

PROCESSING GUIDE 4KFLEX-COMPOUNDS

	Temperature						Pressure						Time							
	Melt Temperature		Mould Temperature		Increase nozzle temperature	Decrease temperature in feed zone	Injection Pressure		After Pressure		Screw back pressure		Delay injection pressure		After pressure time		Filling time		Cooling time	
	Increase	Decrease	Increase	Decrease			Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
Flow Marks	X		O															X		
Beach lines	X	O																O		
Weld lines	X		O			O												O		
Jetting	O					O										X				
Moisture streaks		O	O								O						O			
Voids		O		O				X							O					
Shrinkage *	O		O				O		O								O		O	
Dull / uneven surface	X		O			O				O							X			
Degradation		X										O					O			
Delamination	O					O			O	X	O					O		O		
Sink marks		O							X									O		
Short shots	O							X	O								O			
Sprue/nozzle leakage													O							
Burning		O										O					X			
Screw does not return												X								
Flashing		O										O					O			
Difficulty removing sprue		O		O						O							X			
Long cycle time		X		O								O						O		

Remedy
 X = primary
 O = secondary

Flow Marks	X
Beach lines	X O
Weld lines	X O
Jetting	O
Moisture streaks	O O
Voids	O O
Shrinkage *	O O
Dull / uneven surface	X O
Degradation	X
Delamination	O O
Sink marks	O
Short shots	O
Sprue/nozzle leakage	
Burning	O
Screw does not return	
Flashing	O
Difficulty removing sprue	O O
Long cycle time	X O

	Mould										Screw			Miscellaneous									
	Mould locking force		Increase gate size	Check gate location	Polish / blast treatment	Maintenance required	Polish sprues and runners	Increase sprues and runners	Introduce venting	Introduce cold slug	Check cavity balance	Introduce air ejector	Rotation Speed		Inject with rotating screw	Unblock nozzle	Pre-dry material	A void contamination	Ensure pellet flow in hopper	Check nozzle / sprue bush radius	Metering		
	Increase	Decrease											Increase	Decrease							Increase	Decrease	
Flow Marks						O					O		O				O						
Beach lines									O														
Weld lines			O		O				X					O									
Jetting			X	O						O										X			
Moisture streaks		O							O														
Voids			O	O							O												
Shrinkage *				O						X													
Dull / uneven surface			O		O					O													
Degradation													O										
Delamination									O											X			
Sink marks			O	O																		O	
Short shots			O	O						O												O	
Sprue/nozzle leakage																						O	
Burning		O									O												
Screw not return																				X		O	
Flashing	X					O				O				O									
Difficulty removing sprue							O															O	
Long cycle time				O							X												O

Remedy
 X = primary
 O = secondary

Flow Marks	
Beach lines	
Weld lines	O O
Jetting	X O
Moisture streaks	O
Voids	O O
Shrinkage *	O
Dull / uneven surface	O O
Degradation	
Delamination	
Sink marks	O O
Short shots	O O
Sprue/nozzle leakage	
Burning	O
Screw not return	
Flashing	X
Difficulty removing sprue	
Long cycle time	O

* Due to moulded-in stresses



4KFLEX® is een van de meest verkochte TPE-compounds in Nederland. Al onze 4KFLEX® TPE-Compounds worden door onszelf ontwikkeld en in Nederland geproduceerd. Daarmee garanderen wij snelle levertijden, korte communicatielijnen en snelle service.

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Type and screw design	All grades are best processed on scw ram machines fitted with general purpose screws. Plunger machines are not recommended but can produce acceptable small or prototype parts.
Mould design	Very often the crucial part. Incorrect mould design is the most frequent cause of moulding problems for Evoprene compounds. Contact our technical department for help
Runners	Full round runners tapering into the gate area are necessary for best results. They should to be kept as short as possible and must be balanced in multi-cavity designs. Trapezoidal gates are used in low cost tooling but tend to restrict flow. Hot, cold and insulated runners are all suitable
Gates: cold runner	Full round gates should always be used with a diameter half the maximum part thickness, minimum 0.7mm. It is best to inject against a surface so submarine or winkle gates give good results particularly with softer grades. Tab and film gates are acceptable providing they are large enough. Avoid square or rectangular gates and sharp shut downs
Hot runners	Full round gates are essential but diameter can be reduced to one third the maximum part thickness with a minimum of 0.7mm. To avoid drool from hot runner tips always fit shut off valves in the hot runner tips. Failure to include shut off valves will lead to the formation of a cold slug. This is usually seen at the gate but sometimes can be pushed around the moulding
Multi component moulding for soft touch	This is best accomplished by comoulding with more than one barrel. Rotary tools or retracting core systems can be used. Component design determines the moulding sequence but better bonds can be achieved by moulding the Evoprene first then injecting the thermoplastic, usually at a higher temperature. Effective shut off is achieved through the use of crush beads or similar. Insert moulding is effective for small volume parts but bond strenghts are normally less good and mechanical keying is recommended. Please contact our technical department for further assistance
Venting	Best added after initial mould trials. Vents 0.02-0.05 mm (1-2 thou) deep should be located at the final fill point to eliminate air traps and weld lines and prevent burn marks.
Ejection	Stripper plate is best. Ejector pins where used should be as large as possible and sited for maximum support. Air ejection is used to break the vacuum for deep draw parts.



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