LIST OF SYMBOLS

A, B_0,C	=	Material constants on Voce hardening model
A, B_0,B_1,C	=	Material constants on modified Voce hardening model
F, G,…,N	=	Coefficients in the Hill 1948 yield criterion
D_{RD}	=	Diameter of the samples in the rolling direction
D_{TD}	=	Diameter of the samples in the transverse direction
D_{RD}^0	=	Initial diameter of the samples in the rolling direction
D_{TD}^0	=	Initial diameter of the samples in the transverse direction
D_0	=	Initial diameter of hole
D_f	=	Diameter at failure of the hole
e	=	Sheet thickness in M-K model
J_2	=	Second invariant of the stress deviatoric tensor
K	=	Strength coefficient
L'	=	First order of linear functions of the deviatoric stress
L''	=	Second order of linear functions of the deviatoric stress
M	=	Exponent used in Barlat 2000 yield criterion
m	=	Strain rate sensitivity
n	=	Strain hardening coefficient
p	=	Bulge pressure in the pole
R	=	Radius of curvature at the pole
r	=	Anisotropy coefficient
r_0	=	Anisotropy coefficient at 0 degree from rolling direction
r_{45}	=	Anisotropy coefficient at 45 degree from rolling direction
r_{90}	=	Anisotropy coefficient at 90 degree from rolling direction
r_b	=	Balanced biaxial yield stress
S	=	Stress deviatoric tensor
s	=	Deviatoric stress tensor in Barlat 2000 yield criterion
S_1	=	Principal deviatoric stress in x axial
S_2	=	Principal deviatoric stress in y axial
S_3	=	Principal deviatoric stress in z axial
S'	=	First order of deviatoric stress
S''	=	Second order of deviatoric stress
T	=	Transformation matrix in Barlat 2000 yield criterion
t_0	=	Initial thickness
α	=	Stress ratio
α	=	Strain increment ratio for an isotropic material
$\alpha_1, \ldots \alpha_8$	=	Coefficients in the Barlat 2000 yield criterion
f_0	=	Initial geometrical Imperfection factor of M-K analysis
ε_1	=	Principal plastic strain in x axial
ε_2	=	Principal plastic strain in y axial
ε_3	=	Principal plastic strain in z axial

ε_{RD}	=	True strain in rolling direction
ε_{TD}	=	True strain in transverse direction
ε_{t}	=	Thickness strain
ε_{xx}	=	Planar component of strain tensor in x axial
ε_{yy}	=	Planar component of strain tensor in y axial
ε_{zz}	=	Planar component of strain tensor in z axial
ε_{xy}	=	Planar components of stress tensor in xy plane
$\bar{\varepsilon}$	=	Effective Strain
$\bar{\varepsilon}_{o}$	=	Effective elastic strain on Swift hardening model
$\bar{\varepsilon}_{p}$	=	Effective plastic strain on Swift hardening model
$d\bar{\varepsilon}$	=	Increment of effective plastic strain
$d\varepsilon_{ij}$	=	Components of strain increment tensor
p	=	Strain ratio
τ_{xy}	=	Shear stress in xy plane
τ_{yz}	=	Shear stress in yz plane
τ_{zx}	=	Shear stress in zx plane
σ_{1}	=	Principal stress in x axial
σ_{2}	=	Principal stress in y axial
σ_{3}	=	Principal stress in z axial
σ_{0}	=	Uniaxial yield stress at 0 degree from rolling direction
σ_{45}	=	Uniaxial yield stress at 45 degree from rolling direction
σ_{90}	=	Uniaxial yield stress at 90 degree from rolling direction
σ_{b}	=	Balanced biaxial yield stress
σ_{m}	=	Mean stress or Hydrostatic stress
σ_{nn}	=	Components of stress tensor in the groove, n axial
σ_{nt}	=	Components of stress tensor in the groove, nt plane
σ_{tt}	=	Components of stress tensor in the groove, t axial
σ_{xx}	=	Planar component of stress tensor in x axial
σ_{yy}	=	Planar component of stress tensor in y axial
σ_{xy}	=	Planar components of stress tensor in xy plane
$\bar{\sigma}$	=	Effective stress
ϕ	=	Yield function
η	=	Stress triaxiality
Ψ_{0}	=	Initial angle between the M-K imperfection and direction y
$\xi(\alpha)$	=	Ratio of effective stress to major true stress