

%ALCONS: Please Explain Why I Should Care?

Percentage Articulation Loss of Consonants is an indication of the loss of speech intelligibility that occurs in acoustic environments.

For years, the acceptable maximum design %ALCONS was 15%, and was based on the requirement to have at least 25 dB of signal to noise ratio, and uniform frequency response in the 2-4 KHz spectrum, which is the critical speech intelligibility spectrum. In the past few years, the study of speech intelligibility has led the sound industry to find 10% a more appropriate maximum for most purposes. When the information being delivered is familiar or expected, 10% is marginally acceptable. In a learning environment, especially for people with hearing impairment, the target %ALCONS should be closer to 5%. Life Safety and Voice Warning Systems have similar stringent requirements for high speech intelligibility, as they are required to deliver instructions and information that may literally be a matter of life and death. If you're involved in any project with critical sound system requirements, you should have the acoustical environment and the loudspeaker system designed by an acoustical consultant.

For most church sound systems, experience has shown that the %ALCONS should be between 4% and 7%. Less than 4% and the system will have a cold and sterile sound. Above 7% and the distinction in the sound is lost. Highly reverberant levels can add to %ALCONS, but eliminate too much reverb and one will lose musicality and warmth.

Deciding on what levels of %ALCONS are acceptable is a semi-quantitative judgment, one which should only be made by highly experienced, professional acoustical engineers.