

## LOW DENSITY LAMINATES WITH GELCOAT

### MAT GLASS FIBRE

PRODUCT CODE	COMPOSITION	NOMINAL THICKNESS	
LD 300	Mat 300 g/m <sup>2</sup>	mm 1.3	inch 0.051
LD 400	Mat 400 g/m <sup>2</sup>	mm 1.5	inch 0.059
LD 450	Mat 450 g/m <sup>2</sup>	mm 1.6	inch 0.063
LD 500	Mat 500 g/m <sup>2</sup>	mm 1.7	inch 0.067
LD 600	Mat 600 g/m <sup>2</sup>	mm 2.0	inch 0.079
LD 700	Mat 700 g/m <sup>2</sup>	mm 2.2	inch 0.087
LD 800	Mat 800 g/m <sup>2</sup>	mm 2.5	inch 0.098
LD 900	Mat 900 g/m <sup>2</sup>	mm 2.7	inch 0.106
LD 1000	Mat 1000 g/m <sup>2</sup>	mm 3.0	inch 0.118

### MECHANICAL PROPERTIES

Mechanical properties	Unit of measure	LD 300	LD 400	LD 450	LD 500	LD 600	LD 700	LD 800	LD 900	LD 1000
Nominal thickness	mm	1.3	1.5	1.6	1.7	2.0	2.2	2.5	2.7	3.0
	Inch	<b>0.051</b>	<b>0.059</b>	<b>0.063</b>	<b>0.067</b>	<b>0.079</b>	<b>0.087</b>	<b>0.098</b>	<b>0.106</b>	<b>0.118</b>
Glass content	%	18.7	21.6	22.84	23.8	24.5	25.9	26.2	27.3	27.4
Barcol hardness ASTM D 2583	°Barcol	30-20	30-20	30-20	30-20	30-20	30-20	30-20	30-20	30-20
Tensile strength ISO 527-4	MPa	51	61	65	70	70	73	73	76	76
Tensile modulus ISO 527-4	GPa	4.6	5.5	5.6	5.7	5.7	5.9	6.0	6.0	6.0
Elongation at break ISO 527-4	%	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
IZOD impact strength	kJ/m <sup>2</sup>	38	43	46	48	48	53	56	61	64
Weight	kg/m <sup>2</sup>	1.6	1.85	1.97	2.1	2.45	2.7	3.05	3.3	3.65
	Lb/sf	<b>0.33</b>	<b>0.38</b>	<b>0.40</b>	<b>0.43</b>	<b>0.50</b>	<b>0.55</b>	<b>0.62</b>	<b>0.67</b>	<b>0.75</b>
Density	gr/cm <sup>3</sup>	1.23	1.23	1.23	1.23	1.22	1.22	1.22	1.22	1.22
Thermal expansion coefficient	10 <sup>-6</sup> /°K	24 - 28	24 - 28	24-28	24 - 28	24 - 28	24 - 28	24 - 28	24 - 28	24 - 28

The results of mechanical tests on composite materials typically exhibit some scatter; for this reason the data here indicated have to be considered only as a guide

## LOW DENSITY LAMINATES WITH GELCOAT

### MAT + WOVEN ROVING

PRODUCT CODE	COMPOSITION	NOMINAL THICKNESS
LD 30/30	Mat 300 g/m <sup>2</sup> + Woven Roving 300 g/m <sup>2</sup>	mm 1.5
LD 30/50	Mat 300 g/m <sup>2</sup> + Woven Roving 500 g/m <sup>2</sup>	mm 1.8
LD 40/30	Mat 400 g/m <sup>2</sup> + Woven Roving 300 g/m <sup>2</sup>	mm 1.8
LD 40/50	Mat 400 g/m <sup>2</sup> + Woven Roving 500 g/m <sup>2</sup>	mm 2.1
LD 50/30	Mat 500 g/m <sup>2</sup> + Woven Roving 300 g/m <sup>2</sup>	mm 2.1
LD 50/50	Mat 500 g/m <sup>2</sup> + Woven Roving 500 g/m <sup>2</sup>	mm 2.3
LD 60/30	Mat 600 g/m <sup>2</sup> + Woven Roving 300 g/m <sup>2</sup>	mm 2.4
LD 60/50	Mat 600 g/m <sup>2</sup> + Woven Roving 500 g/m <sup>2</sup>	mm 2.7
LD 80/30	Mat 800 g/m <sup>2</sup> + Woven Roving 300 g/m <sup>2</sup>	mm 2.9

### MECHANICAL PROPERTIES

Mechanical properties	Unit of measure	LD 30/30	LD 30/50	LD 40/30	LD 40/50	LD 50/30	LD 50/50	LD 60/30	LD 60/50	LD 80/30
Nominal thickness	mm	1.5	1.8	1.8	2.1	2.1	2.3	2.4	2.7	2.9
	inch	<b>0.059</b>	<b>0.071</b>	<b>0.071</b>	<b>0.082</b>	<b>0.082</b>	<b>0.090</b>	<b>0.094</b>	<b>0.106</b>	<b>0.114</b>
Glass content	%	30	33.3	30.4	33.3	30.8	33.3	30	32.3	30.6
Barcol hardness ASTM D 2583	°Barcol	30-20	30-20	30-20	30-20	30-20	30-20	30-20	30-20	30-20
Tensile strength ISO 527-4	MPa	86	100	89	98	90	100	92	94	92
Tensile modulus ISO 527-4	GPa	7.3	8.3	7.3	7.9	7.1	7.7	7.0	7.5	7.0
Elongation at break ISO 527-4	%	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
IZOD impact strength ISO 180	kJ/m <sup>2</sup>	56	62	67	73	69	80	71	81	83
Weight	kg/m <sup>2</sup>	2	2,4	2,3	2,7	2,6	3,0	3,0	3,4	3,6
	lb/sf	<b>0.41</b>	<b>0.49</b>	<b>0.47</b>	<b>0.55</b>	<b>0.53</b>	<b>0.61</b>	<b>0.61</b>	<b>0.7</b>	<b>0.74</b>
Density	gr/cm <sup>3</sup>	1.33	1.33	1.28	1.29	1.24	1.3	1.25	1.26	1.24
Thermal expansion coefficient	10 <sup>-6</sup> / °K	22 - 26	22 - 26	22 - 26	22 - 26	22-26	22 - 26	22 - 26	22 - 26	22 - 26

The results of mechanical tests on composite materials typically exhibit some scatter; for this reason the data here indicated have to be considered only as a guide.

## LOW DENSITY LAMINATES WITH GELCOAT

### TOLERANCES

**Dimension:** Panels are available any size up to 106" wide and up to 200' long. Dimensions have to be specified on purchased order subject to the following tolerances:

- Thickness  $\pm 10\%$
- Width  $\pm 1/8"$  (3.2 mm)
- Length  $\pm 1/4"$  (7 mm)
- Squareness  $\pm 1/8"$  (3.2mm) in 48" (1.2m) of width

**Color :** Vetroresina LLC can match virtually any color. A master sample of the color to match will be required for accuracy. The master sample will be measured and it will become the master sample on which we will calculate the **Delta E** of tolerance accepted.

### STORAGE REQUIREMENTS

Keep the laminates dry, store panels indoors in a well ventilated and dry location.

Exposure to moisture for long time may cause discoloration.

Careful handling during the manufacturing process is important. Avoid excessive clamping, dropping and scraping.

### PRODUCT USE INFORMATION

Use the laminates at a room temperature of around 68F (20C), if the material is stored in a cold area, we recommend leaving the laminates at room temperature for 24 hrs before using.

**Warning:** managing the laminate where the temperature rapidly changes below the freezing point may cause gelcoat failure even if the material is exposed to normal handling stress.

**Disclaimer:** Vetroresina does not make any claims to the combustibility rating of the product listed on these data sheets. Non intended for interior appliances.

Recreational Vehicle Products manufactured by Vetroresina will provide a clean, aesthetically pleasing finished installation. However, by nature fiberglass reinforced plastic panels may occasionally have small areas that are aesthetically unacceptable for use. Panels should be inspected on site prior to installation or laminating and original Vetroresina code number must be removed retained or copied. If any portion of material will not provide an acceptable appearance Vetroresina should be notified at once. Please report the non conforming product providing the product ID code. Upon verification of unacceptability Vetroresina will replace or refund the purchase price of the non conforming product.

### FABRICATING RACCOMANDATION

**Gluing:** The Vetroresina laminate comes with a microsanded or calibrated back surface free of dust which makes it very suitable for gluing and won't change the wettability properties. The Dyne Test is > 54.

**Drilling:** use high speed drill bit when drilling or hole saw.

**Cutting:** It's better to cut or drill the laminate from the gelcoated side using a carbide-tipped or carborundum saw blade.

**Safety:** it's suggested to always wear protective eye goggle, cover nose and mouth with an air filter mask, and cover exposed skin when cutting.

**Stapling:** standard pneumatic stapler

**Cleaning instruction:** use only mild soap and warm water.

#### **Non warranty:**

*We believe all information given is accurate. It is offered in good faith, but without guarantee. Since conditions of use are beyond our control all risks are assumed by the users.*