



FULL SPECIFICATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Underground Ducts

1.3 ACTION SUBMITTALS

- A. Provide Product Data: For each type of the following products, furnished specialties and accessories.
 - 1. Underground Ducts
 - 2. Sealants and Gaskets
- B. Shop Drawings: For underground ducts. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads,

required clearances, method of field assembly, components, and location and size of each field connection.

2. Burial and supports, including methods for duct burial and internal and external bracing if recommended by the manufacturer.

1.4 CLOSEOUT SUBMITTALS

A. Installation and Maintenance Data: For underground ducts include installation and maintenance manuals.

1. Site conditions, excavation and preparation
2. Instructions for joining ducts
3. Instructions for proper backfilling and precautions.
4. Leak testing procedure

1.5 QUALITY ASSURANCE

A. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-Up."

PART 2 – PRODUCTS – UNDERGROUND DUCTWORK

A. ACCEPTABLE MANUFACTURERS:

1. The BlueDuct® by AQC Industries, Roseville, MN 55126, (877-783-1520). www.aqcind.com and e-mail: team@aqcind.com.

B. UNDERGROUND DUCT SYSTEM

1. Complete duct system (including inlet plenums, round duct, run-outs, diffuser boots, etc.) must be from one manufacturer and be of the same material, construction and connection method throughout. Field made duct components are NOT acceptable.
2. Provide elbows, ducts, diffuser boxes, plenums, clamp & gaskets, boots, saddle registers and caulk as required by drawings for underground installation.
3. Unless otherwise noted, all duct and fittings shall be constructed per SMACNA's Duct Construction Standards to withstand +10" w.g. and -2" w.g.
4. Ductwork shall be closed cell plastic material that is recyclable, does not emit volatile organic compounds, and conforms to ASTM-D2412. Ductwork shall be resistant to mildew, mold (UL 181B), and radon gas (BSS 7239-88). Ductwork shall not rust or crack under external stress or strain. Ductwork shall have integral R-10 equivalent thermal insulation value, without the use of external insulation, per NSF's P374 Protocol and verified by a NSF Thermal Testing Report.
5. All joints shall be sealed via gasket or bolts and sealant.
6. Clamps and gaskets shall be used on ductwork without flanges. Clamps shall be polyethylene with stainless steel plates and stainless-steel screws. Gaskets shall comprise of ¼" thick butyl rubber sealant tape that is water and UV resistant and shall not stain. Gaskets shall comply with ASTM-E84 for flame and smoke spread.
7. Flanged joints and duct branches shall use a co-polymer adhesive caulking sealant that is water and UV resistant. Flanges shall be connected with stainless steel bolts.
8. Assembled ductwork shall be able to maintain pressure with no leakage.
9. Duct system shall be installed by an AQC Industries' trained installer.
10. Fiberglass style (FRP) ductwork or PVC coated galvanized steel ductwork shall NOT be acceptable.
11. Duct system performance shall exceed SMACNA's Leakage Class 1 requirements at the system design static pressure.
12. Duct system shall carry a 10-year Limited Warranty.

PART 3 – EXECUTION

A. Installation

1. Follow The BlueDuct Installation Instructions provided by AQC Industries. It is strongly recommended to complete installation training provided by AQC Industries prior to installation
2. Excavate a trench evenly as per The Blue Duct Installation Instructions. No bedding is required except for cases of bedrock or clay where sand or light aggregate may be used.
3. Backfill material must consist of pea gravel or dry silica sand.
4. The sealant and gasket material provided by AQC Industries must be used as directed. The use of non-approved sealant or gasket will void warranty.

B. Testing

1. The complete underground duct system shall be tested for leakage after final assembly.
2. Follow SMACNA air duct leakage test standard.
3. Allow 24 hours for The BlueDuct sealant to cure after final assembly before testing the duct system. Additional curing time may be required in high ambient conditions.

C. Cleaning

1. Remove dust and debris from ductwork prior to occupancy.