

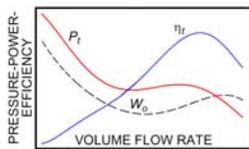
Additions and Corrections

The following presents additional information and technical errors found between June 15, 2016, and October 11, 2019, in the SI editions of the 2016, 2017, 2018, and 2019 *ASHRAE Handbook* volumes. Occasional typographical errors and nonstandard symbol labels will be corrected in future volumes. The most current list of Handbook additions and corrections is on the ASHRAE web site (www.ashrae.org).

The authors and editor encourage you to notify them if you find other technical errors. Please send corrections to: Handbook Editor, ASHRAE, 1791 Tullie Circle NE, Atlanta, GA 30329, or e-mail hkennedy@ashrae.org.

2016 HVAC Systems and Equipment

p. 21.3, Table 1. The performance curve for propeller fans should be as follows:



p. 24.7, Fig. 13. The correct SI graphic is below.

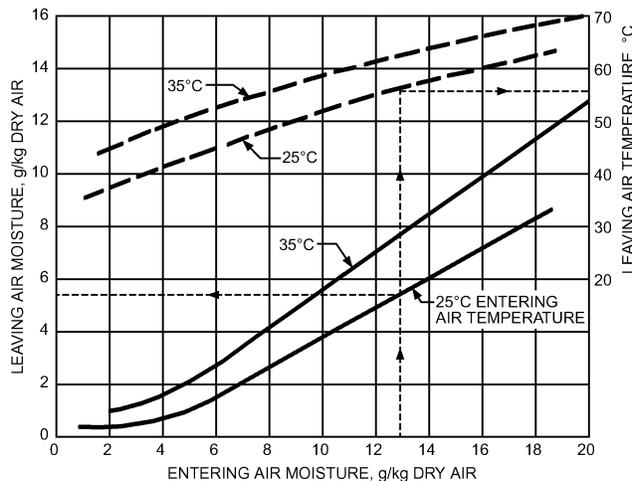


Fig. 13 Typical Performance Data for Rotary Solid Desiccant Dehumidifier

(from 2016 HVAC Systems and Equipment, p. 28.7)

p. 38.3. In the text preceding Equation 4, the term given as w_{io} should be w_{or} .

p. 38.37, Eq. (24). Remove “x” from end of equation.

2017 Fundamentals

p. 1.9, Eq. (23). Following the equation, add the following text: “where μ is degree of saturation W/W_s , dimensionless.”

p. 4.3, Table 2, 1st equation for hollow sphere. In the denominator, change the + to a –.

p. 4.20, Table 9. For Eq. (T9.10) for horizontal cylinder, the range should be $10^{-6} < Ra < 10^{13}$.

p. 4.21, Example 11. In list item number 1, the equation should be $t_f = (t_s + t_\infty)/2$.

p. 11.13, 2nd col. Change “Guideline 27” to “proposed Guideline 27P.”

p. 14.12, Examples 7 and 8. In Example 7, in the equation for E_{LX} , change “+ cos(68.62°)” to “– cos(90°)” and the result to 87.9 W/m². In Example 8, in the equation for E_{LX} , change “cos(68.64°)” to “cos(30°)” and the result to 11.8 W/m².

p. 14.14, 2nd col., 3rd paragraph from bottom. Change “6.3 K” to “3.6 K.”

p. 17.13, Infiltration and Ventilation. In the equation in the second sentence, change 1.1 to 1.4.

p. 18.5, Table 2. Under Health Care Facilities, the value for medical supply rooms should be 7.96.

p. 18.21, Eqs. (24) and (25). In Eq. (24), change $Z_{i,0}$ to $X_{i,0}$. The following paragraph should read “Equation (24) shows the need to separate $X_{i,0}$ because the contribution of current surface temperature to conductive flux cannot be collected with the other historical terms involving that temperature.” In Eq. (25), change $T_{si,j}$ to $T_{so,i,j}$.

p. 18.39, 1st col, definitions. The mention of Figure 18 of Chapter 34 of the 2011 *ASHRAE Handbook—HVAC Applications* should refer to that figure in the 2015 edition.

p. 18.49, calculations for q_{i1} to q_{i24} . The corrected equations are as follows:

$$\begin{aligned}
 q_{i,1} &= (0.44)(5.57)(23.2 - 23.9) = -1 \text{ W} \\
 q_{i,2} &= (0.44)(5.57)(22.8 - 23.9) = -3 \\
 q_{i,3} &= (0.44)(5.57)(22.4 - 23.9) = -4 \\
 q_{i,4} &= (0.44)(5.57)(22.1 - 23.9) = -4 \\
 q_{i,5} &= (0.44)(5.57)(21.9 - 23.9) = -5 \\
 q_{i,6} &= (0.44)(5.57)(22.6 - 23.9) = -3 \\
 q_{i,7} &= (0.44)(5.57)(25.2 - 23.9) = 3 \\
 q_{i,8} &= (0.44)(5.57)(29.0 - 23.9) = 12 \\
 q_{i,9} &= (0.44)(5.57)(32.7 - 23.9) = 21 \\
 q_{i,10} &= (0.44)(5.57)(35.9 - 23.9) = 29 \\
 q_{i,11} &= (0.44)(5.57)(38.6 - 23.9) = 36 \\
 q_{i,12} &= (0.44)(5.57)(40.8 - 23.9) = 41 \\
 q_{i,13} &= (0.44)(5.57)(50.2 - 23.9) = 64 \\
 q_{i,14} &= (0.44)(5.57)(59.8 - 23.9) = 87 \\
 q_{i,15} &= (0.44)(5.57)(65.9 - 23.9) = 102 \\
 q_{i,16} &= (0.44)(5.57)(67.6 - 23.9) = 107 \\
 q_{i,17} &= (0.44)(5.57)(64.3 - 23.9) = 98 \\
 q_{i,18} &= (0.44)(5.57)(55.4 - 23.9) = 77 \\
 q_{i,19} &= (0.44)(5.57)(39.5 - 23.9) = 38 \\
 q_{i,20} &= (0.44)(5.57)(27.6 - 23.9) = 9 \\
 q_{i,21} &= (0.44)(5.57)(26.6 - 23.9) = 6 \\
 q_{i,22} &= (0.44)(5.57)(25.6 - 23.9) = 4 \\
 q_{i,23} &= (0.44)(5.57)(24.7 - 23.9) = 2 \\
 q_{i,24} &= (0.44)(5.57)(23.9 - 23.9) = 0
 \end{aligned}$$

p. 21.23, Example 8, Solution. At end of second paragraph, text should read, “in this case, 350 mm.”

p. 22.22, Table 21. For the >305 mm nominal row, under ≤2000 Variable Flow/Variable Speed in m/s, delete the “13.0”

2019 APPLICATIONS

First page of Contributors. Charles Gullede’s employer should be listed as Environmental Air Systems, LLC.

p. 11.14, Fig. 13. Source year should be 2000, rather than 2007.

p. 19.2, Table 1. Source note should be “©ISO. This material is reproduced from ISO 14644-1:2015, with permission of the American National Standards Institute (ANSI) on behalf of the International Organization for Standardization. All rights reserved.”

p. 61.3, Fig. 2. Bottom line of figure cut off. The figure in its entirety is as appears in the opposite column.

End papers. Title for Chapter 59 should be listed as “Indoor Air-flow Modeling,” and Chapter 60 should be “Integrated Project Delivery and Building Design.”

<p>Consultant(s)</p> <ul style="list-style-type: none"> • None • In-house security management • Outside security consultant • Government security (at time of design; confidential) • Government security (at time of construction; highly confidential) <p>Risk Evaluation Status (see risk evaluation document for more detail)</p> <ul style="list-style-type: none"> • Baseline: No specialized operations, tenants may be relocated, long-term nonoccupancy presents minimal challenge • Enhanced: Specialized or unique operations, larger facilities with high populations, long-term nonoccupancy undesirable • Critical: Highly specialized or unique operations, high importance or visibility, long-term nonoccupancy unacceptable <p>Design Features: HVAC Security</p> <ul style="list-style-type: none"> • List Features <p>Design Features: Environmental Health and Safety</p> <ul style="list-style-type: none"> • List systems with enhanced air filtration and MERV rating • List systems with enhanced safeties and alarms and types of devices used • List zoning application • List air intake minimum height above grade requirements • List equipment to be located above exterior historical flood level data • List systems to be on emergency power <p>Commissioning, Operation, Maintenance, and Recommissioning</p> <ul style="list-style-type: none"> • Commission beginning in design phase through construction phase • Continuous commissioning in warranty phase • Operation training and documentation beginning in design phase • Preventive maintenance work order ready to implement in construction/commissioning phase • Predictive maintenance features • Mode of operation: evacuation, shelter-in-place, uninterrupted operation (list systems by one of these three categories) • Recommissioning every (X) years by _____
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Fig. 2 HVAC Security and Environmental Health and Safety Basis of Design Segment
(from 2019 Applications, p. 61.3)