

carbon**zero**hpl

Lab Grade

TECHNICAL DATA SHEET

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Lab Grade

Composition

Lab Grade is manufactured with high technology thermostable resin and, special decorative papers and Kraft papers with phenolic resin which forms the laminate support. All these materials are subjected to a high specific pressure (100 kg/cm²) and 135°C (275°F). Once the press cycle is finished, the laminate is trimmed following the established nominal dimensions and sanded to provide a bigger adherence when the adhesive is applied over the wooden surface.

Recommended Applications

Lab Grade has a higher Chemical resistance than that of standard grade laminates. It is recommended for applications in chemical and clinical laboratories, darkrooms, hospital furniture, etc. It is also ideal for vertical or horizontal applications where it is required that appearance and durability remain the same, when being exposed to chemical agents such as strong alkalis, corrosive salts, oxidant agents, organic solvents, strong acids, etc.

Basic Limitations

Lab Grade is designed for interior uses only, it is not meant to be structural material, it does not admit high humidity or high temperature, exceeding 135°C (275°F). Lab Grade should not be exposed to intense and continue sunlight. Due to the material that gives the laminate its chemical resistance, the tone in the designs may vary slightly from those other CarbonZero products. Ask for the approved line for this kind of applications and their samples to make color selections. Please contact our sales representatives for further assistance.

product identification							
LAMINATE TYPE	NOMINAL THICKNESS mm (inches)	SIZES				Finishes	
		inches (in)				Gloss	Matte
		4 x 8	4 x 10	5 x 8	5 x 12		
		meters (m)					
		1,22 x 2,44	1,22 x 3,06	1,53 x 2,44	1,53 x 3,66		
Horizontal Standard	1.20 (0.048)	X	X	-	-	-	X
Horizontal Postforming	1.00 (0.039)	X	X	-	-	-	X
Vertical Postforming	0.70 (0.028)	X	X	-	-	-	X

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Useful Information

1. Conditioning and storing of Lab Grade is very important, they should be stored horizontally, at a regular temperature (max. 30°C 86°F) and relative humidity (max. 60%), in a dry and drafty place.

2. For manual, low press applications of Lab Grade, we strongly recommend the use of contact adhesive in a solvent/-neoprene base. Use PVA adhesive (Polyvinyl Acetate) for industrial applications, it does not react with heat and also has a high humidity resistance. To get a good adherence, we suggest you to use a minimum of 100-140 g/m² PVA adhesive and a pressure of 2 k/cm². In case of having any waste of adhesive in the laminate while finishing the application, remove it with a soft cloth and organic solvent or a mixture of 50:50 alcohol-organic solvent

3. To avoid warping in the surface coated with CarbonZero Lab Grade, we recommend the use of backer laminate on the back side of the wooden surface.

4. Lab Grade should be cut with circular saws at a 8-2 m/min. and 3,000-5,500 r.p.m. speed, the tooth of the saw must be plane trapezoidal diamond with alternating geometry. For routed jobs, a cylindrical miller of minimum 12,000 r.p.m. must be used.

5. To perforate Lab Grade use a tungsten-carbide drill bit with bicular end at 10,000 r.p.m.. The selected drill bit must be 0.002 inches (0.05 mm.) bigger than

6. CarbonZero Lab Grade is only available in Matte finish. We recommend the use of textured laminates in horizontal surfaces such as laboratories counters, work surfaces, etc. To avoid damages on the laminate surface, a protection element as a wooden or ceramic piece must be used before doing any kind of cut labor over it. Also use a similar protection element on the laminates to put hot objects with temperature exceeding 135°C(275°F).

7. When postforming Lab Grade is required, first check the instruction in our manual for postforming.

8. For stain cleaning or maintenance of Lab Grade, use water, soft non-abrasive detergents and nylon brushes. Stubborn stains may require the use of hypochlorite bleach dissolved in water. Grease stain should be cleaned with a soft cloth and organic solvent or a mixture of 50:50 alcohol-organic solvent, the laminate shall be free of stain without any deterioration of its color tone or its original design.

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mechanical properties							
METHOD	PROPERTY	FIBER ORIENTATION	UNITS	2 - 6 mm7	NEMA LD.3 CGS	25 mm	NEMA LD.3 CGS
ASTM D 790	FLEXION RESISTANCE		PSI max.	41317	18000	30759	18000
		Transversal	PSI max.	39194	12000	28945	12000
ASTM D 790	FLEXION UNIT	Longitudinal	PSI max.	2,04 X 10 ⁶	1,6 x 10 ⁶	2,0 x 10 ⁶	1,6 x 10 ⁶
		Transversal	PSI max.	1,72 X 10 ⁶	1,4 x 10 ⁶	1,87 x 10 ⁶	1,4 x 10 ⁶
ASTM D 638	TENSION RESISTANCE	Longitudinal	PSI max.	20062	18000	25598	18000
		Transversal	PSI max.	17084	12000	24216	12000

Analysis Certificated #4227-729830

Chemical Resistance

Lab Grade is exposed for a 16 hour period, (Stainresistance test specified by EN-438 part 2, # 26 Norm) to the chemical agents listed ahead. After this time of exposure, the laminate is cleaned with abundant water and a soft cloth, once dried and cleaned, a visual inspection and grading proceeds under the following criteria:

Grade 5: No visible changes

Grade 4: Slight, smooth change in the brightness or color only visible from certain angles

Grade 3: Moderate change in the brightness or color Grade

2: Severe change in the brightness or color Grade

1: Surface destruction and blistering

Limited Warranty

CarbonZero warrants that its products are reasonably free of defects, and when properly used, will comply with normal deviations to related manufacturing specifications. This warranty will be extended only to the original buyers for a period of one (1) year from the purchase date. It excludes damage resulting from accidents, abuse or lack of care, improper use and/or any alteration. Since CarbonZero laminates have a wide range of applications, without the possibility of control over the manufacturing of the end product, CarbonZero does not assume obligations or liabilities arising from the furnishing, sale, installation or repair, use or subsequent sale of any product, to any person or entity. The contents of this brief correspond to common knowledge of High Pressure Laminates. CarbonZero offers this information solely to provide suggestions for your application. Since it's impossible to anticipate all variations in actual end use conditions, no warranties or liabilities can be assumed by CarbonZero in connection to the use of this information. CarbonZero believed the information and recommendations provided herein to be accurate at the time of preparation or obtained from sources believe to be generally reliable. Carbonzero can modify it without prior notice.

AGENT	CHEMICAL SUBSTANCE	GRADE
1	Nitric Acid 65%	2
2	Sulphuric Acid 96%	2
3	Clorhidric Acid 37%	5
4	Acetone	5
5	Toluene	5
6	Clorophorm	5
7	Phenol 90%	5
8	Potash	5
9	Sodium Hipochlorite 13%	5
10	Hydrogen Peroxide at 5%	5
11	Gasoline	5
12	Potassium Permanganate	2
13	Silver Nitratum 1%	5
14	Glacial Acetic Acid 99%	5
15	Dimethylformamide	5
16	Amilo Acetate	5
17	Methylene Chloride	5
18	Amonium Hidroxid 25%	5
19	Solid Iodine 100%	2
20	Phenoltaleine 1%	5
21	Metile Red 1%	5
22	Metile Blue 1%	5
23	Methanol	5
24	Ethanol	5
25	Ferric chloride 10%	5
26	Sodium chloride 10%	5
27	Chromic acid 60%	5
28	n-Hexane	5
29	Boric acid	5
30	Ethyl acetate	5
31	Trichloroethylene	5
32	Tetrahydrofurane	5
33	Formic acid 85%	5
34	Phosphoric acid 85%	5
35	Sodium Hydroxide 10%	5
36	Sodium Hydroxide 20%	5
37	Sodium Hydroxide 40%	5

Stain resistance test according to international standards.
EN-438 part 2 clause 26. Exposure time: 24 hours.