



Informal Interpretation Report Number 6803



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Section 13-404 AB.1 and AB.3

Question:

Is it the intent of this code to require a second ceiling if installing a drop grid acoustic ceiling in and industrial building for air conditioned office space?

Answer

There are two sections of the energy code at work here: 13-404.AB.1 and 13-406.AB.3. Section 13-404.AB.1 requires at least an R-10 in the roof or ceiling and that the roof insulation shall not be installed on a suspended ceiling with removable ceiling panels. The prohibition on insulation on removable ceiling panels came down from a national standard because of a concern that such insulation would not be replaced after routine maintenance displaced the insulation. Section 13-406.AB.3, Building cavities, is a Florida-specific requirement that reflects research done on air control problems in commercial buildings. Buildings without an air barrier between conditioned and unconditioned space allow air in and out when air pressure differentials are created, typically by the air handler cutting on. A t-bar ceiling is not an air barrier; air pressure easily causes infiltration or exfiltration around the metal/drop ceiling panel joints. The code requires that for vented dropped ceiling cavities over conditioned spaces the ceiling is both the upper thermal envelope and pressure envelope of the building and shall contain a continuous air barrier between the conditioned space and vented unconditioned space. This is particularly problematic in offices located in warehouses because they often use non-structural dropped ceilings, which may not have insulation on them or serve as

an air barrier. If the cavity is unvented, Section 13-406.AB.3.2 requires that the space be completely sealed from the exterior environment at the roof plane and adjacent spaces by a continuous air barrier that is also sealed to the air barrier of the walls. This is why the building department is requiring the walls to extend to the roof. The easiest way to solve the problem is probably to use a gypsum board ceiling. This makes the ceiling the air barrier and the thermal barrier and allow insulation on the ceiling. If the t-bar ceiling is installed, the building department is correct: the insulation should not be installed on the ceiling and it does not constitute an air barrier. Some other method of sealing the space would be required.

Commentary:

The definition of an air barrier in 13-202 clearly stipulates T-bar ceilings as not meeting the definition of an air barrier by stating "House wraps and taped and sealed drywall may constitute an air barrier but dropped acoustical tile ceilings (T-bar ceilings) may not."

Notice:

The Building Officials Association of Florida, in cooperation with the Florida Building Commission, the Florida Department of Business & Professional Regulation, ICC, and industry and professional experts offer this interpretation of the Florida Building Code in the interest of consistency in their application statewide. This interpretation is informal, non-binding and subject to acceptance and approval by the local building official.