

Minutes of the State Appeals board
Appeal #08-01
Tuesday June 17. 2008

Called to Order:

- Appeals Board Members included Gary Hagedorn, Building Official for the City of Blaine; Craig Hess, an architect with Elness Swenson Graham Architects; Haidee Tan, an architect with DLR Group; Thomas Downs Jr., a structural engineer with BKBM Structural Engineers; Ron Wasmund owner and Building Official of Inspectron Inc.; Ex-officio member Scott McLellan. Other CCLD staff included Mike Godfrey and Doug Nord with Construction Codes and Licensing.
- Chairman Tom Downs called the meeting to order at 9:10 AM.
- Those present in the audience were Daniel Stevens, CDC Enterprises; Scott Kneen P.E.; John Clark, P.E.; Jeff Prickel, CDC Enterprises; Jon W. Jungers, CEO/CDC; Chad Jungers, CDC; Loren Kohnen, Building Official, City of Dayton; Jack Weizel, Building Inspector for Metro West Inspections, Inc.; Peter Villard, Construction Codes and Licensing.

Introduction of the Appeal:

- Tom Downs explained protocol of the meeting and summarized the subject of the appeal, that the City of Dayton's Building Official does not consider the duct to meet the requirements of the code in regards to MN Rules 603.7.5 (drainage) and 603.7.6 (insulation). The applicant believes it meets the requirements of MN Rule 1300.0110; Subd. 13, alternate materials, design, and methods of construction and equipment.

Discussion:

- Daniel Stevens explained the products developed by CDC and the reason for alternate materials in the code.
- John Clark explained the test results, the temperature differences in AKDUCT vs PVC Duct, and how it performed even better than the PVC with R-5 insulation. John went over formulas for heat loss values explaining both methods used.
- Ron Wasmund asked John Clark about air velocity in the ducts during the test and time allowed. John Clark explained the test was run long enough to take velocity out of the factors.
- John Clark noted that testing of the duct was not so different than kitchen duct design. There is a test in the code for tightness testing at 1.5 inches of water column for 20 minutes. This is simple for a contractor to run and if they do the test it will help relieve the contractor of liabilities for mildew and mold.
- Tom Downs asked if a liquid tightness test is required. Jon Junger responded yes but then stated they can only recommend, although the building official can require it. He stated he would want drain tile on the perimeter but if they test the duct he feels drain tile should not be required.
- Craig Hess asked about the test as to the furnace running time. Daniel Stevens stated although he was not present at the test, the test for A/C was 4.5 hours and 1.5 hours for heating. Jon Jungers explained time lines for A/C and heat.

- Craig Hess asked if the fan cycled on and off. Jon Junger said yes as they wanted to mirror the furnace usage in a residence.
- Doug Nord asked Jon Junger if installation procedures have changed since 2004 as he had received some concerns regarding water in AKDUCT on some residences built in 2004. Jon Junger stated that air testing of the duct is critical and he is aware of 3 instances where there were issues but they were in regards to installation. Those failures did not have the required air test.
- Doug Nord asked about the air test being required as the installation instructions state “optional air test assembly.” Are the installers required to be certified? Jon Junger said it is optional but it should be tested. Installers are not required to be certified but they do have training available.
- Ron Wasmund suggested the test be required or certification of installation or drain tile. Jon Junger states if installation instructions are followed and the system is air tested the system should not be penalized by requiring drain tile.
- Gary Hagedorn said his concern, like Ron Wasmund’s, is installation, certification of installers and requiring an air test. Daniel Stevens said periodically they are involved with distributors in training but certification is not required. On the web-site there is a video for installation available to view. Gary Hagedorn said hands-on training is the best. Jon Junger states it is the distributor’s responsibility to train.
- Craig Hess stated he’d like a state representative to comment on the lack of a requirement for the sealing of PVC. Mike Godfrey said there had been so many problems with underground duct that there was kind of a paranoia. This was a reason for drain tile and the code committees never seemed to get past that and into addressing pressure testing as an approved way to eliminate the drain tile requirement.
- Jon Junger said when they air-test, they test the total system from the plenum to the termination points.
- Mike Godfrey stated PVC wasn’t allowed because of smoke density and flame spread ratings until it was noted that NFPA standards allowed the use of the material as long as it was buried.
- Jack Weizel said they want drain tile in heavy/saturated soil and R-5 for heat loss. Jack states the code doesn’t have a standard for testing other than requiring R-5. If in well drained soil he doesn’t see a problem except in heavy clay soil.
- Craig Hess asked Jack Weizel if the contractor had proposed this product as an alternate prior to starting the project. Jack said it was put in without approval and without drain tile.
- Haidee Tan asked Jon Junger approximately how many times the product had been installed in other Minnesota projects. He replied over 1000. Haidee asked if the product was already installed for this project and Jack Weizel replied “yes.” Jack said since red tagging the job, a drain tile system was put in and the concrete slab was poured. However, there is still the issue of the R-5 insulation.
- Daniel Stevens explained this building floor is 2 feet above the road. The office area is the only area the AKDUCT was used. The bay area is lower but no underground duct was installed in that area.

- Loren Kohnen said this site is a high water table area. Loren believes drain tile is critical on this site. If drain tile was installed below, he would have no problem with this project.
- Ron Wasmund talked about foundation drain tile being different than underground duct drain tile.
- Haidee Tan states that in the installation requirements the duct is required to be sloped. Jon Junger explained that is in case water from say the water heater entered the ducts it could be accessed at a point of collection.
- Daniel Stevens stated in conclusion; the thermal insulation around the duct serves many issues. These include energy efficiency and with A/C, less vapor build-up. Also, air infiltration including radon issues are being addressed in the upcoming code. The material is incredibly tough and resistant with this design and being air and water tight it will reduce mildew and mold issues. It also has been tested for toxic gas. ICC has reviewed and approved. Daniel is asking the appeals board to consider the information submitted by two professional engineers and the testing lab. Daniel states they understand the responsibilities of the building officials but law cannot cover all products. The engineered design and testing this company has done needs to be recognized. Alternate materials allowed by the code needs to be used for this product until it is put into the code. Daniel is requesting that this product be considered as an alternate material and not be required to have drain tile and thanked its members for their time and consideration.

Board only Discussion:

- Tom Downs thanked Daniel Stevens and the others for their information. Tom closed the meeting for submitting information and opened up time for board members.
- Tom added that there are two issues in this appeal but because drain tile has already been installed, the R-value is the only issue.
- Craig Hess believes the duct has equivalency for the R-value and made a motion to accept for this installation.
- The motion was seconded.
- The motion carried unanimously.
- The meeting adjourned at 11:15 am.

Respectfully submitted,

Scott McLellan