CTP TECHNOLOGY

Glass reinforced plastic (CTP) is a composite material obtained by combining glass fiber with a carrier matrix resin. Fiberglass reinforced plastic is a high quality composite engineering material obtained by combining flexible, but not sufficient mechanical strength plastic (eg polyester resin) with high mechanical strength glass fiber.

The GRP material has two main raw materials: unsaturated polyester resin and glass fiber.

The most commonly used unsaturated polyester resins in GRP production are thermoset resins in reinforced plastics. It addresses all kinds of molding techniques, from simple molding techniques such as hand laying to the most complex mechanized molding techniques. Polyester resins cover a wide range of chemical families and are generally obtained by the condensation reaction of polyhydric alcohols with dibasic acids. Depending on the type of dibasic acid used, unsaturated polyester resins are referred to as “orthophthalic”, “isophthalic” or “bisphenolic” so as to ensure that the composite is of general purpose, chemical resistance or high chemical resistance.

Glass fiber used in the production of GRP is produced using traditional raw materials such as sand, alumina, limestone, colemanite, kaolin. After very fine grinding and homogeneous mixing, the mixture is introduced into the melting furnace at a temperature of about 1600 [deg.] C., where the slowly melting glass melt is extruded from platinum / rhodium alloy sleeves with a winding system at high speed and as 10-25 micron diameter fibers. coil.

GRP is obtained by co-molding the reinforcing material (fiberglass) and the carrier matrix (resin). Although this can be done by many different methods, the principle is to “wet” the glass fiber with the carrier resin in an appropriate manner. The polyester resins are polymerized by a chemical reaction to a hard, insoluble, non-melting material.

ADVANTAGES

- High corrosion resistance,
- Maintenance-free,
- Light,
- Low installation cost,
- Slip,
- High impact resistance,
- Fire resistance,
- Dielectric strength,
- High resistance to chemicals,
- It is antibacterial,
- Elongation at break is higher than metals,
- Environment friendly,
- High mechanical strength,
- Design flexibility,
- Easy repairability,
- Can be produced in desired color,
- Eternal life (theoretically)
- High thermal resistance.

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USES

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- CHEMICAL SECTOR
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- TEXTILE SECTOR
- IN THE FIELD OF GREENHOUSE AND LIVESTOCK

COMPONENTS

DURAGEL MP

Duragel is the top layer of composite materials, especially glass fiber reinforced polyester (GRP), which improves the surface appearance quality and provides the outdoor performance of the GRP product. Generally, gelcoats are based on epoxy or unsaturated polyester resin.

Chemically gelcoat is made from modified high performance polyester resins. CTP is applied to the surface of the mold in liquid form: brush, spray or airless spray management. MEK-P (Methyl Ethyl Ketone-Peroxide) is added by curing from liquid form to solid form.

DURAGEL REPAIR

Specifically designed for damage to fiberglass and gelcoat surfaces, osmosis bubbles, scratches and small holes. Two component polyester resin. 60 min. It cures inside and forms a water-resistant, hard, white surface. It can be painted after curing to remove color difference.

Epoxy Resins

Generally, two-component epoxies, like other thermoset plastics, change from liquid to solid after a certain period of time and mature within one to two weeks to reach final hardness. Epoxy bonding with glass or carbon fibers has excellent mechanical strength. They are usually used in combination with carbon fibers. They are more preferred in aerospace and aerospace technologies, automotive, medical, marine and construction.

Advantages:

They provide high bond strength in fiber structures.

They have high abrasion resistance.

They are non-volatile and have high chemical resistance.

They have the ability to cure at low and high temperatures.

Disadvantages:

They are expensive when mixed with polyester.

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Polyester Resins

Both in World the most widely used in GRP applications around the world unsaturated polyester resins, reinforced plastics resins are located in one of thermosets. They address all kinds of molding techniques, from simple molding techniques such as hand laying to the most complex mechanized molding techniques. Unsaturated polyester resins can be grouped as “orthophthalic” and ”isophthalic”.

Advantages:
Lower costs
Good environmental resistance
Orthophthalic Polyester Resins: General purpose resin. It is a strong material that can be used in places with minimal contact with chemicals.
Isophthalic (Isophthalic) Polyester Resins: It can be used in abrasive environments, chemical resistance is a medium level resin. Recommended for applications with splash or spillage of chemicals.

Vinylester Resins

They resemble polyester resins. Their most important advantage is that they have an improved bond strength between the fiber and the matrix. The production of reinforced plastic components is used for their use in corrosive environments. These polymers are used in chemical plants, pipes and storage tanks that require chemical resistance.

Fibers Used in Composite Production

Glass Fibers

Glass fibers, or in other words, glass fibers, are the most commonly used reinforcement materials in the production of composites. In addition to its superior properties, it is an economical type of reinforcement. Although it has been used with various matrix materials, its main application is the glass reinforced plastic (GRP) industry.

Carbon Fibers

Carbon fibers, or carbon fibers in other words, have high tensile strength and E - modulus despite the low density of the fibers. The properties of carbon fibers that can withstand high temperatures vary depending on the final process temperature in production. In addition to their superior properties, carbon fibers, which are extremely expensive, are a material used especially in the aerospace industry.

Optimal for all Applications

We guarantee that our Duragel coats are made solely from raw materials the behaviour of which has been tested over the long term and which have proved themselves. Users have an extensive line of gelcoats and topcoats in brushing and spraying quality at their disposal.
All gelcoats and topcoats are distinguished by good working properties such as de-airing, flow and wetting of the mould. Optimal thixotropic properties prevent running on vertical surfaces and the reactivity of the base resins used in conjunction with the respective, especially formulated pre-acceleration ensure fast and thorough curing.

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Application Methods:

THE SURFACE MUST BE DRY RUGGED AND DUTY FREE

Duragel repair must be used for surface defects.For ctp surface repairs, sanding the old surface is recommended.

stir the product for 3 min.

excessive mixing may result in loss of the tixotrophic property of the product. in such cases, let the product stand for 4 hours.

application should be applied in a minimum of 3 layers.

the recommended thickness is 600-800 microns.

The amount of hardener should be between 1-2.5%.

Application below 15 degrees is not recommended.

FIBER APPLICATION

Duragel mp 2 times thin.

fiber duragel mp is wet to the surface.

1 layer of duragel mp is applied to the surface.

After drying, 1 more duragel mp is applied.

Finally, top coat is applied and manufacturing is finished.Do not apply directly over painted surfaces

Limitations: Apply in good weather when air and surface temperatures are above 60°F. Surface temperature must be a least 60°F above dew point. For optimum application properties, bring material to 70-80°F temperature range prior to mixing and application.

Once surface is prepared correctly, blend EcoPoxy GelCoat and apply to surface.

In a dry clean container blend 2 parts resin by volume to 1 part hardener by volume. Mix thoroughly for 2.5 minutes at 450-600 rpm. Transfer batch from mix container to transport or spray container. Apply mixed content from transport or spray container to surface immediately.

Note: If 24 hours elapsed from time of application then additional preparation is required. Lightly sand entire surface with 80 grit sand paper until a light powdery residue appears and gloss finish has been removed to provide a profile for bonding. Remove all sanding dust and wipe down entire surface with de natured alcohol to remove contaminants.

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