



I GENERAL

- A. All round supply, return and exhaust ductwork shown on the plans or indicated in the project specification to be insulated shall be PID as manufactured by Ricwil (M) Sdn Bhd or approved equal. The duct system shall consist of fittings that are factory fitted t and spiral duct which, when installed according to the manufacturer's instruction, will seal the duct joints without the use of duct sealer.
- B. The contractor may, at his option, convert any or all double wall rectangular or oval ductwork to PID round duct provided that the project space limitations are properly addressed and that the overall system design static pressure not be exceeded.

II MATERIALS

- A. Unless otherwise noted, all duct and fittings shall be G-90 galvanized steel in accordance with ASTM A-653 and A-924.
- B. Insulation shall be rigid polyurethane machine injected and foamed in place completely filling the annular space between round duct and have a maximum conductivity factor (K) of 0.26 BTU-in/hr • ft² • °F at 75°F mean ambient temperature.

III CONSTRUCTION

- A. Unless otherwise noted all double wall duct and fittings shall be constructed as shown in the following gauge table:

DIAMETER (in)	SPIRAL DUCT		FITTINGS	
	Inner	Outer	Inner	Outer
3-12	26	26	24	24
14-24	24	24	24	22
26-34	24	22	22	20
36-48	22	20	22	20
50-58	20	18	20	18



B. FITTING

1. Double wall duct and fitting shall consist of a perforated or solid inner liner, a 1-inch, 1.50 lb/ft³ (unless otherwise specified) layer of fiberglass insulation and a solid outer pressure shell. When a perforated inner liner is specified, a retaining fabric shall be wrapped between the perforated inner and the fiberglass insulation. This fabric provides fiber tear retention while maintaining acoustical properties. For 1-inch thick insulation, the outer pressure shell diameter shall be 2 inches larger than the inner liner.
2. All double wall duct and fittings shall be furnished with a foam insulation stop. Fitting inner liner shall be flush with the outer shell. Duct inner shall be recessed.
3. All fitting ends shall be calibrated to manufacturer's published dimensional tolerance standard.
4. All fitting end outer diameters shall have rolled over edges for added strength and rigidity during installation and shipping.
5. Double wall to single wall transitions shall be provided where insulated duct connects to non-insulated, single wall duct. Transitions reduce the double wall outer shell diameter to the inner shell diameter.
6. When contract documents require divided flow fittings, only full body fittings will be accepted. Double wall saddle taps are unacceptable.
7. The inner liners shall not be fastened together to allow for expansion and contraction.

C. SPIRAL DUCT:

1. Spiral duct shall be calibrated to manufacturer's published dimensional tolerance standard.
2. All spiral duct 12" diameter and larger shall be corrugated for added strength and rigidity. Inner and outer duct shall be of spiral lockseam construction.
3. Spiral seam slippage shall be prevented by means of a flat seam and a mechanically formed indentation evenly spaced along the spiral seam.