Minimum acoustical performance

EQp3 | Required

Intent

To provide classrooms that are quiet so that teachers can speak to the class without straining their voices and students can effectively communicate with each other and the teacher.

Requirements

Background noise

Achieve a maximum background noise level[1] from heating, ventilating and air conditioning (HVAC) systems in classrooms and other core learning spaces of 45 dBA.

AND

Reverberation time

Design classrooms and other core learning spaces to include sound-absorptive finishes to sufficiently limit reverberation in classrooms and other core learning spaces.

Case 1. Classrooms and core learning spaces < 20,000 cubic fee (560 cubic meters)t

For classrooms and core learning spaces less than 20,000 cubic feet, options for compliance include:

Option 1. Minimum NRC

For each room, confirm that the total surface area finished with a material with a Noise Reduction Coefficient (NRC) of 0.70 or higher equals or exceeds the total ceiling area (excluding lights, diffusers and grilles).

OR

Option 2. Compliance with ANSI Standard S12.60-2002 or non-U.S. equivalent

Confirm through calculations described in ANSI Standard S12.60-2002 that rooms are designed to meet reverberation time requirements as specified in that standard. Projects outside the U.S. may use a local equivalent to ANSI Standard S12.60-2002.

Case 2. Classrooms and core learning spaces ≥ 20,000 Cubic Feet (560 cubic meters)

For classrooms and core learning spaces 20,000 cubic feet or greater, confirm through calculations described in ANSI Standard S12.60-2002 that rooms are designed to have a reverberation time of 1.5 seconds or less. Projects outside the U.S. may use a local equivalent to ANSI Standard S12.60-2002.