



COMPRESSION MOLDING - CERTIFIED COMPOSITES TECHNICIAN - (CCT - CM)

| TOPIC | Resource | Body of Knowledge % |
|---|---|---------------------|
| Overview of Composites | CCT Basic Composites Manual | 3% |
| Define composites; understand what sets composites apart from other materials | | |
| Materials | CCT Basic Composites Manual | 2% |
| Organic vs inorganic materials; material structures; monomers and polymers; properties | | |
| Composite Materials | CCT Basic Composites Manual | 5% |
| Function of composite materials; polymers-thermoplastic and thermoset | | |
| Composites Manufacturing Processes | CCT Basic Composites Manual | 5% |
| Manufacturing process selection; composites manufacturing processes | | |
| Thermoset vs thermoplastic processing | | |
| Compression Molding Plant Safety | CCT Basic Composites Manual CCT Compression Molding Manual | 10% |
| Understanding and staying safe in handling the chemicals found in the compression molding plant; fire safety; personal protective equipment necessary in a compression molding facility; compression molding press safety; high temperature and pressure safety | | |
| Compression Molding Materials | | |
| Formulations, advantages, disadvantages of liquid composite molding (LCM); Bulk Molding Compound (BMC); Sheet Molding Compound (SMC); Pre-Preg; and Glass Mat Thermoplastic (GMT) | CCT Compression Molding Manual | 15% |
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| Compounding Processes and Equipment | CCT Compression Molding Manual | 25% |
| 1. Understand the various processes and equipment for producing the compounds utilized in compression molding- liquid composite; BMC; SMC; | | |
| 2. Understanding the preforming process; utilization of pattern cutting and placement of reinforcement | | |
| 3. Knowledge of the molding process, and the use of in-mold coatings | | |
| 4. Understand the Glass Mat Thermoplastic molding process | | |
| 5. Saturated vs Unsaturated materials and process options | | |
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| Compression Molding Processing | CCT Compression Molding Study Guide | 25% |
| Compression press types and design | | |
| Compression press - controls, speeds | | |
| Compression tooling - materials, key design factors, heating, | | |
| Compression molding conditons | | |
| General understanding of hydraulic pressure | | |
| New process variations, materials and hybrid methods | | |
| Process Quality Control and Troubleshooting | CCT Compression Molding Study Guide, CCT Basic Composites Manual | 10% |
| Raw material quality control checks, in process material quality checks | | |
| Quality control on the shop floor, trouble shooting methodology, defect identification and cause and effect corrective actions. | | |
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