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Optimum Room Acoustic Comfort^{TM} (RAC^{TM}) can be achieved by using a selection of appropriate acoustic descriptors

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In order to create an optimum Room Acoustic Comfort^{TM} (RAC^{TM}) in rooms it is important to consider a variety of different acoustic descriptors. These descriptors must match and facilitate for wanted human qualities such as ability to concentrate, reduced stress, clear speech etc. In this process it is important to consider the people, what they do (the activity) and what room they will be in. Today, when designing ordinary rooms from an acoustic perspective, mainly reverberation time (T20) is utilised - both in practice but also in building regulation and standards. Reverberation time (T20) only describe the later part of the decay curve, and therefore only partly mirror the wanted acoustic reality. Thus, based upon a large number of acoustic measurements, we suggest a "cocktail" of acoustic descriptors for ordinary rooms in buildings like schools, offices, health care premises etc. These descriptors have to cover both early and late decay, sound levels and speech quality. Our suggestions are Speech Clarity (C50), Speech Transmission Index (STI), Early Decay Time (EDT), Reverberation Time (T20) and Strength (G). Moreover, in open and long spaces we also suggest the acoustic descriptors Rate of Spatial Decay (DL2) and Excess of Sound Pressure Level (DLf).

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PACS #3: 43.55.Br Room acoustics: theory and experiment; reverberation, normal modes, diffusion, transient and steady-state response (see also 43.20.Fn ,Ks)