

The viscous criterion (VC) for each rib is calculated as follows:

$$VC(t)_i = 1.0 * V(t)_i * \frac{D(t)_i}{138mm} \quad (\text{Eq. 3})$$

where,

$V(t)_i$  = the velocity of rib  $i$  at time  $t$ , from Eq. 2 (m/s)

$D(t)_i$  = the deflection of rib  $i$  at time  $t$ , measured with linear potentiometers and filtered to SAE CFC 180 (mm).

A total struck side lateral pelvic force ( $F_P(t)$ ) is computed by adding the instantaneous lateral acetabulum ( $F_A(t)$ ) force with the instantaneous lateral iliac force ( $F_I(t)$ ):

$$F_P(t) = F_A(t) + F_I(t) \quad (\text{Eq. 4})$$

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