

NOMENCLATURE

x, y, z	Rectangular coordinates
r, θ, ϕ	Polar coordinates
r, θ, z	Cylindrical coordinates
α, β, γ	Orthogonal curvilinear coordinates
ξ, η	Elliptical coordinates
X, Y, Z	Components of a body force per unit volume
$\bar{X}, \bar{Y}, \bar{Z}$	Components of a distributed surface force per unit area.
$(\sigma_x)_T, (\sigma_y)_T, (\sigma_z)_T$	Normal components of stress parallel to x , y and z axes in the presence of temperature.
$(\hat{x}x)_T, (\hat{y}y)_T, (\hat{z}z)_T$	Normal components of stress parallel of x , y and z axes in the presence of temperature.
$(\hat{r}r)_T, (\hat{\theta}\theta)_T, (\hat{\phi}\phi)_T$	Normal components of stress in polar coordinates in the presence of temperature.
$(\hat{r}r)_T, (\hat{\theta}\theta)_T, (\hat{z}z)_T$	Normal components of stress in cylindrical coordinates in the presence of temperature.
$(\hat{\alpha}\alpha)_T, (\hat{\beta}\beta)_T$	Normal components of stress in curvilinear coordinates in the presence of temperature.
$(\hat{\xi}\xi)_T, (\hat{\eta}\eta)_T$	Normal components of stress in elliptical coordinates in the presence of temperature.

$$(\sigma_x)_c, (\sigma_y)_c, (\sigma_z)_c$$

Normal stress components in cartesian coordinates in the absence of temperature.

$$(\hat{xx})_c, (\hat{yy})_c, (\hat{zz})_c$$

Normal stress components in cartesian coordinates in the absence of temperature.

$$(\hat{rr})_c, (\hat{\theta\theta})_c, (\hat{\phi\phi})_c$$

Normal components of stress in polar coordinates in the absence of temperature.

$$(\hat{r}\hat{r})_c, (\hat{\theta}\hat{\theta})_c, (\hat{z}\hat{z})_c$$

Normal components of stress in cylindrical coordinates in the absence of temperature.

$$(\hat{\alpha\alpha})_c, (\hat{\beta\beta})_c$$

Normal components of stress in curvilinear coordinates in the absence of temperature.

$$(\hat{\xi\xi})_c, (\hat{\eta\eta})_c$$

Normal components of stress in elliptical coordinates in the absence of temperature.

$$(\sigma_{xy})_T, (\sigma_{xz})_T, (\sigma_{zy})_T$$

Shearing stress components in rectangular coordinates in the presence of temperature.

$$(\hat{xy})_T, (\hat{yz})_T, (\hat{zx})_T$$

Shearing stress components in rectangular coordinates in the presence of temperature.

$$(\hat{r}\hat{\theta})_T, (\hat{\theta}\hat{\phi})_T, (\hat{r}\hat{\phi})_T$$

Shearing stress components in polar coordinates in the presence of temperature.

$$(\hat{r}\hat{\theta})_T, (\hat{\theta}\hat{z})_T, (\hat{z}\hat{r})_T$$

Shearing stress components in cylindrical coordinates in the presence of temperature.

$$\sigma_{\rho\rho}, \sigma_{\theta\theta}, \sigma_{zz}, \sigma_{\rho z}$$

Stress tensor in cylindrical system.

$$(\hat{\alpha\beta})_T, (\hat{\beta\gamma})_T, (\hat{\gamma\alpha})_T$$

Shearing stress components in curvilinear coordinates in the presence of temperature.

$$(\hat{\xi\eta})_T, (\hat{\eta z})_T, (\hat{\xi z})_T$$

Shearing stress components in elliptical coordinates in

$(\sigma_{xy})_c, (\sigma_{yz})_c, (\sigma_{zx})_c$	the presence of temperature. Shearing stress components in cartesian coordinates in the absence of temperature.
$(\hat{r}\hat{\theta})_c, (\hat{\theta}\hat{\phi})_c, (\hat{r}\hat{\phi})_c$	Shearing components of stress in polar coordinates in the absence of temperature.
$(\hat{r}\hat{\theta})_c, (\hat{\theta}\hat{z})_c, (\hat{z}\hat{r})_c$	Shearing components of stress in cylindrical coordinates in the absence of temperature.
$(\hat{\alpha}\hat{\beta})_c, (\hat{\beta}\hat{\gamma})_c, (\hat{\gamma}\hat{\alpha})_c$	Shearing components of stress in curvilinear coordinates in the absence of temperature.
$(\hat{\xi}\hat{\eta})_c$	Shearing components of stress in elliptical coordinates in the absence of temperature.
u_T, v_T, w_T	Components of displacements in the presence of temperature.
$u_\alpha, u_\beta, u_\gamma$	Components of displacements in curvilinear coordinates.
u_r, u_θ, u_ϕ	Components of displacements in polar coordinates.
u_r, u_θ, u_z	Components of displacements in cylindrical coordinates.
u_c, v_c, w_c	Components of displacements in the absence of temperature.
$(\epsilon_x)_T, (\epsilon_y)_T, (\epsilon_z)_T$	Components of strain in the presence of temperature in the x,y,z directions respectively.
$(\epsilon_x)_c, (\epsilon_y)_c, (\epsilon_z)_c$	Components of strain in the absence of temperature in the x,y,z directions respectively.
$\epsilon_r, \epsilon_\theta, \epsilon_\phi$	Components of strain in polar coordinates.
$\epsilon_r, \epsilon_\theta, \epsilon_z$	Components of strain in cylindrical coordinates.

E	Young's modulus.
G, μ	Modulus of elasticity / Modulus of rigidity.
σ, γ, η	Poisson's ratio.
$\mu = G, \lambda = \frac{\nu E}{(1 + \nu)(1 - 2\nu)}$	Lame's constants.
ϕ	Stress function / Displacement potential function.
t	Time
T_0	Absolute temperature
T	Temperature
α / α_1	Coefficients of linear thermal expansion.
E_1, E_2	Young's moduli in the x and y directions respectively.
K_2	Stress intensity factor at the boundary of the externally cracked region.
K_a^*	Stress intensity factors at the boundaries $r=a$.
K_b	Stress intensity factors at the boundaries $r=b$.
ν_1	Ratio of the contraction parallel to x axis to the extension parallel to y axis.
ν_2	Ratio of the contraction parallel to y axis to the extension parallel to x axis.
α_1	Coefficient of linear thermal expansion in the x axis.
α_2	Coefficient of linear thermal expansion in the y axis.
α_3	Coefficient of linear thermal expansion in the z axis.
φ	Love function.
$\delta(t)$	Dirac - delta function.
$H(\eta)$	Heavyside unit function.

F	Hypergeometric function.
J_0	Bessel function of first kind and zero order.
I,	Bessel function of second kind and first order.
$\theta(r,z)$	Temperature function.