Errata to

(2021)

September 30, 2022

Page 9: At the end of the first paragraph on the page, add the following additional sentence: “See Section 4.1.1 for more information on SBS and BRI.”

Page 40: In the equation under Equation (2-47), the final variable currently reads “W_{hg}” but should read “W_{hg}”.

Page 113: In Problem 3-29, the second and third sentences currently read “The air is heated with a finned heat exchanger with 78 ft^2 of heat transfer surface area and a UA value of 210 Btu/h·°F. Also, a steam spray system adds moisture to the air from saturated steam at 16 psia” but should read “The air is heated with a finned heat exchanger, then a steam spray system adds moisture to the air from saturated steam at 16 psia.”

Page 158: In the second full paragraph, the second sentence currently reads “Space level refers the load experienced by the individual occupied space or room and the heating and cooling required to maintain its specified conditions (temperature and humidity)” but should read “Space level refers to the load experienced by the individual occupied space or room and the heating and cooling required to maintain its specified conditions (temperature and humidity).”

Page 167: In Figure 5-5, the tabular data should match the data shown in the solution to Example 5-3. These data are repeated here, with the corrected values shown in bold:

<table>
<thead>
<tr>
<th>Element</th>
<th>R (Insulated Cavity)</th>
<th>R (Studs, Plates, and Headers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td>2</td>
<td>0.81</td>
<td>0.81</td>
</tr>
<tr>
<td>3</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>4</td>
<td>13.0</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>—</td>
<td>3.47</td>
</tr>
<tr>
<td>6</td>
<td>0.45</td>
<td>0.45</td>
</tr>
<tr>
<td>7</td>
<td>0.68</td>
<td>0.68</td>
</tr>
</tbody>
</table>

\[ R_1 = 17.61 \quad R_2 = 8.08 \]
Page 193: In the first paragraph of Section 5.7, the first sentence currently begins “Space loads are need to select...” but should begin “Space loads are needed to select....”

Page 199: Problem 5-16 currently reads “A 1 hp motor driving a pump is located in a space to be air conditioned. Determine heat dissipated to the space from the motor and pump.” but should read “A small electric 1 hp motor driving a pump is located in a space to be air conditioned. The motor is 4-pole enclosed. Determine heat dissipated to the space from the motor and pump.”

Page 239: The first sentence of Example 6-1 currently refers to Figures 6-4 and 6-5, but should refer to Figures 6-3 and 6-4.

Page 250: In Problem 6-2, the last sentence of item #2 currently reads “Provide your answer in MBH” but should read “Provide your answer in MMBtu.”

Page 251: In Problem 6-7, item #3 currently reads “Will this heat gain impact coil sensible load?” but should read “Will this heat gain impact the coil sensible load?”

Page 292: In the nomenclature under Equation (8.12), in the definition of the variable $C_s$, add the following additional text: Section $s$ is taken at the downstream (outlet) of a diverging junction and at the upstream (inlet) junction of a converging junction.

Page 300: The part of the Solution for Example 8-2 that is included on the top half of this page needs the corrections add additions noted in bold and underline below:

From Equation (8-2),

$$p_{v,c} = (2000/4005)^2 = 0.25 \text{ in. of water}$$

For Fitting 5-23, Table 8-5, with $\theta = 90^\circ$, and $V_s/V_c = 0.75$:

$$c_{c,s} = 0.03 \ (\text{We will call this } C_s)$$

Equation (8-2):

$$p_{v,s} = (1500/4005)^2 = 0.14 \text{ in. w.g.}$$

Then, to find straight-through loss by Equation (8-12),

$$\Delta p_t = C_s p_{v,s}$$

$$\Delta p_t = 0.03 \ (0.14) = 0.0042 \text{ in. of water (negligible)}$$

For the branch section, use the same fitting with $\theta = 90^\circ$ and $A_b/A_c = 0.6$.

In order to determine $Q_b/Q_c$, we use the knowledge that $A_x = A_x$ (“straight-through section”). From that we know $V_s/V_c$:

$$V_s/V_c = Q_s/Q_c = 1500/2000 = 0.75$$

$$Q_s = Q_c - Q_x$$

$$Q_b = 0.25Q_c \ (\text{substitute } Q_x = 0.75Q_c)$$

$$Q_b/Q_c = 0.25$$
Interpolation gives:

\[ C_{c,b} = 0.985 \text{ (We will call this } C_b) \]

\[ p_{v,b} = \left( \frac{1060}{4005} \right)^2 = 0.07 \text{ in. w.g.} \]

By Equation (8-13),

\[ \Delta p_t = C_b p_{v,b} \]

\[ \Delta p_t = 0.985 \times 0.07 = 0.069 \text{ in. of water} \]