

# MechTool<sup>TM</sup> SYSTEMS



**Winner of ICERP-JEC Innovation Awards 2011  
For Innovation of Mold Making Materials and Process.**

# MechTool™ SYSTEMS

**Mechemco offers a complete solution for fabricating high performance Composites Mold for Contact Molding, Match Die Molding, RTM and LRTM Molding and Infusion Molding Processes.**

**Tooling system consists of:**

**MechTool™ Gelcoats**

**MechTool™ Resins**

**MechLite® Core Materials**

**MechTool™ Gelcoats are specially formulated for:**

- Easy to Apply by Brush / Roller / Spray Method
- High Sag Index useful for vertical surfaces
- Very Low Shrinkage
- Excellent Abrasion and Scratch Resistance
- High Toughness and Resistance to Chipping even at thickness in excess of 1 mm
- Excellent Resistance to Mold Cleaning Solvents and Detergents

**MechTool™ Resins are specially formulated for:**

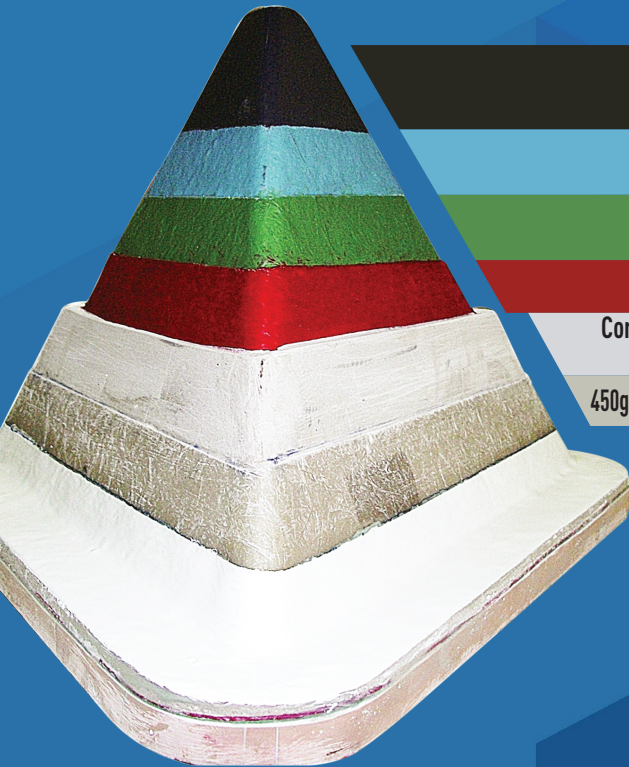
- Fast Wet out and Easy Air release
- Controlled Exotherm coupled with Complete and Even Curing
- Even Reinforcement to Resin distribution
- Excellent resistance to sag on vertical surfaces
- Excellent Toughness and High Thermal Stability

**MechLite® Core Materials are designed and formulated for:**

- Providing Light weight Core for Sandwich Construction
- High Compressive strength and Compressive Modulus
- High Flexural Modulus (Bending Modulus) providing exceptional stiffness
- Achieve monolithic sandwich structure with practically no bond line between skin and core

# RECOMMENDED CONSTRUCTION SEQUENCE:

After application of Semi-permanent Release System on the Pattern, following sequence is recommended to make quality tool:



Tooling Gelcoat (~1000 micron thickness) in one or two coats

Surface Tissue (30gsm x 2 Layers) with Tooling Resin

300gsm / 225gsm Powder Bonded CSM with Tooling Resin

450gsm Powder Bonded CSM x n layers (where n can be 2-5) with tooling Resin

Core Layers in the form of Tiles/Troweling Mix (6mm thickness x n layers where n = 1 to 5) using MechLite Tiles / Mechlite Filler with castin resin mix

450gsm Powder Bonded CSM x n Layers (where n = 2-5) with Tooling Resin mixed with Mech Lite filler

Surface Tissue (30gsm x 1 layers) with Top Coat Resin

## Different Grades Available for Tooling Gelcoat

- MechTool™ 1110G(T) : Isophthalate Tooling Gelcoat
- MechTool™ 1110NG(T) : NPG Isophthalate Tooling Gelcoat
- MechTool™ 1110HG(T) : High HDT Isophthalate Tooling Gelcoat
- MechTool™ 5310G(T) : Vinyl Ester Tooling Gelcoat
- MechTool™ 5310HXG(T) : High HDT Vinyl Ester Tooling Gelcoat
- MechTool™ 5310NG(T) : Epoxy Novolac Vinyl Ester Tooling Gelcoat

## Different Grades Available for Tooling Resin

- MechTool™ 1110(T) : Isophthalate Tooling Resin
- MechTool™ 1110N(T) : NPG Isophthalate Tooling Resin
- MechTool™ 1110H(T) : High HDT Isophthalate Tooling Resin
- MechTool™ 5310(T) : Vinyl Ester Tooling Resin
- MechTool™ 5310HX(T) : High HDT Vinyl Ester Tooling Resin
- MechTool™ 5310N(T) : Epoxy Novolac Vinyl Ester Tooling Resin

## Different Grades Available for Topcoat Resin

- Mechster® 9000(TC)W : Orthophthalate based White Colored Topcoat for Supports
- Mechster® 1110(TC)W : Isophthalate based White Colored Topcoat for Molds

## Different Grades Available for MechLite Core Casting

- Mechster® 9000S(PC) : Orthophthalate based Casting Resin for MechLite Tiles
- Mechster® 9000S(CM) : Orthophthalate based Casting Resin for MechLite Trowelling Mix & MechLite™ Pasting Mix process



## Selection Guide for MechTool™ System

PROCESS TYPE	110NG(T)	5310G(T)	5310HXG(T)	5310NG(T)	1110HG(T)	1110N(T)	5310(T)	5310HX(T)	5310N (T)	1110H(T)	9000(TC)W	1110(TC)W	9000S(PC)	9000S(CM)
	TOOLING GELCOATS					TOOLING RESINS					TOPCOAT RESINS		CASTING RESINS	
HAND LAY-UP	XXXX	XXX	XX	XX	NR	XXXX	XXX	XX	XX	NR	XXX	XXXX	XXXX	XXXX
MATCH DIE MOULDING (PUNCH AND CAVITY MOULDS)	XXXX	XXXX	XXX	XX	NR	XXXX	XXXX	XXXX	XXX	NR	XXX	XXXX	XXXX	XXXX
RTM (TOP AND BOTTOM MOULDS)	NR	NR	XXX	XXXX	NR	NR	NR	XXX	XXXX	NR	NR	XXXX	XXXX	XXXX
LRTM (TOP MOULDS / TRANSPARENT)	NR	NR	NR	NR	XXX	NR	NR	NR	NR	XXX	NA	NA	NA	NA
LRTM (BOTTOM MOULDS)	NR	NR	XXX	XXXX	NR	NR	NR	XXX	XXXX	NR	NR	XXXX	XXXX	XXXX

### KEYS :

**XXXX**  
HIGHLY  
RECOMMENDED

**XXX**  
GOOD ALTERNATIVE

**XX**  
CAN BE USED

**NR**  
NOT RECOMMENDED

**NA**  
NOT APPLICABLE

**PIGMENTED TOOLING GELCOAT  
AVAILABLE ON REQUEST**

## Different Grades Available for Mold Maintenance and Mold Repair

- Mechster® 5310G(RP) : Repair Putty based on Vinyl Ester Resin
- Mechster® 1110G(RP) : Repair Putty based on Isophthalate Resin
- Mechster® 5310(TC) : Vinyl Ester Top Coat for Re-Surfacing of FRP Mold

**We Recommend Mechster® Finishing Coats  
for Pattern Finishing Purpose**



27, Kewal Industrial Estate, Senapati Bapat Marg,  
Lower Parel, Mumbai 400 013, INDIA  
Tel.: +91-22-24922039 / 24951799, Fax: +91-22-24945907  
Email: info@mechemco.com | www.mechemco.com

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