

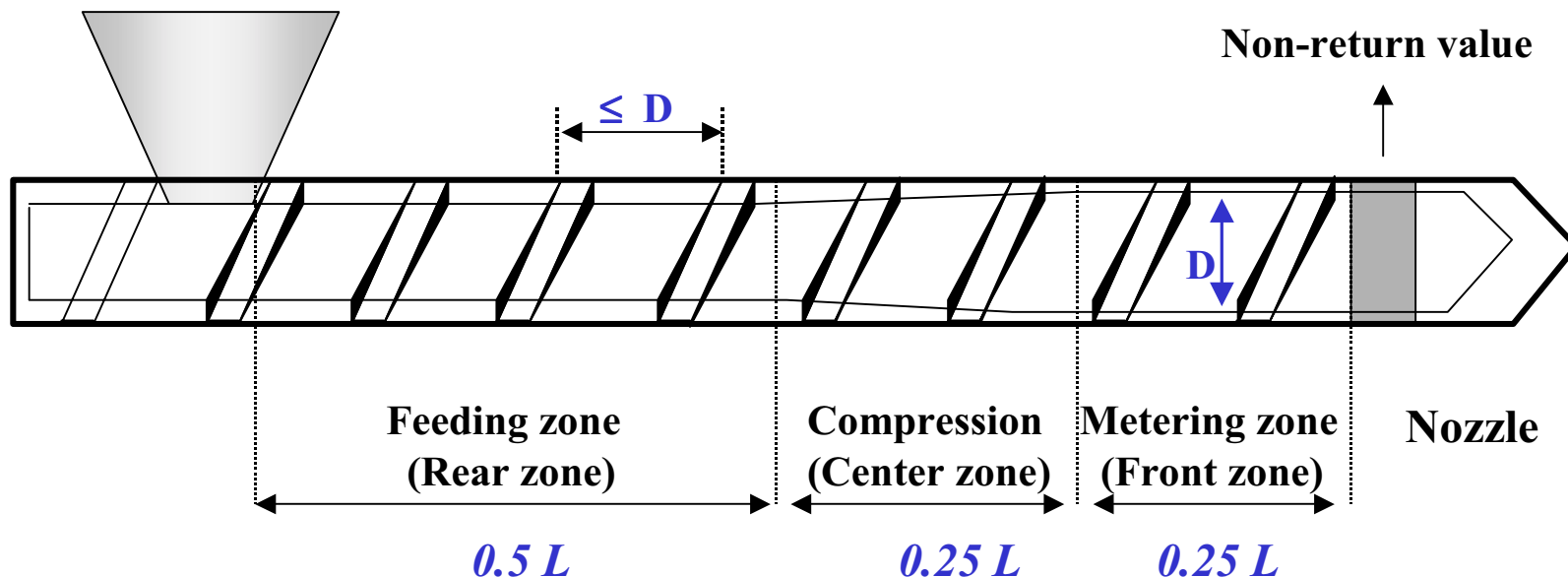
# **KEPITAL**

## **Injection Molding Guide**

*KEP Research Center*

**KOREA ENGINEERING PLASTICS CO., LTD.**

### 1. Molding temperature



<b>Standard</b>	330-340 °F (160-170 °C)	355 °F (180 °C)	375°F (190 °C)	355-410°F(180-210 °C)
<b>Anti-wear</b>	340-375 °F (180-200 °C)	355 °F (180 °C)	355°F (180 °C)	355-400°F(180-200 °C)
<b>Reinforced</b>	355 °F (180 °C)	375 °F (190 °C)	390°F (200 °C)	355-410°F(180-210 °C)
<b>Impact resistance</b>	340 °F (170 °C)	355 °F (190 °C)	375°F (190 °C)	355-400°F(180-200 °C)

## 2. Pre-drying condition

- 1) Natural pellets: 80 - 100 °C (175 - 210 °F), 3-4 hrs
- 2) Colored resin: 100 - 110 °C (210 - 230 °F), 3-4 hrs
- 3) Moisture content: not surpassing 0.1%

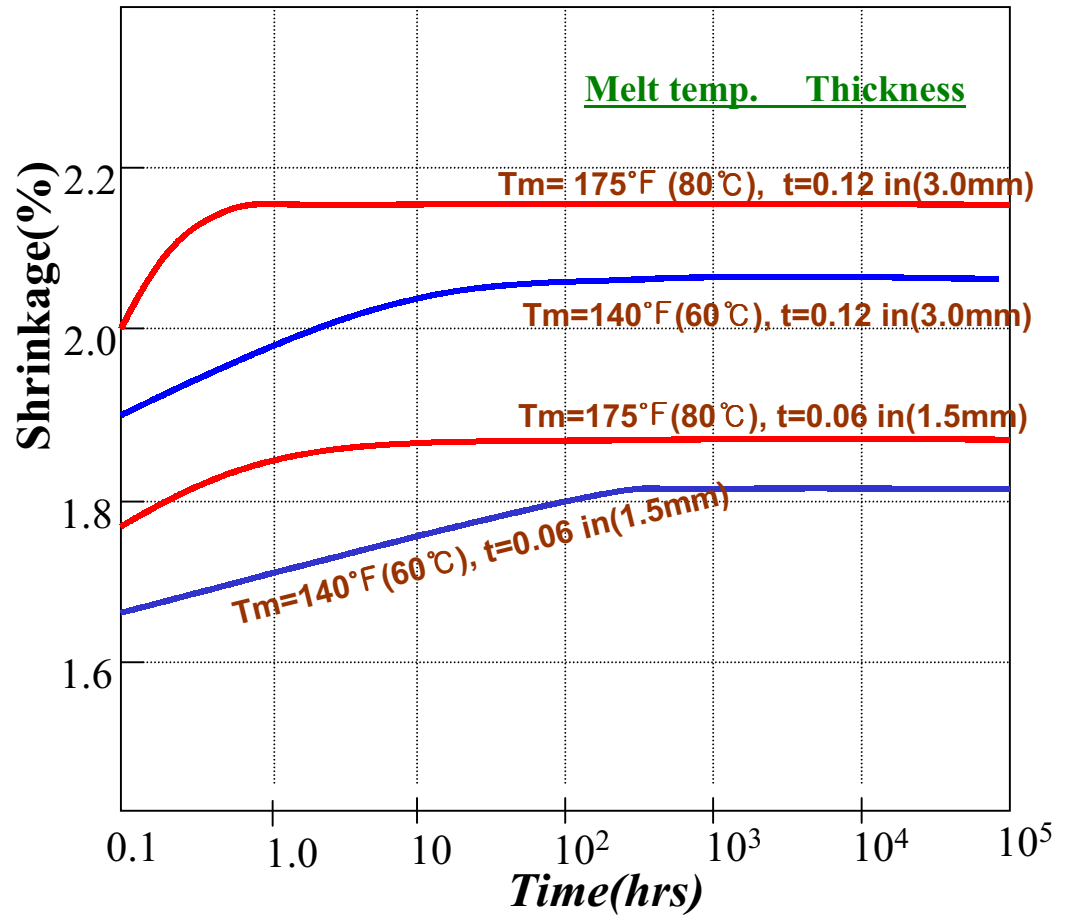
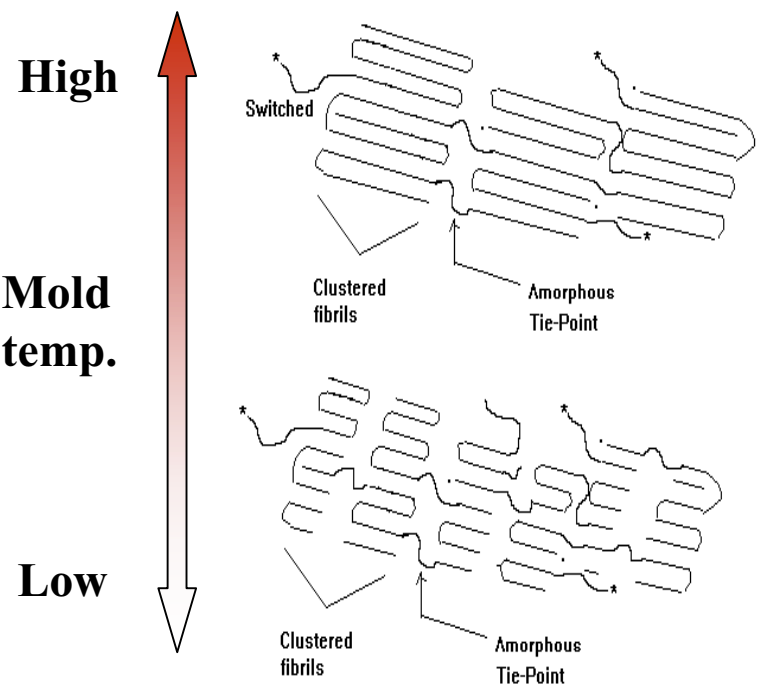
## 3. Mold temperature

Items	°C	°F
General range	40 ~ 100	105 ~ 210
Recommended	80	175
Impact modified FU, TE Grade	40 ~ 50	105 ~ 120
For better surface higher impact stable dimension	100 ~ 120	210 ~ 250

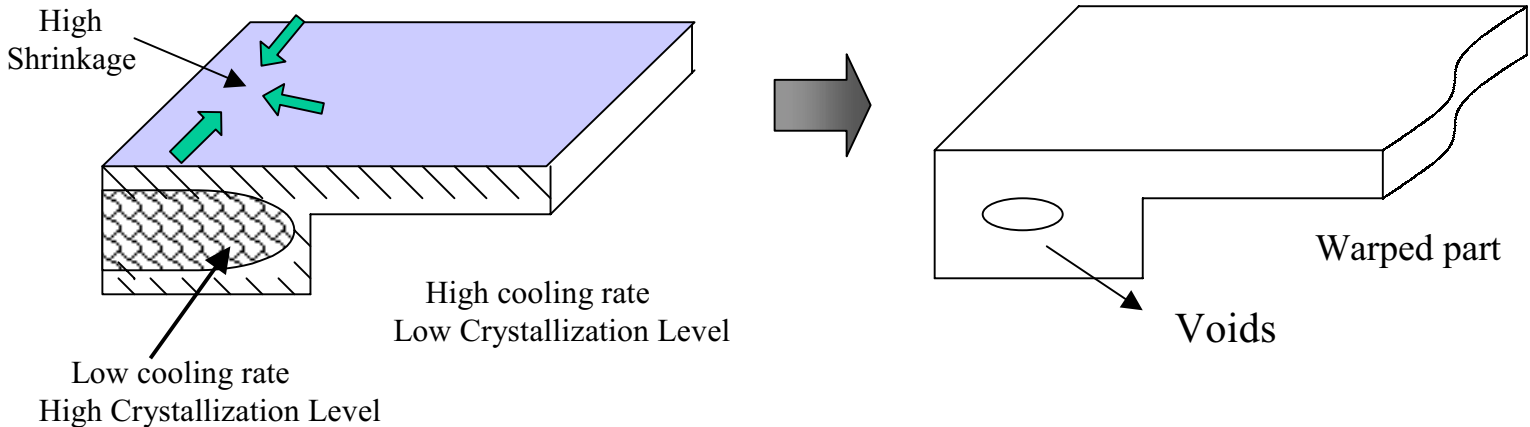
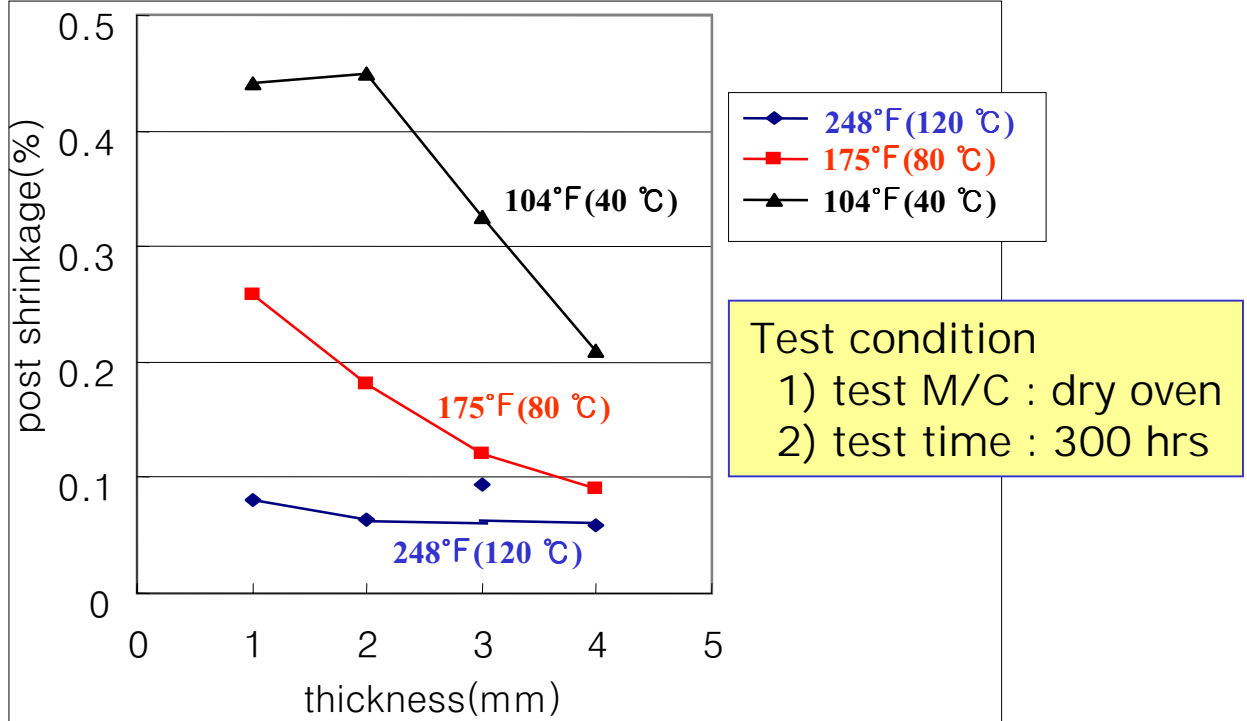
4. Injection time (Injection time + Hold time) > **Gate seal time**

5. Cooling time ( $a \cdot t^2$ )  $\propto$  second power of thickness

# Molding shrinkage upon mold temp. & thickness



# Post Molding Shrinkage upon Mold temperature & thickness



6. Pressure Range

Injection Pressure(IP)	KEPITAL F20 (MI=9)
	7~17 kpsi (50~120MPa)

Hold Pressure (HP) : 60% ~ 90% of Injection Pressure

Turning point from IP to HP: 80 ~ 90% filling of cavity based on short-shot theory

Back Pressure: 71 ~ 142 psi (5 ~ 10 kg/cm<sup>2</sup>) => **Homo-POM needed more caution**

7. Injection speed

Standard: 0.2 ~ 2.0 in/sec (5 ~ 50 mm/sec = 0.3 ~ 3 m/min )

Injection Rate	Fast ←	→ Slow
Part Design	Thin Parts	Thick Parts
KEPITAL Grade	Std. < impact < Anti-wear < Conductive	

8. Screw RPM: 80 ~ 120

9. Material replacement and Work Interruption

1) It is recommended that cylinder should be cleaned with PE, PP or PS before and after processing of KEPITAL

2) In case of work interruption, you need to purge out molten KEPITAL inside cylinder with above materials, and maintain the temperature of cylinder at 165°C (329 , melting point of polyacetal copolymer)