



June 11, 2010

**Re: Duct Design Pilot #05**

- **ACCA approved computer programming**
  - a) Wrightsoft, Elite, Nitec, Adtek.
- **Design conditions**
  - a) Winter Design Conditions;      outside db - 0 deg F      inside db – 72 deg F
  - b) Summer Design Conditions;      outside db – 90 deg F      inside db – 75 deg F
- **Air Changes Per Hour**
  - a) .35(ach) maximum allowed with no minimum. Structures with known infiltration rate of less than .35(ach) must address supplemental combustion air needs for gas fired appliances using indoor combustion air.
- **Latent Cooling Equipment Load**
  - a) Our design location is not in a wet coil climate.
  - b) Moisture differences should always see negative numbers for grains per pound (gr/lb)
  - c) Sensible heat ratio (SHR) default of .75 requires change to (.85 SHR) minimum for our location
- **Program submittal**
  - a) Project Summary, design information, design conditions, AED      Entire House
  - b) Component Construction, room by room loss/gain calculations      Entire House
  - c) Short Form, equipment schedule, room name, htg/clg loads, cfm      Entire House
  - d) Duct System Summary, supply/return duct, trunk/branch detail      Entire House
  - e) Floor to floor layout
  - f) Friction loss worksheet
  - g) Equipment performance data
- **HVAC Equipment Certificate**
  - a) Performance testing check box
- **Plan document submittal**
  - a) requires HVAC Certificate and the components of the computer program submittal
  - b) individual duct design can be submitted as a splice to plans
- **Performance testing**

- a) document submittal will not require duct system summary
- b) contractor to provide test data at residential rough inspection, (+ or -) 20% on cfm
- **Discontinue 30% cap on over sizing**
- **Unfinished basement layout**
  - a) supply air installations to be performance tested, must have fully developed take-offs. Laterals may be scaled back
  - b) supply air installations by design, may be reduced accordingly. Take-offs and lateral runs may be scaled back to trunk lines with a minimal number of registers installed, provided all supply take-offs are permanently marked on the corresponding trunk line section as per the design.
  - c) return air must be fully developed
  - d) if draft hooded gas appliances installed, and supply air has been reduced, an adequately sized transfer air grille, (from basement to floor above) must be installed
- **Jobsite documents**
  - a) document submittal includes:
    - 1) program short form / room name with htg/clg loads and cfm's
    - 2) program duct system summary
    - 3) program floor to floor layout
    - 4) equipment declaration
- **Inspection procedures**
  - a) check equipment sizes
  - b) duct inspection, construction, sealing, panning
  - c) lateral runs and placement, system layout and sizing
  - d) alterations, offsets
  - e) square inches at plenum tie-ins
  - f) AC coil compatibility if installed
  - g) minimal basement distribution requirements
- **Inspection rejections**
  - a) installations where lateral take-offs are not installed on the designated trunk line section, will require an amended design submitted to plan check

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