

Experiment No. 19

Statement:

Making repair patch of GFRP (Glass Fiber Reinforce Plastic) material

Desired Learning Objectives

2.This practical aim to make a patch by using resin mix with hardener and fiber of glass reinforce plastic material after going through this practical, trainees would be able to make repair patch of GFRP and Resin.

- (a) Trainer would be able to practice safety precautions for handling chemicals like resin and hardener.
- (b) Trainee will draw the repair scheme to make a patch.
- (c) Learn application of CSM on GFRP with adhesive material of resin.
- (d) Experience application of thermoset material i.e. resin.
- (e) Application of adhesive paste and evenly distribution over fiber with help of scrapper and brushes.
- (e) Consideration of Pot life and usage of paste within stipulated time.
- (f) Practice safe storage for soaking / curing period.

Equipment / Material Required

3. The following materials are required during practical:

- (a) CSM (Chop Strand Mat) of GFRP Material.
- (b) Resin
- (c) Hardener
- (d) Brush of 2"
- (e) Brush rolling (small)
- (f) Scrapper
- (g) Work piece of GFRP

- (h) Methyl Ethyl Ketan (brush cleaner)
- (i) Gloves
- (j) Lead pencil
- (k) Apron
- (l) Iron rod

Safety Precautions

4. During the practical, Trainees are to ensure following precautions: -
- (a) Composite materials are fragile, more caution is required for their handling.
 - (b) Don't Touch with Bare hands. Always use the gloves.
 - (c) Don't smell or taste the chemical material.
 - (d) Chemicals are to be kept isolated from another store.
 - (e) Don't allow air bubbles in the resin paste.
 - (f) Use the resin within pot life.
 - (g) Allow sufficient time for dry in dirt free environment.

Procedure

5. To make a patch by fiber of glass reinforce plastic and adhesive material of resin (mix with hardener), proceed as follows: -
- (a) Pick a repairable work piece of GFRP for patch work.
 - (b) Make a sketch for repair patch with help of lead pencil; repair patch should overlap edges of damage.
 - (c) Place the CSM on patch area adjust size by trimming the edges.
 - (d) Don't mix the hardener before preparation of work.
 - (e) Mix required amount of resin and hardener and stir with iron rod for 5 minutes.
 - (f) Apply the resin paste on fiber and evenly distribute on the CSM by scrapper and brush.
 - (g) Pot life be kept in mind, it depends upon ration of hardener into resin. Normally resin may be used within half hour otherwise it will set.

- (h) Place the work piece in dirt free area for curing purpose.

Conclusion:

[illegible]