

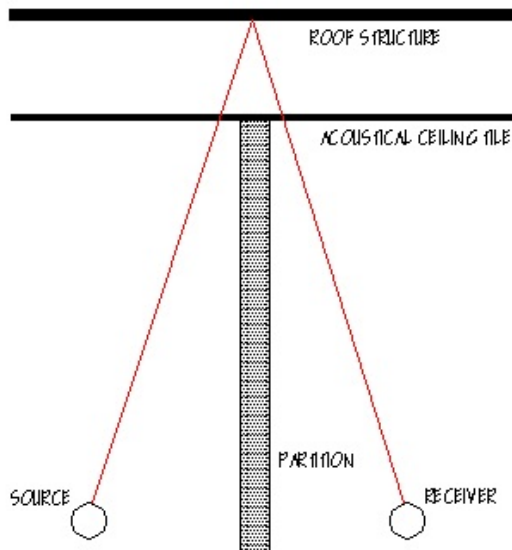
CAC - CEILING ATTENUATION CLASS

Quick Explanation

CAC is a laboratory derived rating for sound attenuation of a suspended ceiling system over two adjacent rooms sharing a common plenum. It is used specifically to rate acoustical tile with respect to Sound Transmission Loss between spaces. This rating was instigated to reduce the confusion that resulted from using STC to characterize this type of Sound Transmission Loss. However, only the name is different. All other aspects of this metric remain the same as when the STC rating was used for the same purpose.

More Than You Wanted to Know

CAC is measured in the laboratory where there are two separate rooms separated by a partial height partition extending up to the ceiling grid as shown in the sketch below.



Thus, this rating is the result of sound traveling through the ACT in the sound source room, through the plenum, and back through the ACT into the receiving room. The sound differential between the two rooms is measured, normalized with reference to the amount of absorption in the receiving room, and plotted on a standard STC contour to obtain the CAC value in a manner as outlined below.

The CAC value is derived by using the (laboratory) measured sound transmission losses in the 16 one-third-octave bands from 125 to 4000 Hz. according to ASTM E90-97. The transmission loss spectrum is then matched to a pre-determined set of frequency contours. No individual transmission loss value may be more than 8 dB below the reference contour, and the sum of negative discrepancies in all 16 1/3 octave bands may not exceed 32. The value of the contour at 500 Hz. is the CAC value.

Caveats

The laboratory CAC may be considerably different from the field tested CAC, due to a number of reasons, including 1) There may be Return Air grilles in the ceiling, 2) The fit of the tiles in the grid may not be as ideal as in the laboratory, 3) The plenum might be considerably deeper, such as in office/light industry buildings where the "plenum" might be 8' - 12' deep or more.

