

## **Duct Systems - Standard & FM**

### **Aire-Safe Duct Specifications/Duct sizes**

1. 12 - 60 in. round or rectangular duct fabricated by Vanaire is made from identical compounds as tested using the same methods as those used in preparing test samples for FMRC tests.
2. Dimension limitations (12 in. min., 60 in. max) apply to both round or rectangular shapes. Minimum duct wall thickness is 3/16 in. up to and including 36 in. and 1/4 in. in sizes over 36 in.
3. FM duct sizes do not require automatic sprinkler protection.
4. Duct sizes above 60 in. require automatic sprinkler protection to meet FMRC requirements.
5. If the process gases being handled by the Aire-Safe duct system contain combustible vapors or flammable residues that can build up inside the duct, then sprinkler protection in the duct will be required as recommended in FME&R Loss Prevention Data Sheet 7-78.
6. Vertical sections of the duct will not exceed 16 ft. or penetrate other fire areas, otherwise internal sprinklers are required.

Vanaire designs and manufacture corrosion resistant duct systems and Factory Mutual duct systems in accordance with the specifications set forth by the SMACNA Manual on Thermoplastic Construction.

Vanaire's "Aire-Safe" ducting is specifically fabricated to meet Factory Mutual's requirements for FMRC approved duct. This duct is designed to exhaust non-combustible corrosive fumes without the need for automatic sprinkler protection where permitted by applicable FME&R Loss Prevention Data Sheets.

PVC ductwork systems are fabricated from 3/16" Type II extruded PVC (conforming to ASTM-D-1784-69) in diameters 6-inches through 24-inches. For diameters greater than 24-inches, Type II PVC sheet stock of 3/16" and 1/4" thickness are used (conforming to ASTM-D-1927-67).

All elbows and fittings less than 20-inches diameter are butt-welded to assure leak-proof connections. All straight duct sections greater than 24-inches are longitudinally butt-welded to guarantee the weld at 100% of the material strength. All welding is done by Vanaire welders, trained and certified by Vanaire in the method of hot gas fusion PVC welding. All factory joints are welded with no less than four PVC welds on each joint (three out and one in), to minimize the possibility of leaks. All risen duct work is to have blast-gate or locking quadrant dampers.

All PVC and Fiberglass duct thickness and reinforcement designs are based on SMACNA requirements for the static pressure of the system. Duct connections are made via the coupling or bell end. Flange connections are available as options if requested.

All Vanaire systems are designed in accordance with the manuals of recommended practice, set forth by the American Conference of Governmental Industrial Hygienists (ACGIH), and the American National Standard Institute (ANSI).