

Specification

GENERAL

1. All round silencers shown on plans or scheduled shall be manufactured by EHG (877) EHG-HVAC or approved equal. All silencers shall meet manufacturer's published performance data tested according to ASTM E477.
2. The contractor may, at his option, convert any or all double wall or sound lined duct work to silencers provided that the intended sound attenuation is matched or exceeded, the project space limitations are properly addressed and that the overall system design static pressure is not exceeded.

MATERIALS

1. Unless otherwise noted, all silencers shall be a minimum of G-60 galvanized steel in accordance with ASTM A-653 and A-924. Perforated inner liner shall consist of 1/8" perforations on 1/4" staggered centers corresponding to an overall open area of 23%.
2. When stainless steel is specified on contract documents, outershells of silencers manufactured using stainless steel type 304 or type 316 in accordance with ASTM A-240 shall be provided.
3. Absorption filler material shall be glass fiber of adequate density to meet the specified acoustic performance. Filler material density shall be high enough so as to eliminate voids caused by settling.
4. Glass fiber material shall conform to ASTM E84- 91a and NFPA 90A and not exceed flame spread and smoke developed ratings of 25/50.
5. Fiber retention fabric shall be 0.008" thick, 15.6 lbs ft³ density with an air permeability rate of 9.2 ft³/ft²-s.

CONSTRUCTION

1. Unless otherwise noted, all silencers shall be constructed per gauges in the following table:

Diameter (Inches)	Straight Silencer			Elbow Silencer	
	Inner	Outer	Baffle	Inner	Outer
3 - 14	28	28	22	24	24
16 - 24	26	26	22	24	22
26 - 42	24	24	22	NA	20
44 - 50	20	20	22	NA	18

2. The inner and outer shells of the straight silencers shall be spiral lockseam construction. The cavity formed by the two shells shall be filled with inorganic glass fiber sound absorption material. All silencers shall contain a fiber retention system which utilizes a non-woven polyester fabric integrated within the spiral seam of the inner shell and tightly secured to avoid fiberglass from eroding into the airstream.
3. The entry profile of the interior baffle shall be aerodynamically efficient thereby yielding minimum self-generated noise characteristics.
4. The outer shell of all straight silencers 8" diameter and larger shall be corrugated for added strength and rigidity. The corrugations also decrease the amount of surface area perpendicular to the noise source, adding to the effectiveness of the silencer and decreasing potential breakout noise.
5. Spiral seam slippage shall be prevented by means of a flat seam and a mechanically formed indentation evenly spaced along the spiral seam.
6. The inner and outer shells of all elbow silencers shall be a minimum of 5 gore construction. The inside of all outer shell gores shall be sealed to meet ASHRAE's Leakage Class 3 requirements. The cavity formed by the two shells shall be filled with inorganic glass fiber sound absorption material. The fiber retention system is integrated around the inner perforated shell and tightly secured to avoid fiberglass from eroding into the airstream.
7. All silencer ends shall come factory equipped with a triple-lipped, EPDM rubber gasket and shall be calibrated to the manufacturer's published dimensional tolerance standard. This ensures consistent performance with EHG's G-3[®] Duct System. Gasket shall be classified by Underwriter's Laboratories to conform to ASTM E84-91a and NFPA 90A flame spread and smoke developed ratings of 25/50.

Specification

8. Silencers shall not leak or fail structurally when exposed to a maximum differential pressure of 8 inch water gauge.

PERFORMANCE

1. ACOUSTIC: All silencer ratings shall be determined by testing performed in accordance with ASTM specification E477-96 which utilizes the duct-to-reverberant room test method and provides for airflow in both directions. Acoustic ratings shall include Dynamic Insertion Loss (DIL) and Self Generated Noise (SN) for both forward and reverse flow conditions. Data shall be presented for testing on the following sizes: 6", 12", 18", 24", 30", 36" and 42".
2. AERODYNAMIC: Static pressure drop of silencers shall not exceed those listed in the silencer schedule or specifications. Pressure drop data shall be presented for the same sizes as the acoustic data.

CERTIFICATION

All silencer ratings shall be conducted by a nationally recognized acoustic test laboratory. The testing laboratory shall be completely independent of the manufacturer.