



"Acoustics can play a significant role in enhancing overall comfort..."

Sound, Noise, and Effective Work  
www.steelcase.com

"The three interzonal ratings (NIC', AC, and AI) are much better predictors of speech privacy due to their systems approach to measurement and their focus on typical workstation configurations."

NIC' Rating (Contribution of Panel*)	AC Rating (Contribution of Panel*)	% of Speech Understood	AI Rating (For Completed Office or Mockup*)
21	256	8%	.05
20	244	15%	.09
19	232	25%	.12
18	220	34%	.16
17	208	43%	.19
16	<202	54%	.23
		90%	1.0

\*tested with absorbent ceiling, walls, and standard masking level

NRC and STC are isolated materials tests performed in reverberant chambers with nondirected sound.

**NRC** measures sound absorption of panels or ceilings; compares how fast sound dies out with and without the test panel or ceiling:

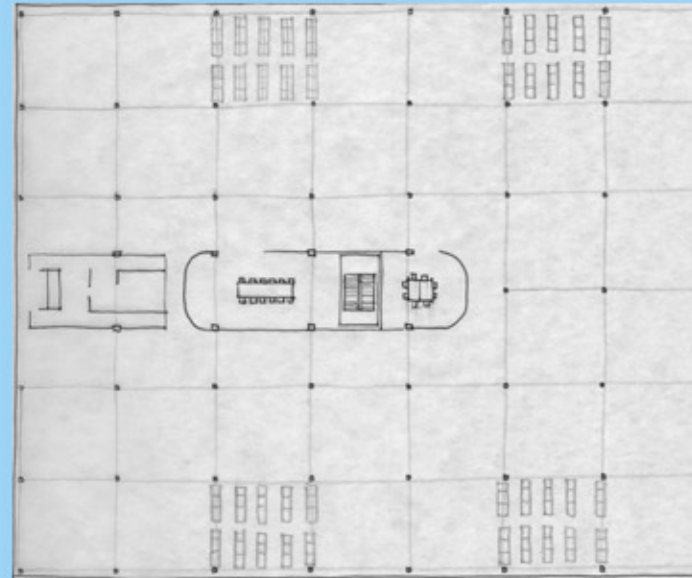
.00 = 0% of sound absorbed  
.50 = 50% of sound absorbed  
1.00 = 100% of sound absorbed

**STC** measures sound blocking of panels; compares sound level on both sides of a floor-to-ceiling, wall-to-wall panel to see how much sound passed through the panel.

09 = 17 dB reduction (as with .025" aluminum)  
22 = 20 dB reduction (as with 1/2" cellulose fiberboard or 1/4" plywood)  
26 = 25 dB reduction (as with 1/4" plate glass)  
28 = 26 dB reduction (as with 1/2" gypsum wallboard)  
33 = 31 dB reduction (as with a 2" x 4" stud wall with two pieces of 1/2" gypsum wallboard)  
34 = 32 dB reduction (as with 1/16" lead or a 2" x 4" stud wall with two pieces of 5/8" gypsum wallboard)

NIC', AC, and AI are interzonal tests of acoustical systems in typical workstation configurations with absorbent ceilings, walls, and sound-masking system.

It's A Matter of Balance, 2002, www.hermanmiller.com



hypothetical open-office plan

### Some Tips

#### Acoustical Issues

1. Channel most foot traffic and subsequent noise away from areas where workers need to concentrate.
2. Position office equipment like fax machines and printers so the noise doesn't adversely affect those who work nearby.
3. Encourage people to turn down the ringer on their phones. When they are not at their desk, have them send calls to the voice mail system on the first ring.
4. Ask people to position themselves so they speak into sound absorbing panels when on a desk phone as opposed to talking freely into the surrounding environment.
5. Suggest people limit the amount of tackable materials they use to personalize their workplace, as these items often reduce the quality of sound absorption of surface materials.
6. Acoustically accommodate any technology that will be used in a workspace.
7. Discuss the personal use of speakerphones, radios, and other items that create noise.
8. Consider inconsistent ceiling levels and hard surfaces like large windows that will invariably reflect and deflect sound into other areas of the worksetting.
9. Encourage people to stop, look, and listen before interrupting someone who is working.
10. Build in private spaces for people to retreat to when acoustical privacy is needed.
11. Look for lines of sight between people, since intensive sound could travel the same path.

www.steelcase.com



photographs by m.malpass