

**ERRATA SHEET FOR ASHRAE GUIDELINE 41-2023**  
**Design, Installation and Commissioning of Variable Refrigerant Flow (VRF) Systems**

**May 5, 2025**

The corrections listed in this errata sheet apply to all copies of ASHRAE Guideline 41-2023. The first printing is identified as “Product code: 86881 11/23” on the outside back cover.

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| <b>36</b> | <b>7.4.3 Piping System and Component Considerations.</b> Revise Section 7.4.3a as shown below.<br><i>(Note: Additions are shown in <u>underline</u> and deletions are shown in <del>strikethrough</del>.)</i> |
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**7.4.3 Piping System and Component Considerations.** There are also more specific considerations related to the piping and system components being evaluated. The following are commonly considered for some piping types and components. Other components may not be listed, but a similar evaluation process should be followed in addition to the general considerations outlined in Section 7.4.2.

a. **Copper piping.** Copper is the most commonly used type of refrigerant piping. Some joints are flared at most of the IDU connections, while others are typically brazed. It is recommend that air-conditioning and refrigeration (ACR) type copper be used. Consult the *Copper Tube Handbook* <sup>37</sup> for types of copper tube available and some best practices to follow while working with copper tubes. Annealed (soft) and drawn (hard) copper are available and acceptable for use with VRF equipment. Manufacturers may have different guidelines for using hard, soft, or a mix of both. If soft copper is used, it is important to ensure there is no kinking or flattening of the pipe when bends are made. When brazing copper connections, it is important to have a proper flow of dry nitrogen through the joint being brazed. A proper nitrogen purge is an important cleanliness measure that will prevent the formation of copper oxide(s) build-up of carbon, which can find its way through the system as debris. While copper piping is preferred, simply using copper does not ensure the manufacturer’s limited warranty coverage by itself. Equipment problems that stem from improper copper piping choice, installation, or application are not in the control of the manufacturer and therefore may not be covered by the manufacturer’s limited warranty.