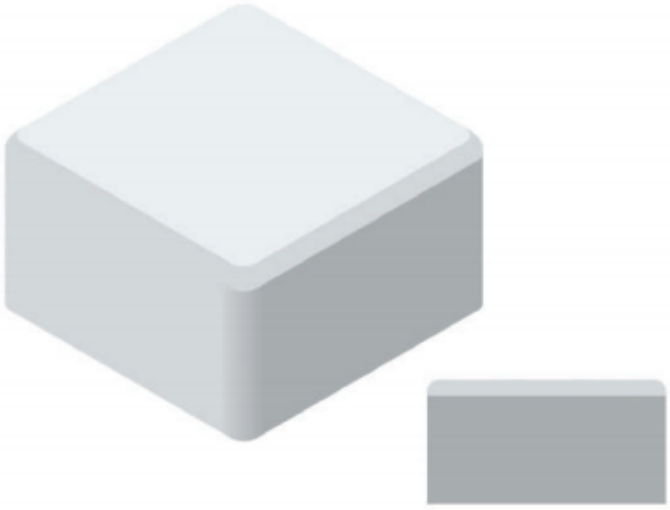
BEVEL EDGE FINISH

One inch thick Black Onyx ClassicTop worksurfaces with machine beveled edges are the laboratory industry global standard. Bevel edges are available in seamless lengths up to 96" [2438mm] on our ClassicTop worksurfaces and provide the greatest flexibility for many applications.



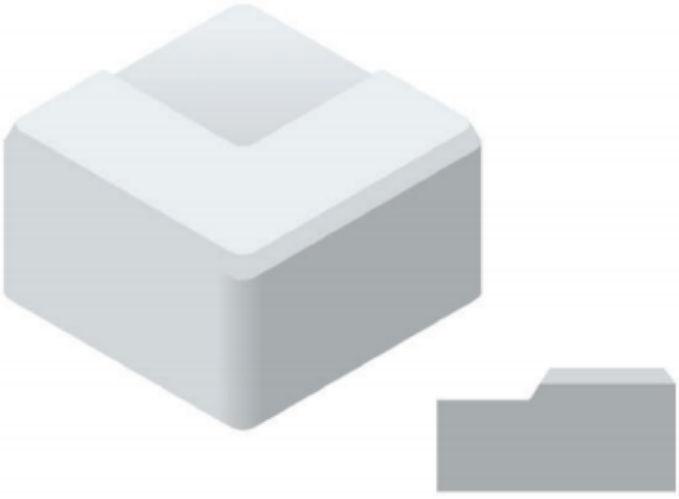
RADIUS EDGE FINISH

Also popular on ClassicTop worksurfaces is the 1/4" [6mm] radius edge finish option. This finish is fabricated to the same exacting standards as our bevel edge finish, but features eased corners that provide additional safety and comfort for laboratory users.



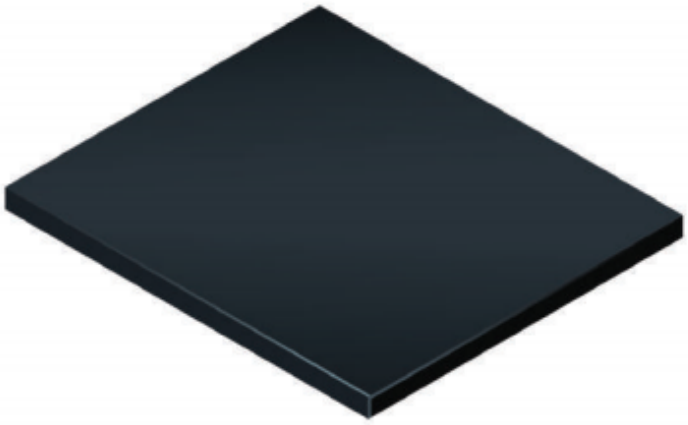
MARINE EDGE FINISH

Marine edge finish worksurfaces are recommended for areas where liquid containment is a priority. These 1/4" [6mm] dished worksurfaces help protect casework flooring and lab users by containing spills on the worksurface.

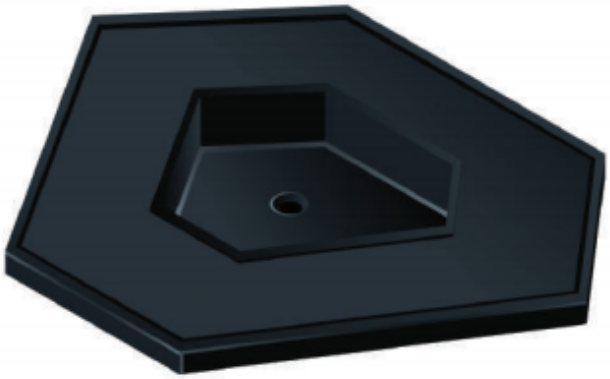


Epoxy Resin

CLASSICTOP WORKSURFACES



TRIFACIA WORKSTATIONS



CLASSICTOP WORKSURFACES

ClassicTop worksurfaces are recommended for classrooms, laboratories and production facilities where seating or reconfiguration is required.

Available with machine beveled or radiused edges, ClassicTop worksurfaces are available in any size up to 96"x 72" [2438 x 1829mm]. ClassicTop worksurfaces can be used for custom size and shape requirements, or when classic styling is an aesthetic preference.

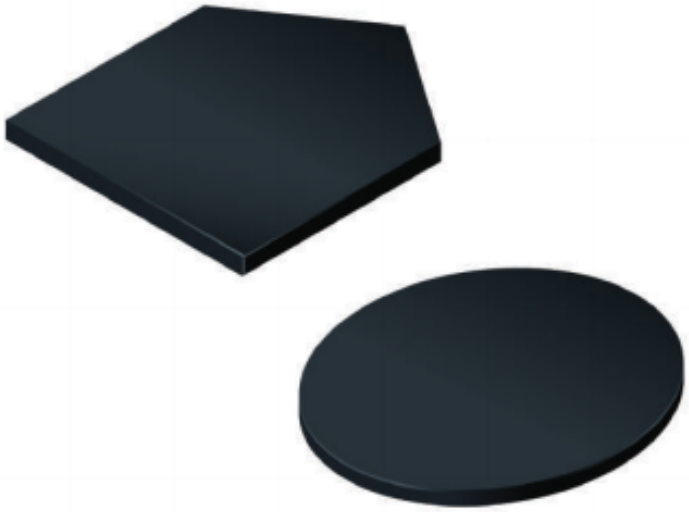
TRIFACIA WORKSTATIONS

Trifacia tops are marine edge workstations that provide convenient access for up to three table worksurfaces. Trifacia epoxy resin sinks are also available.

Epoxy Resin

OCTAGONAL WORKSTATIONS

SPECIALTY & MOLDED SHAPES



OCTAGONAL WORKSTATIONS

Octagonal workstations are designed to accommodate multiple users. Tailored for educational and training purposes, this innovative design enables larger groups of students or technicians to gather around and view a single device or demonstration at the workstation.

Offered with a bevel, radius or marine edge finish, the octagonal workstation is available as a single piece, or with an epoxy resin trough or sink.

SPECIALTY & MOLDED SHAPES

Specialty worksurface shapes are available for all types of teaching and laboratory environments. Quadrilaterals, hexagons and other shapes are molded in one seamless piece and ship from Durcon ready for installation, with or without sinks or troughs.

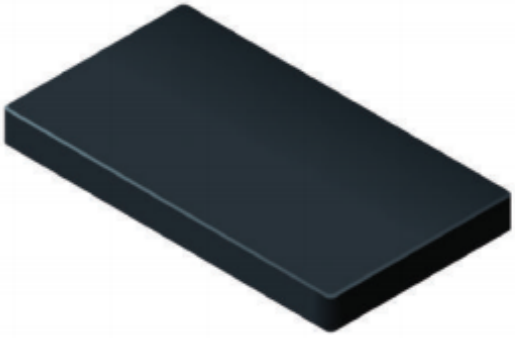
Many additional custom shapes - even asymmetrical pieces and belly cuts - can be fabricated to specification. With custom shapes, we recommend submitting drawings for quotation.

Epoxy Resin

FUME HOOD BASES

BALANCE TABLES

ISOTOPS



FUME HOOD BASES

Durcon epoxy resin Fume Hood Bases provide a highly durable, chemical and heat resistant worksurface for the harshest of laboratory environments.

Available for most brands of fume hood cabinets, Durcon Fume Hood Bases are seamlessly molded up to 98" [2489mm] long and are surrounded by a 3/8" [10mm] integrally-molded containment rim designed to ease cleanups and prevent chemical spills from damaging casework.

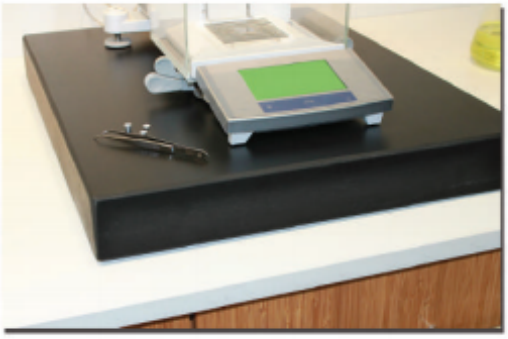
BALANCE TABLES

Epoxy resin Balance Tables provide superior stability for highly calibrated equipment. The top and legs are solid 2-1/2" [64mm] thick molded epoxy resin worksurfaces with a galvanized steel lateral support beam for additional strength and rigidity. Rubberized vibration reduction pads are also included to suppress floor vibrations and increase instrument accuracy. Balance Tables stand 30" [762mm] tall. Nominal worksurface dimensions are 35" x 24" [889mm x 610mm].

ISOTOPS & ISOPADS

IsoTops are 2-1/2" [64mm] thick countertop sections that provide the stability of a balance table on a benchtop, allowing easy access to adjoining surfaces and utilities. IsoTops are thicker tops that install in-line with other epoxy worksurfaces. Due to the thickness and weight of these tops, special considerations should be taken into account to ensure adequate cabinet support strength.

Isopads are mobile 2-1/2" x 18" x 22" epoxy resin pieces that can be placed around the lab to provide vibration damping and stability in any location needed.



SOLICOR-CR

Solicor-CR is a color-through, lab-grade worksurface solution perfectly suited for both vertical and horizontal applications in environments where chemical resistance, durability and aesthetics are top priorities.

This includes laboratories at the K-12 and university education levels, research & development facilities for the government, medical and pharmaceutical industries, and other segments such as healthcare, hospitality and retail.

Applications

- Laboratories in K-12 & Universities
- R&D Facilities
- Healthcare & Hospitality
- Medical & Pharmaceutical

Key Features

- Color-through
- Lightweight
- Cost-effective
- Lab-ready & Ease of Install
- Impact, Moisture & Scratch Resistant
- Chemical & Moisture Resistant
- Color-matches Durcon Epoxy, Greenstone & SPC

Thickness

- 0.375"
- 0.5"
- 0.75"
- 1.0"

Edge Finishes

- 1/8" Bevel
- 1/4" Radius
- Straight Edge

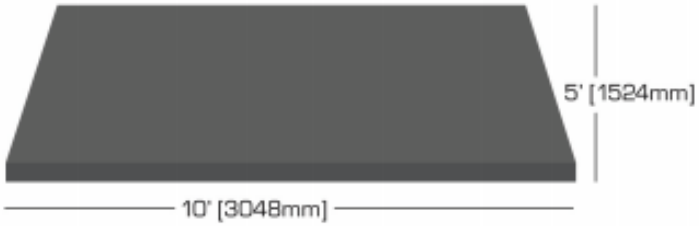
Sheet Size

5' x 10'

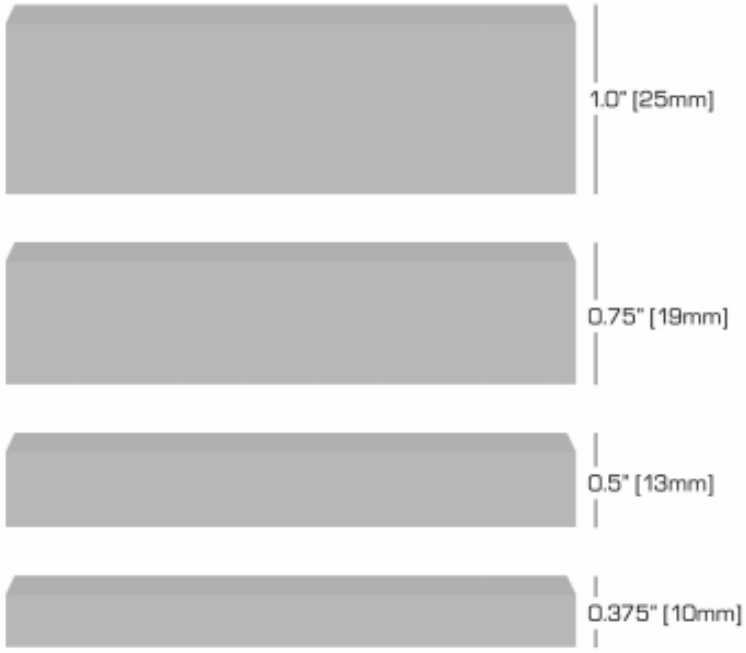
SOLICOR-CR worksurfaces

Size | Thickness | Weight | Color

SHEET SIZE AVAILABLE IN 5' X 10'



THICKNESSES AVAILABLE IN 1.0", 0.75", 0.5" & 0.375"



INITIAL COLOR AVAILABILITY IN GRAPHITE & GRAY

GRAPHITE **GRAY**

LIGHTWEIGHT & EASY TO INSTALL

One of the most advantageous aspects of Solicor-CR is its weight compared to other lab-grade worksurface materials. Solicor-CR boasts a much lower weight density in addition to its attractive color-through aesthetic and chemical resistant properties. Also it is a dream to install.

7.4
lbs per square foot

COLOR-THROUGH, COLOR-MATCH, CHEMICAL RESISTANT WORKSURFACES

The Solicor-CR initial color offering includes our popular Graphite and Gray, both created specifically to match the Graphite and Gray seen on Durcon's full family of lab-ready materials. This opens up a new world of laboratory design, with color-matched surfaces in all of the following Durcon product lines:

EPOXY RESIN
GREENSTONE
SOLID PHENOLIC COMPACT (SPC)
SOLICOR-CR

Thank You

Give us a call at (866) 456-1185 for help selecting the right materials for your project.

Price Match | Short Lead Times | Fast Quotes

ChemTops
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