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## 0.1 title : KM-620 Equations

### 1 KM-620.1 and KM-620.2

$$\epsilon_{ts}(\sigma_t, E_y, \gamma_1, \gamma_2, \epsilon_p) = \begin{cases} \frac{\sigma_t}{E_y} & \text{if } (\gamma_1 + \gamma_2 \leq \epsilon_p) \\ \frac{\sigma_t}{E_y} + \gamma_1 + \gamma_2 & \text{otherwise} \end{cases}$$

### 2 KM-620.3

$$\gamma_1(\epsilon_1, H) = \frac{\epsilon_1}{2} \cdot (1 - \tanh(H))$$

### 3 KM-620.4

$$\gamma_2(\epsilon_2, H) = \frac{\epsilon_2}{2} \cdot (1 + \tanh(H))$$

### 4 KM-620.5

$$\epsilon_1(\sigma_t, A_1, m_1) = \left(\frac{\sigma_t}{A_1}\right)^{\frac{1}{m_1}}$$

### 5 KM-620.6

$$A_1(\sigma_{ys}, \epsilon_{ys}, m_1) = \frac{\sigma_{ys} \cdot (1 + \epsilon_{ys})}{(\log(1 + \epsilon_{ys}))^{m_1}}$$

### 6 KM-620.7

$$m_1(R, \epsilon_p, \epsilon_{ys}) = \frac{\log(R) + \epsilon_p - \epsilon_{ys}}{\log\left(\frac{\log(1 + \epsilon_p)}{\log(1 + \epsilon_{ys})}\right)}$$

### 7 KM-620.8

$$\epsilon_2(\sigma_t, A_2, m_2) = \left(\frac{\sigma_t}{A_2}\right)^{\frac{1}{m_2}}$$

### 8 KM-620.9

$$A_2(\sigma_{uts}, m_2) = \frac{\sigma_{uts} \cdot e^{m_2}}{m_2}$$

## 9 KM-620.10

$$H\left(\sigma_t,\sigma_{ys},\sigma_{uts},K\right)=\frac{2\cdot\left(\sigma_t-\left(\sigma_{ys}+K\cdot\left(\sigma_{uts}-\sigma_{ys}\right)\right)\right)}{K\cdot\left(\sigma_{uts}-\sigma_{ys}\right)}$$

## 10 KM-620.11

$$R\left(\sigma_{ys},\sigma_{uts}\right)=\frac{\sigma_{ys}}{\sigma_{uts}}$$

## 11 KM-620.12

$$\epsilon_{ys}()=0.002$$

## 12 KM-620.13

$$K\left(R\right)=1.5\cdot R^{1.5}-0.5\cdot R^{2.5}-R^{3.5}$$

## 13 KM-620.14

$$\sigma_{utst}\left(\sigma_{uts},m_2\right)=\sigma_{uts}\cdot e^{m_2}$$