

Definition of Airseal™ Rating on Recessed Downlights

Airseal™ ratings continue to grow in popularity in residential downlight applications. Capri offers many different downlights that are Airseal™ rated, which means that when installed, the downlights do not allow an abundance of air to flow in and out of the fixture (**see bottom of tech topic for exact Code wording*).

Any type of penetration through a ceiling surface (such as a cutout for a downlight) allows conditioned air to flow into unconditioned areas of an establishment. If the ceiling cutout is not sealed off properly, the air leakage can have a negative impact on the property owner and can lead to higher than normal energy costs as well as moisture/ mold problems. It is important that property owners looking to install downlights locate a manufacturer that offers fixtures that have been tested and approved as Airseal™ rated fixtures in order to protect against unnecessary air leakage. Any bit of air leakage that can be avoided helps with energy conservation, which in turn helps to protect the environment.

Both IC and NON-IC rated downlights can be Airseal™ rated if specific measures are taken during the manufacturing process to “seal up” the inner can. All holes are sealed up in an Airseal™ rated downlight, thus, minimizing the amount of air leakage from below the ceiling into the attic or plenum area above.

The following information was provided as a result of a study performed by the Mechanical Engineering Department at Penn State University in 1992:

It is estimated that one conventional (IC or NON-IC) fixture can be responsible for the loss of between \$5 and \$30 per year worth of energy and can dump about one-third of a gallon of water daily into a cold attic (<http://www.pct.edu/wtc/pdf/BB0502-Air-Leakage-in-Recessed-Lights.pdf>)

As seen in the findings above, a property owner can help protect himself from wasted energy costs if he chooses to install recessed downlights with an Airseal™ rating. Some downlight manufacturers will offer a field installable kit in order to convert their downlights into Airseal™ rated fixtures; however, Capri currently offers 3”, 4”, 5” and 6” downlights that are Airseal™ rated by default upon shipment from the warehouse to the job site. This eliminates additional labor required to install multiple gaskets and patches on the housing and trim after shipment in order to obtain an Airseal™ rating.

*In order to comply with the definition of an Airseal™/ Airtight™/ Air-Loc™ rated housing, the application “must have leakage less than 2.0 cubic feet per minute at 75 Pascals when tested in accordance with ASTM E283”.

Notes: ASTM stands for American Society of Testing and Materials
E283 stands for a standard test method (specified by ASTM) for the rate of air leakage in specific applications