

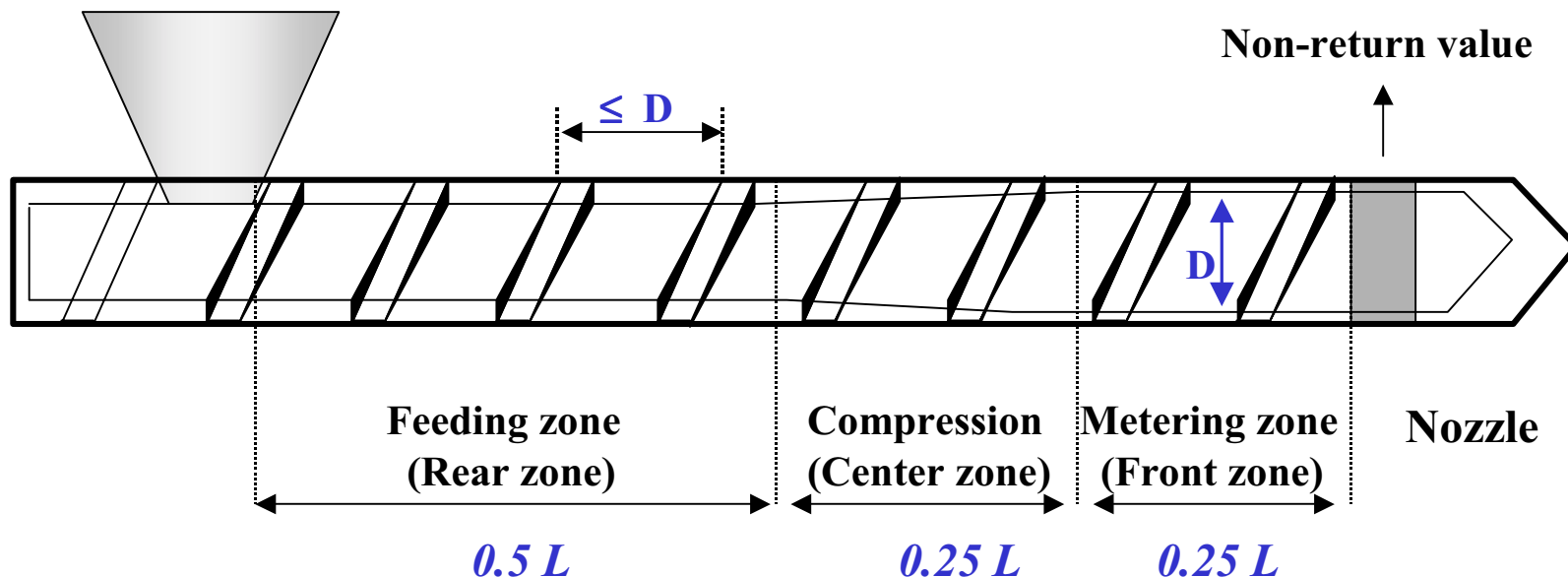
# **KEPITAL**

## **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%

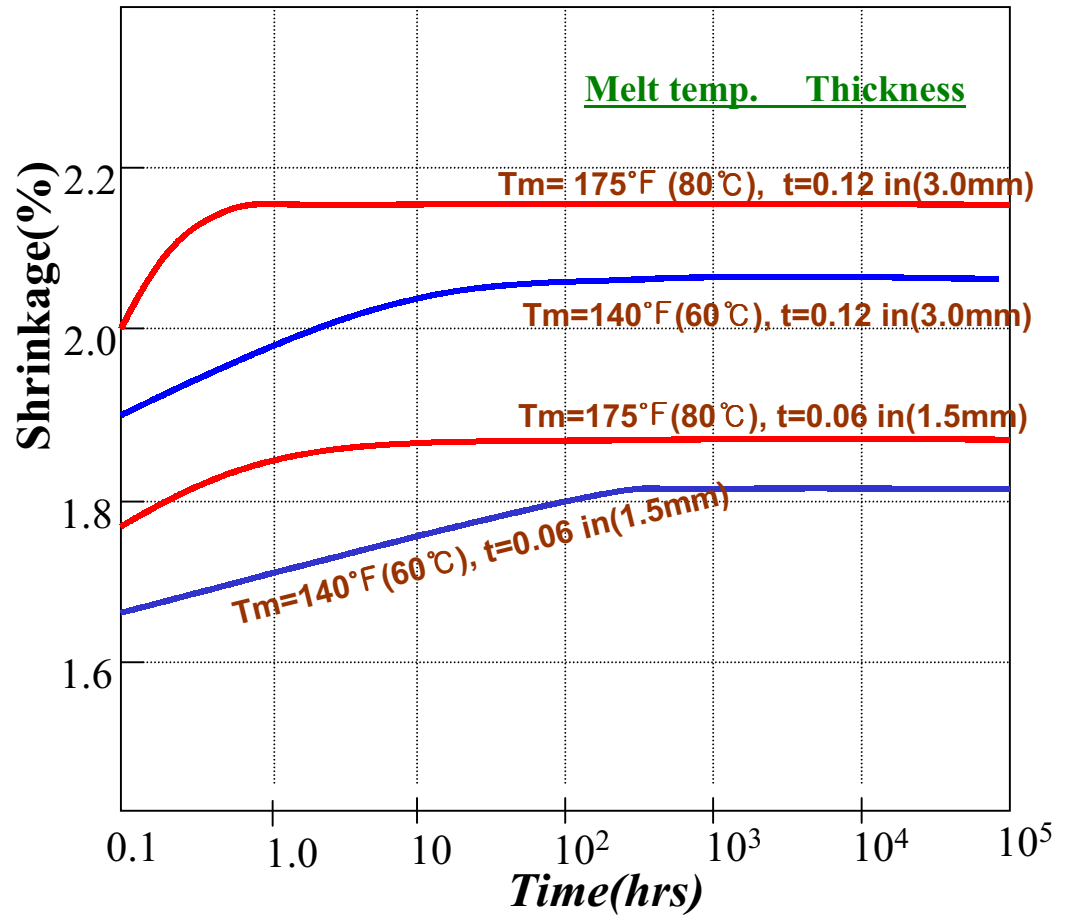
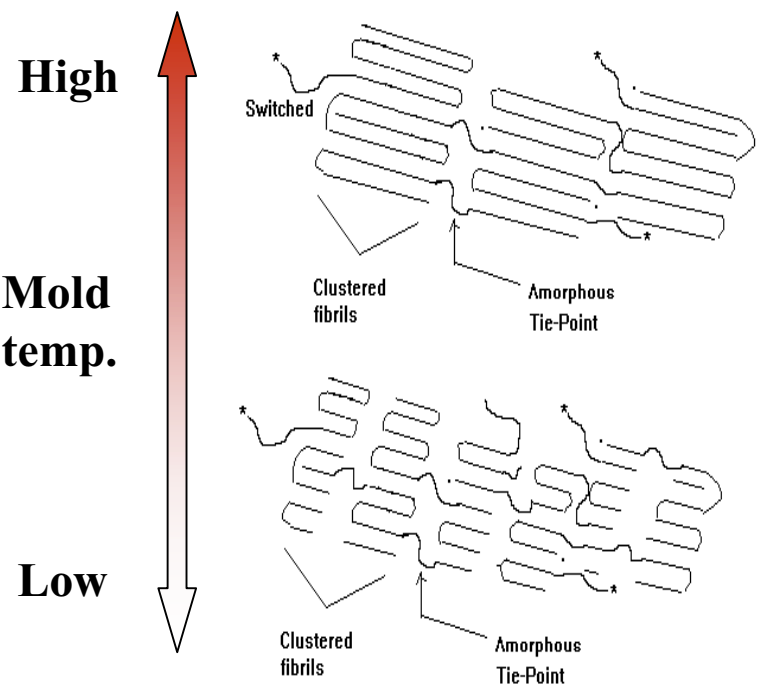
## 3. Mold temperature

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

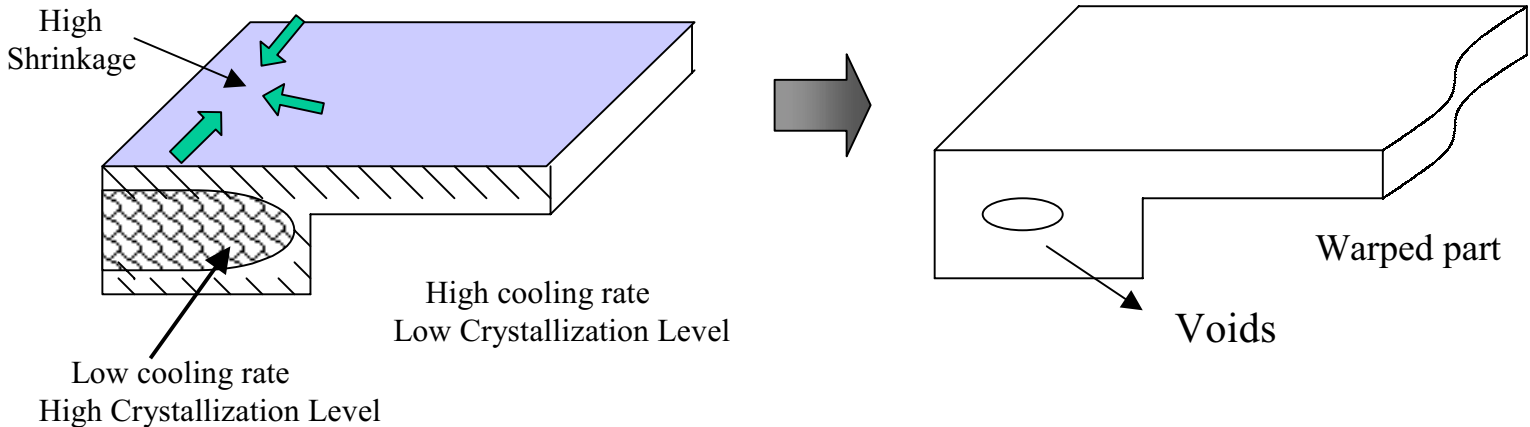
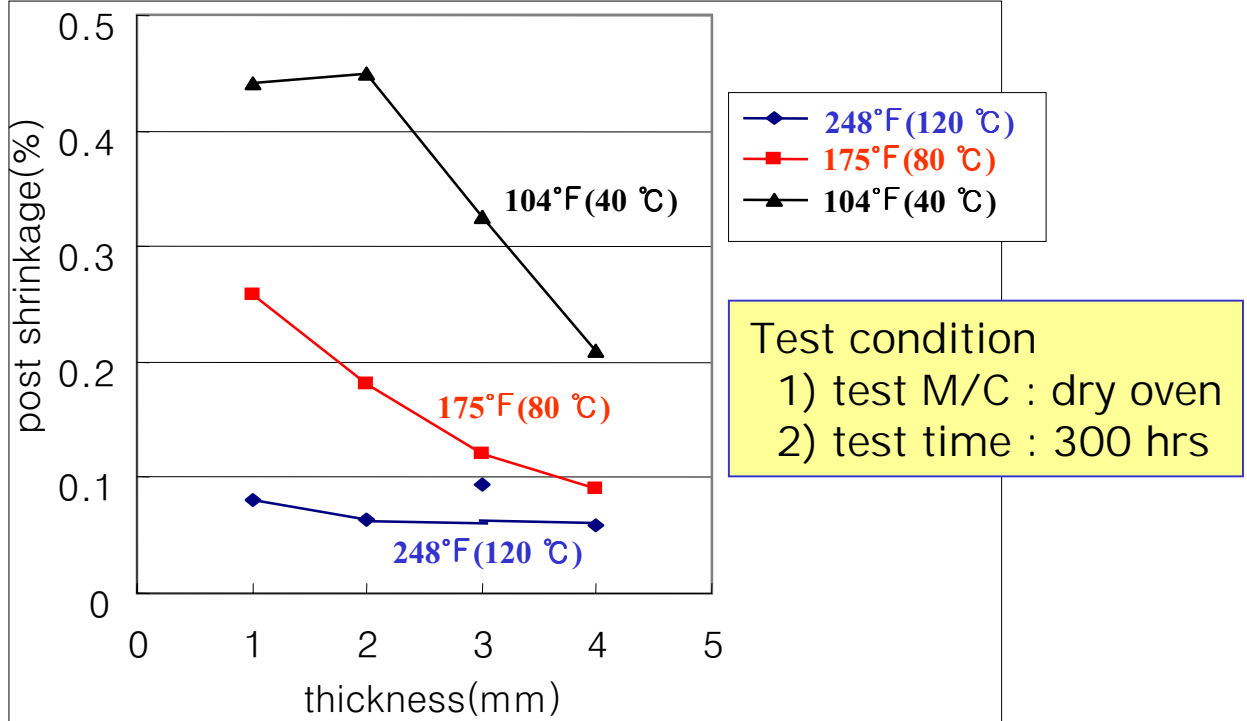
4. Injection time (Injection time + Hold time) > **Gate seal time**

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)