



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

TOPIC	Resource	Body of Knowledge %
<b>Overview of Composites</b>	CCT Basic Composites Manual	3%
Define composites; understand what sets composites apart from other materials		
<b>Materials</b>	CCT Basic Composites Manual	2%
Organic vs inorganic materials; material structures; monomers and polymers; properties		
<b>Composite Materials</b>	CCT Basic Composites Manual	5%
Function of composite materials; polymers-thermoplastic and thermoset		
<b>Composites Manufacturing Processes</b>	CCT Basic Composites Manual	5%
Manufacturing process selection; composites manufacturing processes		
Thermoset vs thermoplastic processing		
<b>Compression Molding Plant Safety</b>	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		
<b>Compression Molding Materials</b>		
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%

<b>Compounding Processes and Equipment</b>	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		
<b>Compression Molding Processing</b>	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		
<b>Process Quality Control and Troubleshooting</b>	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.		

