

PU 106: Introduction to Composites

Introduction to Composites

- i. What is a Composite and Where Do Composites Fit?
- ii. History of Composites
- iii. General Classification of Composites (Continuous vs. Discontinuous Fibers)
- iv. General Composite Applications
- v. Advantages / Disadvantages of Composites
- vi. Strategy When Using Composites
- vii. Main markets

Resin Technology

- i. Introduction to Resins
- ii. Thermoset vs. Thermoplastic
- iii. Overview of Thermoplastics
- iv. Overview of Thermosets
- v. Detailed Thermosets Information
 - o Polyesters
 - o Vinyl Esters
 - o Epoxies (base + hardener discussion)
 - o Polyurethanes
 - o Phenolics
 - o Others
- vi. Resin Selection Guidance
- vii. Example Formulations

Filler/Fiber Technology

- i. Introduction to Fillers/Fibers
- ii. Continuous Fibers vs. Discontinuous Fibers
- iii. Fiber Type Comparison
- iv. Textile Forms and Architecture
- v. Fiber/Matrix Interface
- vi. Fiber Sizing

Manufacturing Equipment

- i. Dosing Units
- ii. Mixing Heads
- iii. Presses, Performers, and Molds

Recycling and Circular Economy

- i. EU Regulation
- ii. Recycling Carbon Fiber

Questions