Certified Rigger – Formula Table

Standardized Formulas

$$F_1 = \frac{F_A D_2}{S}$$

$$F_{1V} = \frac{F_A D_{2H}}{S}$$

$$F_{1L} = \left(\frac{F_A D_{2H}}{S}\right)\left(\frac{D_{1L}}{D_{1V}}\right)$$

$$F_{1H} = \left(\frac{F_A D_{2H}}{S}\right)\left(\frac{D_{1H}}{D_{1V}}\right)$$

$$F_{1L} = \left(\frac{F_A D_{2H\text{new}}}{S_{\text{new}}}\right)\left(\frac{D_{1L}}{D_{1V}}\right)$$

$$F_2 = \frac{F_A D_1}{S}$$

$$F_2 = \frac{-F_A D_1}{S}$$

$$F_{2V} = \frac{F_A D_{1H}}{S}$$

$$F_{2L} = \left(\frac{F_A D_{1H}}{S}\right)\left(\frac{D_{2L}}{D_{2V}}\right)$$

$$F_{2H} = \left(\frac{F_A D_{1H}}{S}\right)\left(\frac{D_{2H}}{D_{2V}}\right)$$

$$F_{2L} = \left(\frac{F_A D_{1H\text{new}}}{S_{\text{new}}}\right)\left(\frac{D_{2L}}{D_{2V}}\right)$$

$$D_{\text{leg}} = \sqrt{\Delta X^2 + \Delta Y^2 + \Delta Z^2}$$

Other Formulas

$$A_1 : A_2 = B_1 : B_2 = C_1 : C_2$$

$$C = \sqrt{A^2 + B^2}$$

$$C = \sqrt{AA + BB}$$

$$F_1 = \frac{D_1 W_1 + D_2 W_2 - D_3 W_3}{S}$$

$$F = \frac{W D_F}{D_S} + W$$

$$F_1 = \frac{D_2 W}{S}$$

$$F_2 = \frac{D_1 W}{S}$$

$$F_2 = \frac{-D_1 W}{S}$$

$$F_2 = \frac{D_5 W_2 + D_6 W_3 - D_4 W_1}{S}$$

$$F_H = \frac{HW}{V}$$

$$F_{H1} = \frac{W H_1 H_2}{V_1 H_2 + V_2 H_1}$$

$$F_R = \frac{P \sin \angle a}{\sin \frac{\angle a}{2}}$$

$$F_{V1} = \frac{W V_1 H_2}{V_1 H_2 + V_2 H_1}$$

$$F_{V2} = \frac{W V_2 H_1}{V_1 H_2 + V_2 H_1}$$

$$L = \sqrt{V^2 + H^2}$$

$$L_1 = \sqrt{(V_1 - V_3)^2 + (H_1 - H_3)^2 + (D_1 - D_3)^2}$$

$$L_1 = \sqrt{(V_1 - V_3)^2 + (H_1 - H_3)^2}$$

$$L_2 = \sqrt{(V_2 - V_3)^2 + (H_2 - H_3)^2 + (D_2 - D_3)^2}$$

$$P_1 = \sqrt{(X_1 - X_4)^2 + (Y_1 - Y_4)^2 + (Z_1 - Z_4)^2}$$

$$P_2 = \sqrt{(X_2 - X_4)^2 + (Y_2 - Y_4)^2 + (Z_2 - Z_4)^2}$$

$$P_3 = \sqrt{(X_3 - X_4)^2 + (Y_3 - Y_4)^2 + (Z_3 - Z_4)^2}$$

$$T_1 = \frac{W L_1 H_2}{V_1 H_2 + V_2 H_1}$$

$$T_2 = \frac{W L_2 H_1}{V_1 H_2 + V_2 H_1}$$

$$T_{L1} = \frac{W D_2 L_1}{SH}$$

$$T_{L1} = \frac{W D_2 L_1}{H_1 D_2 + H_2 D_1}$$

$$T_{L2} = \frac{W D_1 L_2}{SH}$$

$$T_{L2} = \frac{W D_1 L_2}{H_1 D_2 + H_2 D_1}$$

Note: This list of formulas is provided by ETCP to aid candidates in completing the examination. However, it should not be considered a complete and exhaustive list of formulas that could be used in performing calculations on the exam.

Revised 01/2010