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Explaining the Speech Privacy Potential Rating

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One of the most common concerns with demising wall constructions involve the resulting acoustical privacy between the two spaces. Fortunately, a metric known as the Speech Privacy Potential (SPP) has been developed to answer this question quickly and easily.

Speech privacy between two spaces is a function of two factors: the background noise level in the receiving space (expressed as Noise Criterion, NC) and the acoustic separation of the total construction between the spaces (expressed as Sound Transmission Class, STC). The combination of these two ratings (STC + NC) has been shown to correlate well with the degree of speech privacy.

STC + NC = SPP

The practical range of SPP is from 60-90, with anything less than 60 representing "no speech privacy" and anything greater than 90 representing "total privacy". The table below relates SPP values with subjective descriptions.

Degrees of Speech Privacy

PRIVACY RATING	SPEECH PRIVACY POTENTIAL (SPP)	DESCRIPTION OF PRIVACY
Total privacy	90	Shouting is only barely audible.
Highly confidential	85	Normal levels are not audible. Raised voices are barely audible but not intelligible.
Excellent	80	Normal voice levels are barely audible. Raised voices are audible, but most unintelligible.
Good	75	Normal voices are audible but unintelligible most of the time. Raised voices are partially intelligible.
Fair	70	Normal voices are audible and intelligible some of the time.
Poor	65	Normal voices are audible and intelligible most of the time.
None	Less than 60	No speech privacy.

While SPP initially seems very simple, a few important caveats must be noted. In typical workspaces, neither the STC nor the NC should be used solely to determine the SPP. For example, in a space with an NC of 0 separated from another space by a STC 65 partition, the SPP will be 65 or "poor." While the STC 65 partition generally provides a very high level of acoustical privacy, it only does so when combined with background noise levels. Hence, the addition of even a very low background noise level (NC 20) will raise the SPP to "highly confidential" (STC 65 + NC 20 = SPP 85). Thus, without some background noise, it is unlikely that high levels of speech privacy will be achieved.

In some rare cases, the background noise level can be at such a level that partitions are not needed. For example, if we look at an environment with a very high background noise level (e.g., an industrial plant) of around NC 80, no wall of any kind is needed to achieve "excellent" SPP, because the background noise carries the speech privacy function. However, this background level is not conducive to operations within modern office spaces.

In reality, most workplace environments subsist somewhere between these two examples. It is a rare circumstance that STC 65 partitions are used in the modern workplace, and it would be absurd to assume background noise levels in a workplace would be higher than about NC 60. Good acoustical designs should use both the acoustical separation and reasonable background noise levels to achieve the desired speech privacy.

With the popularity of demountable partitions, clerestory glass, and other low-cost building methods (e.g., partitions that don't extend to the deck), it is not uncommon for the STC between spaces to be at or near 35. When combined with a low background noise level (NC 30), the acoustical privacy of the space is no better than "poor." To improve the SPP, one must either improve the STC of the partitions or increase the background sound (i.e. add sound masking).

These examples illustrate the importance of background noise when considering speech privacy. If many of the modern architectural trends (lightweight materials combined with open spaces) are here to stay, then increasing speech privacy requires controlling background noise levels.

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