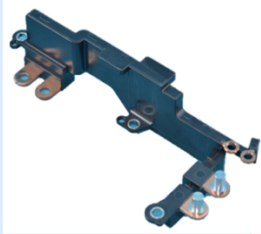


Overmolding



APPLICATIONS (CTD) - CONFIDENTIAL

Metal overmolding with thermoplastics (TP)



busbar (PPS-metal)

Metal overmolding with elastomers



engine crankshaft seal (FKM-metal)

TP overmolding with TP /elastomers



hand pruner (ixef1022-silicone)

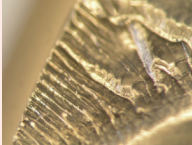
TPC/TSC overmolding with TP /elastomers

TECHNICAL CONCERNS /CHALLENGES/ISSUES

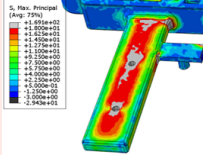
thermal shock (cycling)



stress-cracking (ESCR)



residual stresses



core shift



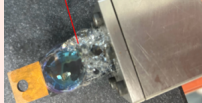
warpage (with thin metal frames)



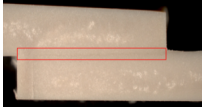
metal overmolding - thermal studies



adhesion to metal and tightness



adhesion to thermoplastics



CAPABILITIES

Overmolding Capabilities
(all regions)









...

current overmolding projects - status (Aug 2024)

adhesion to thermoplastic or thermoset composites



insert overmolding vs. 2K molding

[Link to EV busbar program
\(electrification initiative\)](#)

[overall document about the use of VE in
busbar](#)

Guy Van Meulebeke	Team (Aug 2024)						
	R&I (ADL)					R&I (core labs)	R&I (engineer
Tokyo/Fuji	Toshio Hatayama	Toru Tsujimura					
Seoul	Kwang-kil Mun						
Shanghai	Hanson Li	Lingjin Rao	Chao Qian				
Alpharetta	Greg Santoro	Greg Plithides	Elias Irick	Ben Reck	Mike Kitchens		Glenn
Brussels	Guy	Benoit Devaux					
US West Deptford							
Bollate	Rosaria Anastasio	Gianbattista Besana					