

Erratum: “A Proposed General Method of Stress Analysis for Tubesheet of Heat Exchanger” [ASME J. Pressure Vessel Technol., 2016, 138(6), p. 061201; DOI: 10.1115/1.4033530]

This erratum corrects errors in the originally published paper.

In Appendix C—Sec. C.1 on page 061205-9, the definition of coefficients for Eq. (C4) is corrected as follows:

where $a = D_1^*$, $b = +H_{a1}$, and $c = 2k_w$.

In Appendix C—Sec. C.1 on page 061205-9, Eq. (C5a) is corrected as follows:

$$x_1, x_2 = -\frac{H_{a1}}{2D_1^*} \pm i \frac{\sqrt{4(2k_w)D_1^* - H_{a1}^2}}{2D_1^*} = \lambda^2 \cdot e^{\pm 2\theta i} \quad (C5a)$$

In Appendix C—Sec. C.1 on page 061205-9, Eq. (C5c) is corrected as follows:

$$2\theta = \text{Arc cos} \left[-\sqrt{H_{a1}^2 / (8k_w D_1^*)} \right] \quad (C5c)$$

In Appendix C—Sec. C.1 on page 061205-10, Eqs. (C9a)–(C9c) are corrected as follows:

$$\sqrt{\frac{H_{a1}^2}{8k_w D_1^*}} = \frac{\sqrt{\left| \frac{1}{2} \left(\frac{H_{a1}}{D_1^*} + \frac{H_{a1}}{D_1^*} \right) \right|^2}}{2\sqrt{\frac{k_w}{D_1^*} + \frac{k_w}{D_1^*}}} \ll 1 \quad (C9a)$$

$$\psi_{H1} = \frac{\sqrt{\left| \frac{1}{2} \left(\frac{H_{a1}}{D_1^*} + \frac{H_{a2}}{D_2^*} \right) \right|^2}}{2\sqrt{\frac{k_w}{D_1^*} + \frac{k_w}{D_2^*}}} \ll 1 \quad (C9b)$$

$$\psi_{H2} = \frac{\sqrt{\left| \frac{1}{2} \left(\frac{H_{a1}}{D_1^*} - \frac{H_{a2}}{D_2^*} \right) \right|^2}}{2\sqrt{\frac{k_w}{D_1^*} + \frac{k_w}{D_2^*}}} \ll 1 \quad (C9c)$$

In Appendix C—Sec. C.2 on page 061205-10, the definition of coefficients for Eq. (C16) is corrected as follows:

where $a = 1$, $b = +2H_1$, $c = \alpha^4 + H_1^2 - H_2^2$, and $d = -[H_2(\alpha_1^4 - \alpha_2^4) - H_1\alpha^4]$.

In Appendix C—Sec. C.2 on page 061205-10, Eq. (C19a) is corrected as follows:

$$Z_{1,H} = \left\{ \begin{array}{l} A_1 I_0(\sqrt{-x_1}r) + [C_1 U_0(\lambda r, \theta) + C_2 V_0(\lambda r, \theta)] \\ A_2 K_0(\sqrt{-x_1}r) + [A_3 \bar{U}_0(\lambda r, \theta) + A_4 \bar{V}_0(\lambda r, \theta)] \end{array} \right\} \quad (C19a)$$

In Appendix C—Sec. C.2 on page 061205-11, Eq. (C20) is corrected as follows:

$$Z_{1,H} = A_1 I_0(\sqrt{-x_1}r) + [C_1 U_0(\lambda r, \theta) + C_2 V_0(\lambda r, \theta)] \quad (C20)$$

In Appendix C—Sec. C.3 on page 061205-11, Eqs. (C26) and (C29) are corrected as follows:

$$\begin{aligned} \nabla^2 \cdot \nabla^2 Z_2 = & -(\alpha_1^4 - \alpha_2^4) \left[C_1 U_0 \left(\alpha r, \frac{\pi}{4} \right) + C_2 V_0 \left(\alpha r, \frac{\pi}{4} \right) \right] \\ & + 2 \left(\zeta_2 \frac{P_{a1}}{D_1^*} - \zeta_1 \frac{P_{a2}}{D_2^*} \right) \end{aligned} \quad (C26)$$

$$\nabla^2 \cdot \nabla^2 Z_2 = 2 \left(\zeta_2 \frac{P_{a1}}{D_1^*} - \zeta_1 \frac{P_{a2}}{D_2^*} \right) \quad (C29)$$

In Appendix C—Sec. C.3; on page 061205-11, Equations (C31a) and (C31b) are corrected as follows:

$$F_1 = (\zeta_2 - \zeta_1)[C_1 \cos 4\theta - C_2 \sin 4\theta] \quad (C31a)$$

$$F_2 = (\zeta_2 - \zeta_1)[C_1 \sin 4\theta + C_2 \cos 4\theta] \quad (C31b)$$

In Appendix C—Sec. C.4 on page 061205-12, expressions for b and d are corrected as follows:

$$b = +2H_1 \quad \text{and} \quad d = -[H_2(\alpha_1^4 - \alpha_2^4) - H_1\alpha^4] \approx 0$$

In Appendix C—Sec. C.4 on page 061205-12, Eq. (C39) and its solution are corrected as follows:

$$x^3 + 2H_1 x^2 + \alpha^4 x = 0 \quad (C39)$$

$$x_2, x_3 = -H_1 \pm i \sqrt{\alpha^4 - H_1^2} = \lambda^2 \cdot e^{\pm 2\theta i}$$

In Appendix C—Sec. C.4 on page 061205-12, expression for 2θ is corrected as follows:

$$2\theta = \text{Arc cos} \left[\frac{-H_1}{\alpha^2} \right] \rightarrow \frac{\pi}{2}$$

In Appendix E on page 061205-13, Eqs. (E2) and (E4) are corrected as follows:

$$\varphi_{f,si} = \frac{12}{h_{f,si}^3 E_{f,si} \ln \frac{R_{f,si}}{R_{si}}} \left\{ \begin{array}{l} -R_{m,si} M_{si} - \frac{h_{f,si}}{2} R_{m,si} Q_{si} \\ + \frac{(R_{G,si} - R_{si})}{4} (R_{G,si}^2 - R_{si}^2) P_{si} \\ -R_{B,si} W_{B,si} (R_{B,si} - R_{si}) \\ + R_{G,si} W_{G,si} (R_{G,si} - R_{si}) \\ + R_{m,si} N_{si} (R_{m,si} - R_{si}) \end{array} \right\} \quad (E2)$$

$$\varphi_{f,si} = \frac{12}{h_{f,si}^3 E_{f,si} \ln \frac{R_{f,si}}{R_{si}}} \left\{ \begin{array}{l} -R_{m,si} M_{si} - \frac{h_{f,si}}{2} R_{m,si} Q_{si} \\ + \frac{(R_{G,si} - R_{si})}{4} (R_{G,si}^2 - R_{si}^2) P_{si} \\ + R_{m,si} N_{si} (R_{m,si} - R_{G,si}) \\ - R_{B,si} W_{B,si} (R_{B,si} - R_{G,si}) \\ + (R_{G,si} - R_{si}) (R_{G,si}^2 - R_{si}^2) P_{si} / 2 \end{array} \right\} \quad (\text{E4})$$

In Appendix H on page 061205-15, Eqs. (H2) and (H4) are corrected as follows:

$$\nabla^2 \cdot \nabla^2 w_{Ai} = \frac{P_{si} - P_{ti}}{D_i} \quad (\text{H2})$$

$$\nabla^2 \cdot \nabla^2 w_{Ai} - \frac{\tilde{H}_{ai}}{D_i} \nabla^2 w_{Ai} = \frac{P_{si} - P_{ti}}{D_i} \quad (\text{H4})$$