What is the correct term for Reverberation Time?

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Maybe you have also stumbled over different terms that referred to reverberation time. For instance, you may encounter the abbreviations “RT”, “RT60”, “RT20” and “RT30” – but which of them is the right one?

Well, the ISO3382-1-2009 standard gives the answer as “T”, defining the “*duration required for the space-averaged sound energy density in an enclosure to decrease by 60 dB after the source emission has stopped*” as the “*reverberation time **T***“.

Unfortunately, the letter “T” on its own can be a little bit ambiguous, because the character t or T is also used for other physical parameters such as the period length of a sound wave, the time delay of live sound at a concert, or the temperature. Consequently, a number of acoustic test instrument manufacturers have decided not to use “T”, but “RT” or “RT60” instead, in an effort to be less ambiguous.

But this brings us to the next question: what is meant by “T20”, “T30”, “RT20” or “RT30”, which can be found occasionally too? For this answer, we need more information:

In practice it is often impossible to measure a full 60 dB decay in a room, because this would require an extremely loud sound source (*refer to this article*). It has therefore become a common approach to measure the time that it takes for a sound to decrease by 20 dB or 30 dB only, and then to extrapolate the result to 60 dB. This approach is also mentioned in the aforementioned standard, which states that “*T20 is the reverberation time, in seconds, based on a 20 dB evaluation range*” (and the same for “*T30*”, respectively).

Consequently, as these various labels can be misunderstood, NTi Audio decided to label the reverberation time measurement results “RT60(T20)”, if based on a T20 evaluation, and “RT60(T30)” for a T30 evaluation.