



EarthCraft House™ and ENERGY STAR® Duct Installation Requirements for Manual D Duct Design

General Instructions

EarthCraft House and ENERGY STAR have specific standards for heating and cooling systems, particularly duct installation.

Carefully read the Manual J and Manual D reports from Wrightsoft before starting.

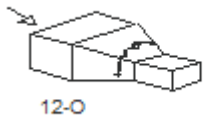
- Blower location, duct size, duct placement, bends, elbows, reducers and outlet locations are important.
- Review these when placing your collectors / outlets and take-off cut-outs.
- Location of take-offs in relation to trunk reductions are critical.
- If the drawing shows a straight line – then the duct should be installed in straight line.
- If additional elbows, turns, junctions are needed, the design can be easily modified before installation starts. Additional turns may require increases duct diameter to maintain adequate airflow.
- Poorly installed flex duct with compression and sag can **dramatically** affect system performance. (See ACCA Manual D Appendix 17)
- Air handlers & duct systems sealed with mastic or mastic tape. Use foil tape to seal unused joints on the air handler cabinet.
- Solid connector required for all flex to flex connections
- Balancing dampers are required at each take-off.
- All supply duct take-offs spaced at least 6" apart (no ducts from cap)
- No duct take-offs within 6" of supply plenum cap
- **All flex duct pulled tight with no pinches.**
- All flex duct shall be supported every 4-6 feet, consistent with ADC Installation Instructions Section 4.8 (pgs 18-19) attached.
- No ducts in exterior walls or vaulted ceilings along rooflines

Attachments included by reference: Air Diffusion Council (ADC) Installation Instructions Section 4
Duct sealing using mastic appropriately for durability and air-sealing. - Section 4.6
Proper support of flex duct – Section 4.8

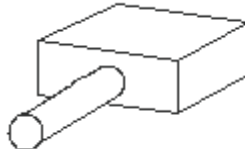
For questions, please contact EarthCraft House at (334) 707-2007 or abell@alabamahabitat.org

Diagrams for Trunk construction:


Trunk Transitions shall be consistent with type 1201 or 1202

	1201	10	Converging rect to rect transition, slope 1:1
	1202	5	Converging rect to rect transition, slope 2:1 or 4:1

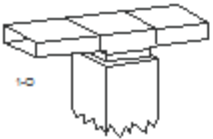
The Branch Take-off Fittings at the Supply trunk shall be consistent with type 2A

	2A0	35	Round take-off from side, no transition, 0 dstr. br.
	2A1	45	Round take-off from side, no transition, 1 dstr. br.
	2A2	55	Round take-off from side, no transition, 2 dstr. br.
	2A3	65	Round take-off from side, no transition, 3 dstr. br.
	2A4	70	Round take-off from side, no transition, 4 dstr. br.
	2A5	80	Round take-off from side, no transition, 5 or more br.

The Supply Air Fitting at the Air Handler is either type 1H2

	1H1	120	90 deg. rect. angle - no vanes, H/W = 0.5
	1H2	85	90 deg. rect. angle - no vanes, H/W = 1.0
	1I	20	90 deg. rect. angle with vanes

Or the Supply Air Fitting at the Air Handler is type 102

	1O1	120	Rect. tee, no vanes, H/W = 0.5
	1O2	85	Rect. tee, no vanes, H/W = 1.0
	1P	20	Rect. tee with vanes

The Supply Trunk Junction Fitting is type 9K

	9K	65	Rect. Tee
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