

## LAMINATES WITH MAT GLASS FIBRE

PRODUCT CODE	COMPOSITION	NOMINAL THICKNESS	
G 300	Mat 300 gr/m <sup>2</sup>	mm 1,1	inch 0.043
G 400	Mat 400 gr/m <sup>2</sup>	mm 1,3	inch 0.051
G 450	Mat 450 gr/ m <sup>2</sup>	mm 1,4	inch 0.055
G 500	Mat 500 gr/m <sup>2</sup>	mm 1,5	inch 0.059
<b>G 600</b>	<b>Mat 600 gr/m<sup>2</sup></b>	<b>mm 1,6</b>	<b>inch 0.063</b>
G 700	Mat 700 gr/m <sup>2</sup>	mm 1,8	inch 0.071
G 800	Mat 800 gr/m <sup>2</sup>	mm 2,0	inch 0.079
G 900	Mat 900 gr/m <sup>2</sup>	mm 2,2	inch 0.087
G 1000	Mat 1000 gr/m <sup>2</sup>	mm 2,4	inch 0.094
G 1100	Mat 1100 gr/m <sup>2</sup>	mm 2,6	inch 0.102
G 1200	Mat 1200 gr/m <sup>2</sup>	mm 2,8	inch 0.110
G 1300	Mat 1300 gr/m <sup>2</sup>	mm 3,0	inch 0.118

## MECHANICAL PROPERTIES

Mechanical properties	Unit of measure	G 300	G 400	G 450	G 500	<b>G 600</b>	G 700	G 800	G 900	G1000	G1100	G1200	G1300
Nominal thickness	mm inch	1,1 <b>0.043</b>	1,3 <b>0.051</b>	1,4 <b>0.055</b>	1,5 <b>0.059</b>	<b>1,6</b> <b>0.063</b>	1,8 <b>0.071</b>	2 <b>0.079</b>	2,2 <b>0.087</b>	2,4 <b>0.094</b>	2,6 <b>0.102</b>	2,8 <b>0.110</b>	3 <b>0.118</b>
Weight	Kg/m <sup>2</sup> Lbs/Sf	1,6 <b>0.33</b>	1,8 <b>0.37</b>	1,9 <b>0.39</b>	2 <b>0.41</b>	<b>2,2</b> <b>0.45</b>	2,5 <b>0.51</b>	2,8 <b>0.57</b>	3,1 <b>0.63</b>	3,4 <b>0.69</b>	3,7 <b>0.76</b>	4 <b>0.82</b>	4,3 <b>0.88</b>
Barcol hardness	°Barcol	40-45	40-45	40-45	40-45	<b>40-45</b>	40-45	40-45	40-45	40-45	40-45	40-45	40-45
Tensile strength	MPa	60	71	76	80	<b>87</b>	90	92	93	94	95	96	97
Tensile modulus	GPa	5,5	6,3	6,7	7	<b>7,1</b>	7,2	7,3	7,4	7,5	7,6	7,7	7,8
Elongation at break	%	1,5	1,5	1,5	1,5	<b>1,5</b>	1,5	1,5	1,5	1,5	1,5	1,5	1,5
IZOD impact strength	KJ/m <sup>2</sup>	45	50	53	55	<b>60</b>	65	70	75	80	85	90	95
Glass content	%	18,8	22,2	23,6	25	<b>27,3</b>	28	28,6	29	29,4	29,7	30	30,2
Density	gr/cm <sup>3</sup>	1,4	1,4	1,4	1,4	<b>1,4</b>	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Thermal expansion	10 <sup>-6</sup> / °K	24 - 28	24 - 28	24 - 28	24 - 28	<b>24 - 28</b>	24 - 28	24 - 28	24 - 28	24 - 28	24 - 28	24 - 28	24 - 28

## GRP LAMINATES WITH MAT + WOVEN ROVING

PRODUCT CODE	COMPOSITION	NOMINAL THICKNESS	
G 30/30	Mat 300 gr/m <sup>2</sup> + Woven Roving 300 gr/m <sup>2</sup>	mm 1,4	inch 0.055
G 30/50	Mat 300 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 1,6	inch 0.063
G 40/30	Mat 400 gr/m <sup>2</sup> + Woven Roving 300 gr/m <sup>2</sup>	mm 1,6	inch 0.063
G 40/50	Mat 400 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 1,8	inch 0.071
G 50/30	Mat 500 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 1,8	inch 0.071
G 50/50	Mat 500 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 2,0	inch 0.079
G 60/30	Mat 600 gr/m <sup>2</sup> + Woven Roving 300 gr/m <sup>2</sup>	mm 2,0	inch 0.079
G 60/50	Mat 600 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 2,2	inch 0.087
G 70/30	Mat 700 gr/m <sup>2</sup> + Woven Roving 300 gr/m <sup>2</sup>	mm 2,2	inch 0.087
G 70/50	Mat 700 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 2,5	inch 0.098
G 80/30	Mat 800 gr/m <sup>2</sup> + Woven Roving 300 gr/m <sup>2</sup>	mm 2,4	inch 0.094
G 80/50	Mat 800 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 2,7	inch 0.106
G 90/50	Mat 900 gr/m <sup>2</sup> + Woven Roving 500 gr/m <sup>2</sup>	mm 2,9	inch 0.114

## MECHANICAL PROPERTIES

Mechanical properties	Unit of measure	G30/30	G30/50	G40/30	G40/50	G50/30	G50/50	G60/30	G60/50	G70/30	G70/50	G80/30	G80/50	G90/50
Nominal thickness	mm inch	1,4 <b>0.055</b>	1,6 <b>0.063</b>	1,6 <b>0.063</b>	1,8 <b>0.071</b>	1,8 <b>0.071</b>	2,0 <b>0.079</b>	2 <b>0.079</b>	2,2 <b>0.087</b>	2,2 <b>0.087</b>	2,5 <b>0.098</b>	2,4 <b>0.094</b>	2,7 <b>0.106</b>	2,9 <b>0.114</b>
Weight	Kg/m <sup>2</sup> Lbs/Sf	2,0 <b>0.41</b>	2,4 <b>0.49</b>	2,3 <b>0.47</b>	2,7 <b>0.55</b>	2,6 <b>0.53</b>	3,0 <b>0.61</b>	2,9 <b>0.59</b>	3,3 <b>0.67</b>	3,2 <b>0.65</b>	3,6 <b>0.73</b>	3,5 <b>0.72</b>	3,9 <b>0.80</b>	4,2 <b>0.86</b>
Barcol hardness	°Barcol	40-45	40-45	40-45	40-45	40-45	40-45	40-45	40-45	40-45	40-45	40-45	40-45	40-45
Tensile strenght	MPa	92	112	100	114	105	115	110	116	111	117	112	118	120
Tensile modulus	GPa	7.8	9,3	8,2	9,2	8,3	9,2	8,4	9,2	8,4	9,0	8,5	8,8	8,8
Elongation at break	%	1.5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5	1,5
ZOD impact strength	KJ/m <sup>2</sup>	60	70	75	85	80	92	85	100	92	107	100	115	120
Glass content	%	30	33,3	30,4	33,3	30,8	33,3	31	33,3	31,2	33,3	31,4	33,3	33,3
Density	gr/cm <sup>3</sup>	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4
Thermal expansion	10 <sup>-6</sup> / °K	22-26	20-26	22-26	20-26	22-26	20-26	22-26	20-26	20-26	20-26	22-26	20-26	20-26

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.

## 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 RECOMMENDATION

**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.*