

ClosedMoldAlliance

Composites One • RTM North
MVP • FormaShape

CM302 Light RTM Composite Tooling Training

5-DAY HANDS ON TRAINING

April 26 - 30, 2010
CCP Tech Center
Kansas City, MO



(800) 621-8003
compositesone.com

Schedule of Events

Monday, April 26 - 9:30 AM - 4:30 PM

- Economics of LRTM
- Product Design for Process and Flange
- LRTM Injection Demonstration
- A-Side Mold Construction
- Steps in LRTM Mold Building
- LRTM Demonstration

Tuesday, April 27 - 8:00 AM - 4:30 PM

- Waxing Techniques
- Waxing Demonstration
- Design First Layer of Wax
- LRTM Injection Demonstration
- Waxing First Layer

Wednesday, April 28 - 8:00 AM - 4:30 PM

- Second Layer of Wax
- LRTM Injection Demonstration
- Waxing Flange Details
- Start Lay-Up on B-Side

Thursday, April 29 - 8:00 AM - 4:30 PM

- More Laminates on B-Side
- MVP Equipment
- LRTM Injection Demonstration
- Supplier Presentations
- Finish Wax and Laminate on B-Side
- Graduation Dinner

Friday, April 30 - 8:00 AM - 1:00 PM

- Mold Repair and Maintenance
- Gel Coating, Glass Loading, and Troubleshooting
- Questions and Answers
- LRTM Injection Demonstration

CM302

Advanced Light RTM Tooling April 26 - 30, 2010

Limited number of spaces available.
Fax your registration form to
(519) 482-1661 to save your spot.
See registration form for payment
details.

Location: CCP Tech Center
821 E. 16th Avenue
Kansas City, MO 64116

Cost: \$1,850 USD per person
(Lunch and graduation
dinner included)

Hotel Accommodations:

Argosy Hotel & Casino
777 N.W. Argosy Casino Parkway
Riverside, MO 64150

Contact: Robin Stodghill at CCP
800-821-3590, x6006
RStodghill@shortstravel.com

Room Rate \$109 per night

**Must state you are with Composites
One School to obtain rate.**

**PARTICIPANTS UNDERSTAND THAT THEY WILL
RECEIVE CONFIDENTIAL INFORMATION AND
USE OF LIGHT RTM MOLDS AND THEY WILL NOT
DISCLOSE OR COPY SUCH INFORMATION IN
WHOLE OR IN PART.**

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Hands On Light RTM Composite Tooling Training

You will learn the basics of Light RTM Tooling including:

WHY RTM?

-Advantages and other options

PATTERN DESIGN AND PREPARATION

-Flanges, draft angles, and undercut considerations

BUILDING THE FACE TOOL

-Materials, their properties, and temperature controls
-Designing, building, and attaching the back-up frame
-Accurate location clamping and attachment system

DEFINING THE PART TO BE BUILT

-Working with dimensional wax
-Designing product cut-offs, vents, and peripheral seals
-Injection port location, multiple injection ports, and sensors
-Designing for ribs, cores, inserts, etc.
-Handling complicated shapes, undercuts, etc.

HOW TO ENSURE PART ACCURACY

-Controlling the problem of laminate shrinkage

BUILDING THE BACK TOOL

-Designing the frame and locking accuracy

TOOL LIFE AND CARE

-Replacing the tool faces

FINISHING AND PREPARATION OF THE TOOL

-Preparing the tool surface
-Release agents and their application
-Installing the mold seal
-Reinforcement materials replacement

GETTING STARTED

-Materials and resources

COSTING TOOLS AND PARTS

-Materials, wastage rates, and formulas for costing

RESIN SYSTEMS AND REINFORCEMENTS

-Review of available resin systems and properties
-Review of reinforcement applications and sources

FILLERS AND THEIR EFFECTS

-Impact on surface finish, part cost, and fire retardant
-Surface finish requirements

INJECTION MACHINES

-Features and benefits
-Catalyst and cure systems, production rates
-Preform materials, manual to fully automated



Registration Form

CM302 Light RTM Composite Tooling Training
April 26 -30, 2010
\$1,850 U.S. funds

Full Payment is required with registration prior to April 12, 2010

Name:	Title:	State:	Zip:	Distributor	Other
Company:		City:		Supplier	
Address:		Phone:		Fabricator	
Products currently being manufactured:				Supplier	
Please circle one:				Fabricator	Supplier

Please fax registration form by: April 12, 2010

You can fax your registration form and mail your payment to:

RTM North Ltd.
43 First Avenue
Vanastra, Ontario
Canada, NOM 1L0
P: (519) 482-1464
F: (519) 482-1661

Full payment is required with this registration. Registration will not be considered final until payment is received. All cancellations made ten working days prior to the commencement of the seminar will receive a full refund. Cancellations made less than ten days prior will be subject to a refund if there is a confirmed alternate. All cancellations must be made in writing.