



General recommendations for injection moulding IXEF[®] compounds

(Standard grades)

EQUIPMENT

- Conventional equipment for moulding thermoplastics
- Screw characteristics
 - Compression ratio 2 to 3
 - L/D ratio 15 to 20
- Check valve
- Insulation plates (between machine platen and tool)

DRYING

Recommended for bags open longer than 24 hours

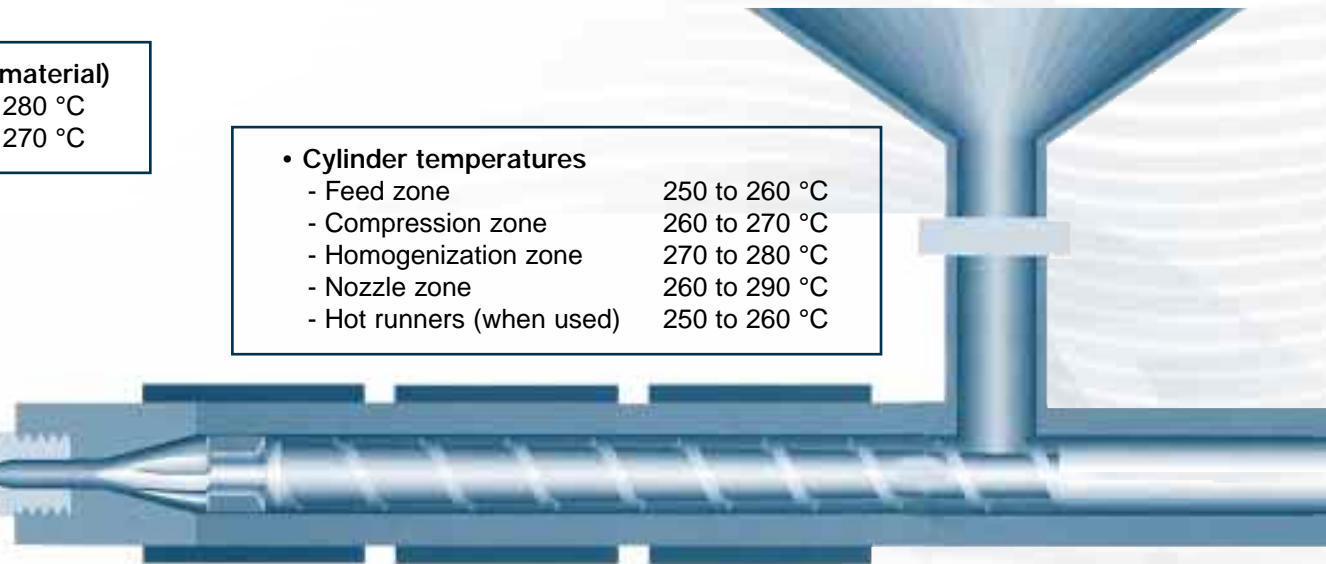
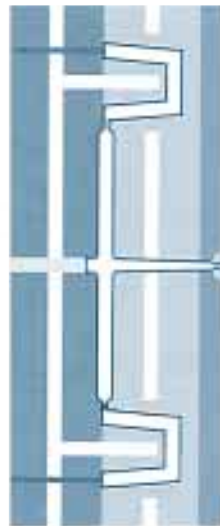
- Hot air drying
 - Temperature 80 °C
 - Duration 12 h
- Vacuum drying
 - Temperature 120 °C
 - Duration 4 to 5 h

- Material temperature (purged material)
 - Standard grades 280 °C
 - Flame-retarded grades < 270 °C

- Cylinder temperatures
 - Feed zone 250 to 260 °C
 - Compression zone 260 to 270 °C
 - Homogenization zone 270 to 280 °C
 - Nozzle zone 260 to 290 °C
 - Hot runners (when used) 250 to 260 °C

MOULDING

- Mould temperature 120 to 140 °C
- Cooling time (1) including holding time $2.5 \times e^2 \text{ s}$



FILLING

- Speed high
- Injection time 0.5 to 2.5 s

HOLDING

- Holding pressure (material) 300 to 1500 bar
- Initial holding time (1) $3 \times e \text{ s}$

- Peripheral screw rotation speed 0.1 to 0.3 m/s
- Hydraulic back pressure 0 to 10 bar



Injection conditions for IXEF[®] compounds

(Standard grades)

General recommendations

TEMPERATURE	<ul style="list-style-type: none"> - Verify the temperature of the mould cavities using a temperature probe - Confirm the melt temperature using a temperature probe moved about in a volume of melt, shot onto an insulator (a glove, cardboard, etc.)
SHOT VOLUME	<ul style="list-style-type: none"> - Set the initial cooling time - Set a zero holding time and/or pressure - Inject incomplete parts by gradually increasing the shot volume using an average to high injection speed - When the mould is almost filled (90 to 95%), set the initial holding pressure and gradually increase the holding time - In this way, the end of the filling is done under constant pressure and part over-packing is avoided
HOLDING	<ul style="list-style-type: none"> - Adjust the holding phase parameters to obtain a constant part weight and the required dimensional stability
COOLING	<ul style="list-style-type: none"> - The cooling time depends on the part geometry - Gradually adjust the cooling time until the optimal cycle time is obtained

What to do if ...

OBSERVATION	POSSIBLE CAUSES	POSSIBLE REMEDIES
<i>... the part or the sprue remains jammed in the mould</i>	Insufficient draft angle	<ul style="list-style-type: none"> - Try the corresponding lubricated grade - Check the draft angle and surface finish
	Over-packing	<ul style="list-style-type: none"> - Optimize the position of the switchover point - Reduce the holding pressure and/or the holding time
	Mould temperature	<ul style="list-style-type: none"> - Increase mould temperature to the recommended value
<i>... stains appear on the parts and/or on the mould</i>	Moisture pickup	<ul style="list-style-type: none"> - Dry the product (see other side)
	Material degradation	<ul style="list-style-type: none"> - Reduce the material temperature
<i>... the part surface appearance is poor</i>	Premature freezing	<ul style="list-style-type: none"> - Increase the mould temperature - Increase the injection speed or adapt the injection speed profile
	Holding	<ul style="list-style-type: none"> - Increase the holding temperature
	Jetting	<ul style="list-style-type: none"> - Adjust the injection speed through the gate
	Burns	<ul style="list-style-type: none"> - Reduce the last injection speed and check the venting
<i>... the part is not filled</i>		<ul style="list-style-type: none"> - Increase the shot volume - Increase the injection pressure and speed and/or the holding pressure - Increase the material temperature
<i>... problems continue</i>		<ul style="list-style-type: none"> - Contact us!

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