

Continuos and discontinuos lamination for the RV

Brianza Plastica has for 50 years been the European reference company in the production of fiberglass laminates in sheets and rolls. Up to 2006 the specialty of this production has been the use of the discontinuous laminating process and hot polymerization plant. In 2008 it has also started the production of Elyplan, a high quality laminate obtained through hot lamination.

Words Antonio Mazzucchelli

Brianza Plastica was set up in 1962 to produce fibreglass laminates. Over time, it has significantly extended its market presence with a comprehensive product range. It supplies fibreglass sheets to manufacturers of recreational vehicles (campers and caravans). Brianza Plastica is the only company in the sector that can boast both a properties discontinuous and continuous production line. Brianza Plastica is based in Carate Brianza (just north of Milan), with other three factories in Italy and storage facilities in Europe. In January 2014 was established Brianza USA Corporation in Elkhart, Indiana (USA), a warehouse and distribution centre to serve manufacturers of recreational vehicles throughout the entire US.

Elycold - Gelcoat rolls and sheets produced in discontinuous lamination

Elycold comes from the combination of polyester resin (orthophthalic and isophthalic) and glass fibre; over the years this composite material has replaced aluminium in the production of panels for commercial vehicles, campers, caravans and motorhomes, providing manufacturers with excellent long-term technical resistance and UV protection. Fibreglass panels are a great product because, unlike aluminium panels, they are easy and quick to repair. Elycold laminates have the polymerization process at ambient temperature, in order to avoid the thermal shocks typical of the continuous product. The result is a very good quality aesthetic effect appreciated from all rv top producers. The best dimensional stability of the laminates is guaranteed by the use of fibreglass CHOPPED STRAND MAT which could be combined with WOVEN ROVING reinforcement to further improve the mechanical features of the laminate.

Properties

Low withdrawal gelcoat resins - poor in styrene but with high resistance to ultraviolet rays - are considerably used to ensure:

- A perfect overlay of the underlying fibreglass
- Long time surface durability
- Total impermeability and insulation protection inside the panel
- A low level of yellowing recorded by ageing tests performed with UV - CON

Technical Data

| Technical Data | ELYCOLD Only Mat | | | | |
|---|------------------|-------|-------|-------|-------|
| | 1,15 | 1,6 | 2 | 2,5 | 3 |
| Thickness (h) (1) mm | 1,15 | 1,6 | 2 | 2,5 | 3 |
| Glass reinforcement (1) g/m ² | 375 | 600 | 900 | 1125 | 1350 |
| Density (1) g/cm ³ | 1,4 | 1,4 | 1,45 | 1,45 | 1,45 |
| Weight (1) g/m ² | 1650 | 2250 | 3000 | 3650 | 4300 |
| Glass Content (1) % | 23 | 27 | 30 | 31 | 31 |
| Hardness (UNI EN 59) Barcol | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 |
| Tensile resistance (UNI EN ISO 527 - 42/2) Long. Mpa | 72 | 89 | 95 | 99 | 102 |
| Tensile resistance (UNI EN ISO 527 - 42/2) Trasv. Mpa | 65 | 80 | 86 | 89 | 92 |
| Tensile modulus (UNI EN ISO 527 - 42/2) Long. Mpa | 6900 | 7200 | 7500 | 7700 | 7800 |
| Tensile modulus (UNI EN ISO 527 - 42/2) Trasv. Mpa | 6100 | 6400 | 7100 | 7300 | 7400 |
| Water Absorption (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 |
| Styrene Content (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 |

ELYCOLD Mat + Woven Roving

| Technical Data | ELYCOLD Mat + Woven Roving | | |
|---|----------------------------|---------|---------|
| | 1,50 | 2,00 | 2,70 |
| Thickness (h) (1) mm | 1,50 | 2,00 | 2,70 |
| Glass reinforcement (1) g/m ² | 375/300 | 600/300 | 900/500 |
| Density (1) g/cm ³ | 1,46 | 1,46 | 1,50 |
| Weight (1) g/m ² | 2200 | 2800 | 4000 |
| Glass Content (1) % | 30 | 31 | 35 |
| Hardness (UNI EN 59) Barcol | 40/45 | 40/45 | 40/45 |
| Tensile resistance (UNI EN ISO 527 - 42/2) Long. Mpa | 120 | 120 | 131 |
| Tensile resistance (UNI EN ISO 527 - 42/2) Trasv. Mpa | 111 | 111 | 121 |
| Tensile modulus (UNI EN ISO 527 - 42/2) Long. Mpa | 7900 | 8300 | 9600 |
| Tensile modulus (UNI EN ISO 527 - 42/2) Trasv. Mpa | 7500 | 7900 | 9200 |
| Water Absorption (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 |
| Styrene Content (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 |



Outer side finishing

- **Gelcoat protected**
100% isophthalic resin, anti-UV, available in glossy or satin version.
- **Film protected**
To avoid possible damages during handling.
- **Colours**
Different colours found in the RAL code or other colours on demand.



Inner side finishing

- **Film grooved**
A particular "sanded" surface avoiding the presence of dust improving the bonding performances.
- **Mechanically grooved**
Mechanical sanding to grant a good bonding.
- **Open fibers**
The fiber of glass are visible on the surface, this solution is suitable for those who prefer resins for the bonding.
- **Smooth**
No treatment, for those who require particular properties. other colours on demand.

Eco Friendly Production

Brianza Plastica has always stood out for its business model that focuses on safety, the environment and people. It operates in full compliance with the laws on environmental hygiene and for this purpose has equipped its fiberglass laminates production facilities with powerful suction systems that purify the internal production areas by carrying the solvents generated during the production process to modern abatement plants. In the three fiberglass laminates

factories located in Carate Brianza, in S. Martino di Venezze and in Ostellato, Brianza Plastica has installed three state-of-the-art abatement plants with innovative solvent concentration and destruction process. The abatement plant automatically feeds itself by recovering the heat generated by the combustion of the solvent. The heat recovered from the combustion is reused in part to feed the plant itself and in part to generate hot water for heating.

Technical Data

| | ELYPLAN NO GEL Only Roving | | | | ELYPLAN GEL Only Roving | | | |
|---|-------------------------------|-------|-------|-------|----------------------------|-------|-------|-------|
| | 0,80 | 1,00 | 1,50 | 2,00 | 1,00 | 1,50 | 2,00 | 2,50 |
| Thickness (h) (1) mm | 0,80 | 1,00 | 1,50 | 2,00 | 1,00 | 1,50 | 2,00 | 2,50 |
| Density (1) g/cm3 | 1,38 | 1,40 | 1,40 | 1,40 | 1,40 | 1,40 | 1,40 | 1,40 |
| Weight (1) g/m2 | 1100 | 1400 | 2100 | 2800 | 1400 | 2100 | 2800 | 3500 |
| Glass Content (1) % | 27 | 27 | 27 | 27 | 23 | 25 | 26 | 27 |
| Hardness (UNI EN 59) Barcol | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 |
| Tensile resistance (UNI EN ISO 527 - 42/2) Long. Mpa | 72 | 80 | 95 | 100 | 63 | 81 | 89 | 94 |
| Tensile resistance (UNI EN ISO 527 - 42/2) Trasv. Mpa | 66 | 70 | 88 | 90 | 55 | 75 | 80 | 85 |
| Tensile modulus (UNI EN ISO 527 - 42/2) Long. Mpa | 6770 | 7240 | 7560 | 7870 | 6210 | 6480 | 6750 | 7060 |
| Tensile modulus (UNI EN ISO 527 - 42/2) Trasv. Mpa | 5940 | 6400 | 6720 | 7450 | 5490 | 5760 | 6390 | 6750 |
| Water Absorption (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 |
| Styrene Content (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 |

| | ELYPLAN NO GEL Woven Roving | | | | ELYPLAN GEL Woven Roving | | | |
|---|--------------------------------|-------|-------|-------|-----------------------------|-------|-------|--|
| | 1,50 | 2,00 | 2,50 | 1,30 | 1,50 | 2,00 | 2,50 | |
| Thickness (h) (1) mm | 1,50 | 2,00 | 2,50 | 1,30 | 1,50 | 2,00 | 2,50 | |
| Density (1) g/cm3 | 1,50 | 1,50 | 1,50 | 1,50 | 1,50 | 1,50 | 1,50 | |
| Weight (1) g/m2 | 2250 | 3000 | 3700 | 1900 | 2250 | 3000 | 3700 | |
| Glass Content (1) % | 36 | 33 | 32 | 33 | 33 | 32 | 31 | |
| Hardness (UNI EN 59) Barcol | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 | 40/45 | |
| Tensile resistance (UNI EN ISO 527 - 42/2) Long. Mpa | 130 | 128 | 125 | 110 | 113 | 114 | 114 | |
| Tensile resistance (UNI EN ISO 527 - 42/2) Trasv. Mpa | 129 | 126 | 123 | 109 | 112 | 113 | 113 | |
| Tensile modulus (UNI EN ISO 527 - 42/2) Long. Mpa | 8800 | 8800 | 8900 | 7300 | 7500 | 7950 | 8125 | |
| Tensile modulus (UNI EN ISO 527 - 42/2) Trasv. Mpa | 8400 | 8700 | 8900 | 7100 | 7150 | 7550 | 7800 | |
| Water Absorption (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | |
| Styrene Content (1) % | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | ≤ 1,0 | |

Elyplan - Continuous lamination with isophthalic gelcoat

With the aim of expanding its range of products and of better meeting the growing needs of the market, Brianza Plastica has recently invested in an innovative continuous production line, created specifically to meet the various qualitative and quantitative requirements. The main advantage of continuous production is to achieve the highest possible polymerisation of the composite material, coming from the use of technologies that best maximise this value. This technology not only allows obtaining a perfectly flat product with very tight dimensional tolerances, but also allows benefiting from the economic advantages coming from the continuous production process.

Elyplan is manufactured on a next-generation new plant, crowning Brianza Plastica's over fifty years experience in the flat laminates sector. The plant's flexibility allows to select the most suitable laminate according to the different production criteria on each application in the temperature controlled transport industry, vans, the refurbishment of walls, cold storage rooms and translucent roofs for sheeted articulated lorries, wherever there are required to be smooth and cleanable surfaces, with high resistance to corrosive elements found within the environment.

What is really peculiar to this production is the very good quality/price relationship which makes Elyplan the best qualified alternative to cold lamination productions.

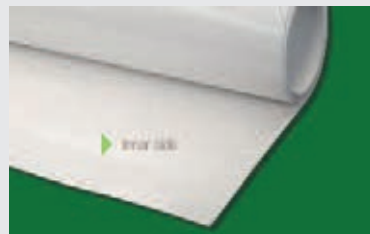
Properties

The high quality of Elyplan is guaranteed by the use of highly esteemed raw materials and by the gelcoat obtained from high elastic isophthalic resins ensuring high resistance to yellowing, impermeability to water vapor and condensations. Elyplan gives absolute protection from humidity to the panel's sensitive elements, be they expanded insulations or wood stratifications. It keeps unaltered the insulation features, granting that ATP certifications are kept on a long term basis or a better performance of refrigeration machines.



Outer side finishing

- **Gelcoat protected**
100% isophthalic resin, anti-UV, available in glossy or satin version.
- **Film protected**
To avoid possible damages during handling.
- **Colours**
Different colours found in the RAL code or other colours on demand.



Inner side finishing

- **Corona treatment**
This treatment consists in a high voltage, high frequency but low current wave that increase the surface energy and wetting out of the laminate. The result is a smooth surface perfect for the bonding with polyurethane mono/bi-component glues.
- **Mechanically grooved**
Mechanical sanding to grant a good bonding.
- **Smooth**
No treatment, for those who do not require particular properties.