

LIST OF THE MAJOR CHANGES FROM THE FIRST EDITION

1. A list of duct manuals and standards that this edition supersedes is provided in Appendix A-44.
2. Metrics are included.
3. Illustrations were prepared in AutoCAD® Version 12, but following an industry survey revealing limited interest, disks are not available initially.
4. The text was edited to be more reader-friendly and reading aids were added.
5. Chapter 7 was revised to facilitate use by those interested in equivalent and comparable tests and ratings.
6. A model project specification for adoption of the second edition was added.
7. Table 1-1 now features static pressure only as the basis for duct construction classification; velocity levels were deleted. The default-to-one-inch pressure-class (250Pa) provisions were retained in case designers do not give construction pressure classes.
8. Predicted leakage rates in unsealed ducts were omitted. Advice to consult the SMACNA HVAC Air Duct Leakage Test Manual was entered. The ASHRAE Fundamentals Handbook chapter on duct design and the SMACNA HVAC Duct Systems Design Manual contain additional information on evaluating duct leakage. ASHRAE's energy conservation Standard 90.1 also has a useful perspective on sealing and leakage testing.
9. Reminders to designers to show all required fire, smoke, radiation and volume control dampers on contract drawings are accented.
10. Boiler breaching was omitted because mechanical codes and other specifications too often override the SMACNA details.
11. Volume damper construction is now more specific.
12. Lead radiation shielding is added in the appendix courtesy of the Lead Industries Association.
13. Air terminal runouts and supports are revised.

KEY RECTANGULAR DUCT REVISIONS

14. Negative pressure construction is now given in 4", 6", and 10" w.g. (1000, 1500, and 2500 pascal) ranges.
15. Six feet (1.8 meter) reinforcement schedules are added.
16. Reinforcement schedules were extended to 120" (3000 mm) width.
17. Tie rod alternatives are greatly expanded for both positive and negative pressures; however, tie rod use at mid-panel in

lieu of external reinforcement is not yet standardized and is in "further study" status. See 1997 Addendum No. 1.

18. TDC® and TDF® joint systems are now rated as T-25a and T-25b joints. Laboratory tests were conducted by SMACNA. A T-24a joint was added as a modification of T-24.
19. Structural engineers assisted SMACNA in rerating joints and reinforcements based on minimum thickness rather than nominal thickness. The EI index and ratings were changed to focus more on effective EI and allowable bending movements.
20. The use of 26 gage (0.55 millimeters) was added for 4", 6" and 10" w.g. and expanded somewhat at lower pressures.
21. Trapeze hanger tables were expanded to cover the 120" (3m) width range, with hanger rods 3" (76 mm) from duct sides in the 97" to 120" range.
22. The duct liner pin schedule was adjusted to be different for folded lines corners then for butted conditions.
23. Infrequently used joints T-4, 8, 17, 18, 19, 20 and 23 were omitted; however, the text mentions that they may still be considered under first edition conditions.

KEY ROUND, FLEXIBLE AND OVAL DUCT REVISIONS

24. Duct pressure classes were revised to be positive and negative at 4", 6", and 10" w.g. (1000, 1500, and 2500 Pa) levels with a nominal safety factor of two.
25. Designer options of specifying fittings by class (all-welded, spot or tack welded, seamed or rivet, screw or die-stamp locked) were inserted for sealed or unsealed specification in the event that allowable leakage specifications do not otherwise regulate this.
26. Crimped joint connection length was changed from 1" to 2" (51 mm).
27. Rectangular branch taps into round were added for straight or 45 degree lead-in entry.
28. Ribbed forms of round duct are not yet standardized, but may be considered under equivalent-performance-alternative provisions.
29. Based on an ASHRAE test program Type 1 reinforcement of oval duct now has an internal tie rod.
30. Maximum support spacing for round flexible duct and connector was changed from 10' to 5' (1.5 meters).
31. Additional riser support diagrams are provided.
32. Hold-down anchor spacings are given for round duct to be encased in concrete.