PREPREG LINE – UV(A) CURABLE GLASS FIBRE

PROCESS DESCRIPTION

PREPREG LINE – KEY TECHNICAL SPECIFICATIONS

Description	Specification
Resin Matrix	Solvent Free UV(A) Curable Resins
UV(A) Lamp Power	20w/cm - 200 w/cm
Max Line Speed	20 m/min
Web Width – Trimmed	1,300 m
Max Roll Diameter	1,000 m
Max Dry Web Weight	1.6 kg/sqm
Typical Resin Content	30% – 50%
Mandrel Diameter (All Mandrels)	76mm

UV(A) CURABLE GLASS FIBRE PREPREG

UV(A) Curable PREPREG have been formulated to cure under vacuum (Oxygen free environment) from a tacky pliable form to a completely hard product within minutes simply through exposure to UV-A (either outdoors sunlight or high intensity artificial light)

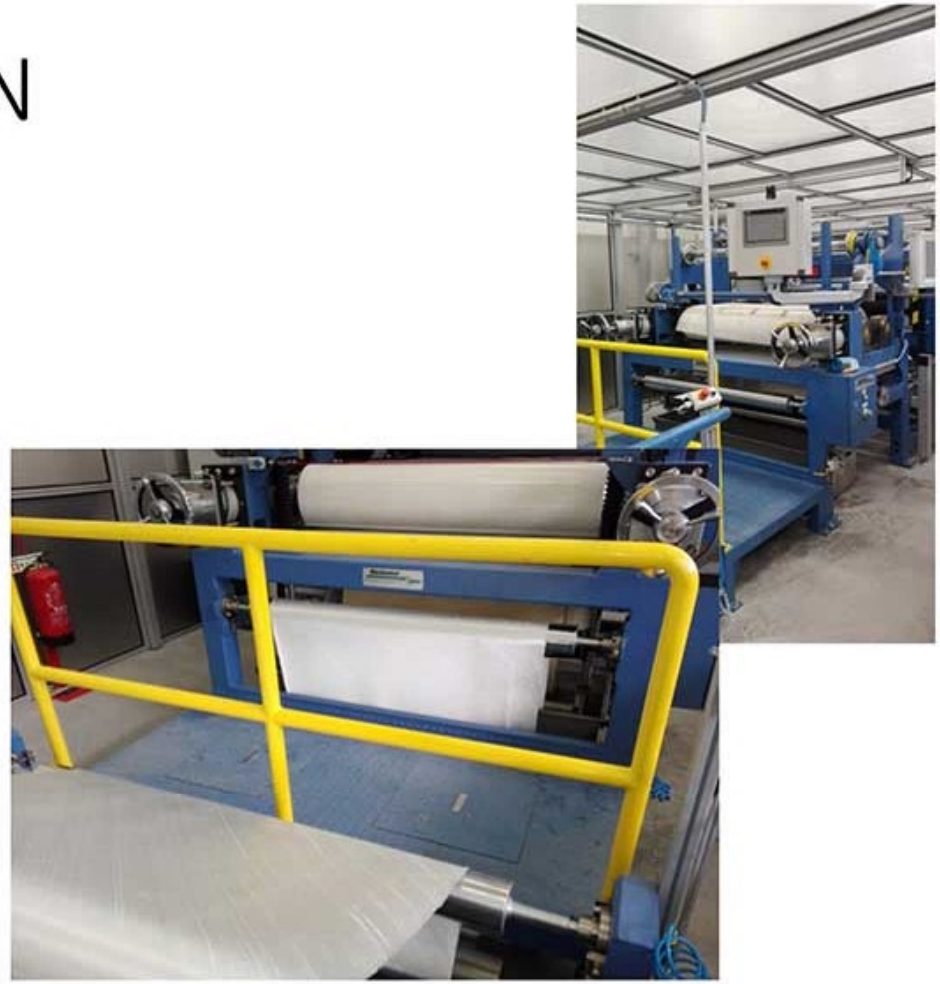
Initially, the PREPREG is present in the reactive B-state with a high viscosity and is easily handled and can be stored at ambient temperatures for months in the absence of light. The content and type of reinforcing material is typically E-Glass or S-Glass fibers in the form of a woven or non-crimp, stitch bonded fabrics and can be varied within a wide range. The type of resin used to make this photo-curing prepreg is 100% Styrene free, extremely low VOC´s.

1.0 UV BARRIER - ENCLOSURE

The PREPREG Line is installed inside a purpose built enclosure that prevents 99,7% of the ambient UV rays from entering the production area.

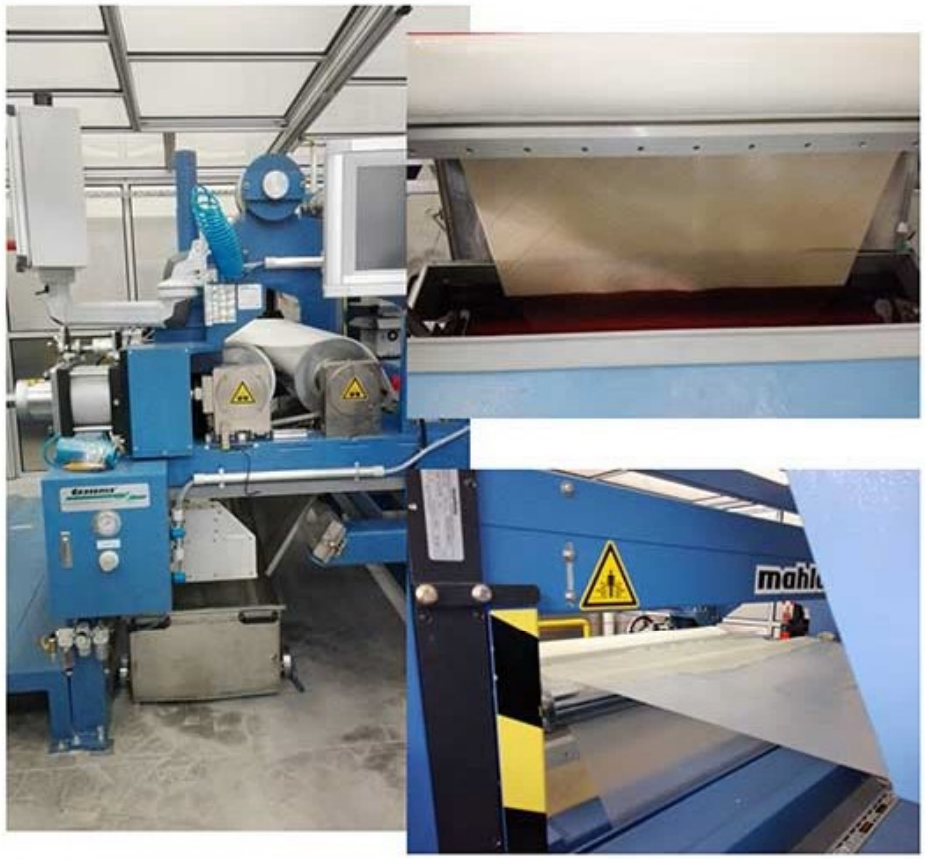
2.0 UNWINDING STATION

The motor driven unwinding station has pre-set tension control thereby maintain the web tension as the material passes around the spreader roller and then through the submersion tank.



3.0 FOULARD DIPPING AND PINCH ROLLER SYSTEM

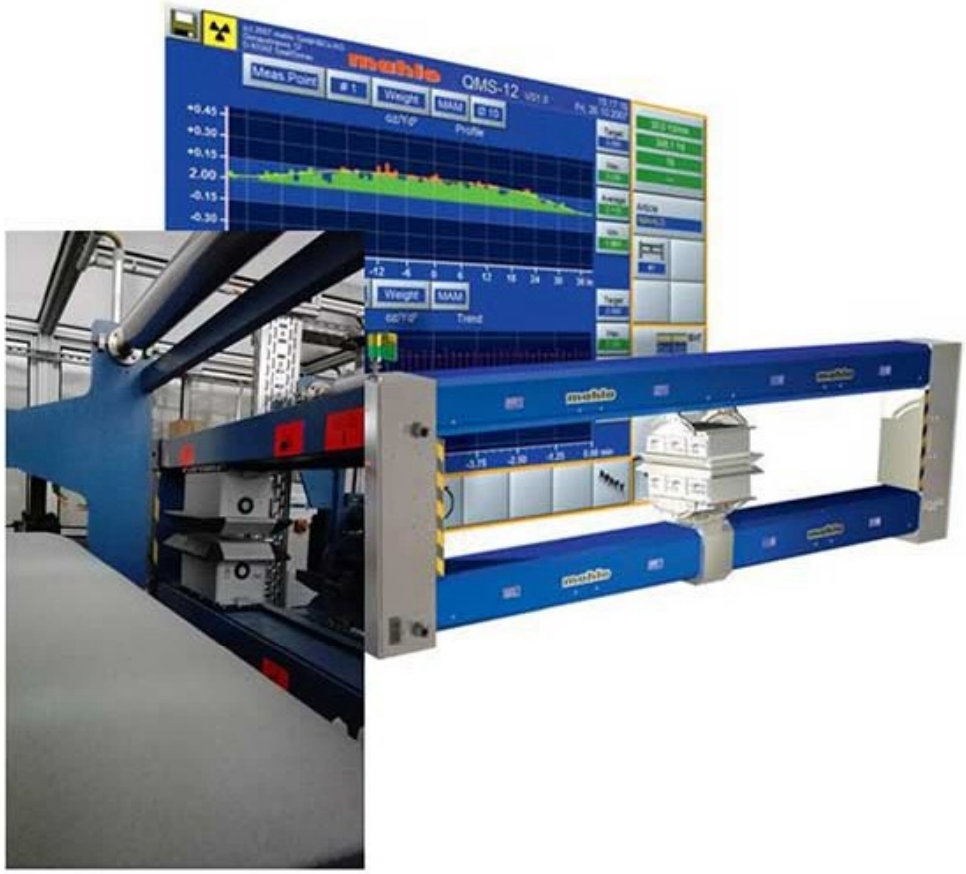
The dry glass fabric passes through the foulard where it is submerged into the resin matrix. After the impregnation the saturated fabric is squeezed by a pair of rollers and the excess resin is removed. One of the compression rollers is movable with pneumatic actuators and has a manual gap adjustment to fix the gap between the movable and the fixed roller. This clearance will affect the final resin content of the prepreg. The excess resin is directed back to the tank through gutters strategically placed for this purpose. The green prepreg is then carried through the machine on a layer of HDPE plastic.



4.0 PRODUCT WEIGHT MEASUREMENT

Mahlo Qualiscan Gravimat

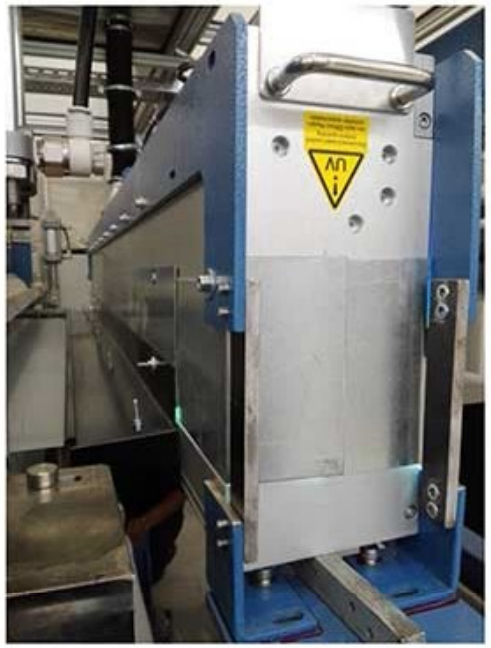
With the fiberglass fabric uniformly impregnated with the resin matrix, the prepreg is routed to the Mahlo Qualiscan Gravimat weight measurement device. This device is a modular web gauging system for measuring, logging and controlling critical process parameters over the entire working width of running web.



5.0 UV LAMP – B-STAGING OF PREPREG

After impregnation, compression and weight measurement, the prepreg is partially cured (B-Staged) when passing under the UV(A) lamp.

The UV curing unit is water cooled and also includes an air extractor to remove the ozone that is created by the lamp during the curing process.



6.0 WIND-UP STATION

The wind-up process regulates the roll tension within accurate process settings and accumulates the finished product onto the mandrel.

7.0 PACKAGING AND STORAGE

The finished B-staged prepreg roll is removed from the wind-up mandrel and then packaged and sealed inside a 100% UV barrier foil bag. Plastic pad plugs are fitted on each side of the roll to support the packaged roll while keeping it off the surface thereby preventing physical damage.

The product can be stored at room temperature and out of direct sunlight for at least 6 months.