



**BSR/ASHRAE Addendum o
to ANSI/ASHRAE Standard 62.2-2022**

Public Review Draft

Proposed Addendum o to Standard 62.2-2022, Ventilation and Acceptable Indoor Air Quality in Residential Buildings

**First Public Review (February 2024)
(Draft shows Proposed Changes to Current Standard)**

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FOREWORD

Proposed Addendum o replaces hydraulic diameter with equivalent diameter in the prescriptive duct sizing section of the Standard. The purpose is to more accurately estimate the static pressure loss for rectangular (and other non-circular) ducts.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by underlining (for additions) and ~~striking through~~ (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum o to 62.2-2022

Revise Section 5.4 as shown below.

5.4 Airflow Measurement. The airflow required by this section is the quantity of indoor air exhausted by the ventilation system as installed and shall be measured according to the ventilation equipment manufacturer instructions, or by using a flow hood, flow grid, or other airflow measuring device at the mechanical ventilation system's terminals/grilles or in the connected ventilation ducts.

Exception to 5.4: Manufacturer design criteria or the prescriptive requirements of Table 5-3 shall be permitted in place of a measurement. When using Table 5-3, the airflow rating according to Section 7.1 shall meet or exceed a static pressure of 0.25 in. of water (62.5 Pa). Use of Table 5-3 is limited to duct systems not exceeding 25 ft (8 m) in length, duct systems with no more than three (3) elbows, and duct systems with exterior termination fittings having an hydraulic-equivalent diameter greater than or equal to the minimum duct diameter and not less than the hydraulic-equivalent diameter of the fan outlet.

Table 5-3 Prescriptive Duct Sizing

Fan Airflow Rating, CFM at minimum static pressure of 0.25 in. of water (L/s at minimum 62.5 Pa)	≤50 (25)	≤80 (40)	≤100 (50)	≤125 (60)	≤150 (70)	≤175 (85)	≤200 (95)	≤250 (120)	≤350 (165)	≤400 (190)	≤450 (210)	≤700 (330)	≤800 (380)
Duct Type	Minimum <u>Equivalent Duct Diameter</u> , in. (mm) ^{a,b,f,g,h}												
Rigid duct	4 ^e (100)	5 (125)	5 (125)	6 (150)	6 (150)	7 (180)	7 (180)	8 (205)	9 (230)	10 (255)	10 (255)	12 (305)	12 ^d (305)
Flex duct ^c	4 (100)	5 (125)	6 (150)	6 (150)	7 (150)	7 (180)	8 (205)	8 (205)	9 (230)	10 (255)	NP	NP	NP

a. For circular ducts, the equivalent diameter, D_e , is equal to the duct diameter. For noncircular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.

For rectangular ducts with cross-sectional dimensions a and b,

$$D_e = \sqrt{4(ab)/\pi}$$

For flat oval ducts,

$$D_e = \frac{1.55 \left[\left(\frac{\pi a^2}{4} \right) + a(A - a) \right]^{0.625}}{[\pi a + 2(A - a)]^{0.250}}$$

where A and a are the length of the major and minor axes, respectively, of the flat oval duct-

- b. NP = application of the prescriptive table is not permitted for this scenario.
- c. Use of this table for verification of flex duct systems requires flex duct to be fully extended and any flex duct elbows to have a minimum bend radius to duct diameter ratio of 1.0.
- d. For this scenario, use of elbows is not permitted.
- e. For this scenario, 4 in. (100 mm) oval duct shall be permitted, provided the minor axis of the oval is greater than or equal to 3 in. (75 mm).
- f. 3.25" x 10" rectangular duct shall be permitted as a substitute for circular duct diameters up to 6".
- g. 3.25" x 14" rectangular duct shall be permitted as a substitute for circular duct diameters up to 7".
- h. 4.5" x 18" rectangular duct shall be permitted as a substitute for circular duct diameters up to 10".

Add new reference to Informative Appendix D as shown below.

ASHRAE Handbook—2021 Fundamentals. American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., Atlanta, GA 30092
Table 5-3