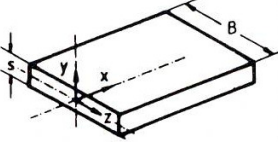
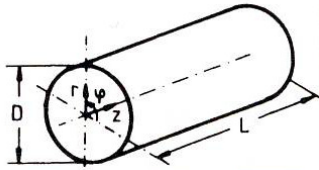
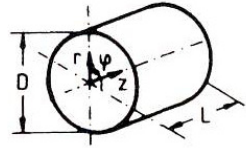
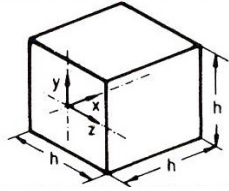
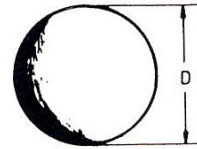
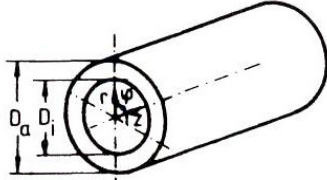
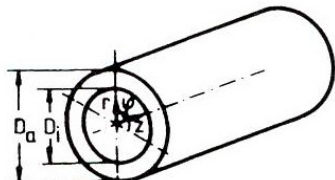


Geometry	Boundary condition	Equation
	Plate $\dot{Q}_z = 0$ $\dot{Q}_x = 0$	$t_c = \frac{s^2}{\pi^2 \cdot a} \cdot \ln \left(\frac{8}{\pi^2} \cdot \frac{T_M - \bar{T}_W}{\bar{T}_E - \bar{T}_W} \right)$ $t_c = \frac{s^2}{\pi^2 \cdot a} \cdot \ln \left(\frac{4}{\pi} \cdot \frac{T_M - \bar{T}_W}{\hat{T}_E - \bar{T}_W} \right)$
	Cylinder $\dot{Q}_\phi = 0$ $\dot{Q}_z = 0$ $L \gg d$	$t_c = \frac{D^2}{23,14 \cdot a} \cdot \ln \left(0,692 \cdot \frac{T_M - \bar{T}_W}{\bar{T}_E - \bar{T}_W} \right)$ $t_c = \frac{D^2}{23,14 \cdot a} \cdot \ln \left(1,602 \cdot \frac{T_M - \bar{T}_W}{\hat{T}_E - \bar{T}_W} \right)$
	Cylinder $\dot{Q}_\phi = 0$ $L \sim d$	$t_c = \frac{1}{\left(\frac{23,14}{D^2} + \frac{\pi^2}{L} \right) \cdot a} \cdot \ln \left(0,561 \cdot \frac{T_M - \bar{T}_W}{\bar{T}_E - \bar{T}_W} \right)$ $t_c = \frac{1}{\left(\frac{23,14}{D^2} + \frac{\pi^2}{L} \right) \cdot a} \cdot \ln \left(2,04 \cdot \frac{T_M - \bar{T}_W}{\hat{T}_E - \bar{T}_W} \right)$
	Cube	$t_c = \frac{h^2}{3 \cdot \pi^2 \cdot a} \cdot \ln \left(0,533 \cdot \frac{T_M - \bar{T}_W}{\bar{T}_E - \bar{T}_W} \right)$ $t_c = \frac{h^2}{3 \cdot \pi^2 \cdot a} \cdot \ln \left(2,064 \cdot \frac{T_M - \bar{T}_W}{\hat{T}_E - \bar{T}_W} \right)$
	Sphere	$t_c = \frac{D^2}{4 \cdot \pi^2 \cdot a} \cdot \ln \left(2 \cdot \frac{T_M - \bar{T}_W}{\hat{T}_E - \bar{T}_W} \right)$
	Hollow cylinder $\dot{Q}_\phi, \dot{Q}_z = 0$ $r < \frac{D_i}{2}$ $\dot{Q}_r = 0$	Same as plate with $s = D_a - D_i$
	Hollow cylinder $\dot{Q}_\phi, \dot{Q}_z = 0$	Same as plate with $s = \frac{(D_a - D_i)}{2}$

t_c – cooling time

a – thermal diffusivity

T_M – Melt temperature

$\bar{T}_W$ – Average cavity – wall temperature

$\bar{T}_E$ – Mean demolding temperature

$\hat{T}_E$ – Maximum demolding temperature

