

## Appendix D Acoustics Design

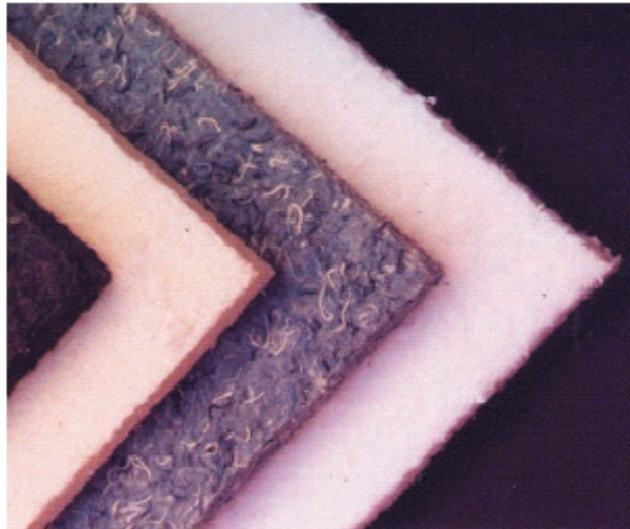
<b>As Built Room</b>												Price/ft <sup>2</sup>	Cost
Surface	Material	Area (ft <sup>2</sup> )	Absorption Coefficient (Hz)				S <sub>a</sub>						
			500	1000	2000	4000	500	1000	2000	4000			
Floor	Carpet on Concrete	3304	0.14	0.37	0.6	0.65	462.56	1222.48	1982.4	2147.6			
Floor	Audience in Upolstered Seats	1220.6	0.88	0.96	0.93	0.85	1074.128	1171.776	1135.158	1037.51			
Wall	5/8" Gypsum on Metal Studs	724.45	0.05	0.03	0.03	0.03	36.2225	21.7335	21.7335	21.7335	\$0.32	\$231.82	
Wall	Wood Paneling and Doors	619.75	0.17	0.09	0.1	0.11	105.3575	55.7775	61.975	68.1725			
Wall	Softwall - 1/2" Acousticotton	1755.14	0.22	0.54	0.81	1	386.1308	947.7756	1421.6634	1755.14	\$1.50	\$2,632.71	
Wall	Glass	35.33	0.18	0.12	0.07	0.04	6.3594	4.2396	2.4731	1.4132			
Wall	Curtin	98	0.4	0.4	0.5	0.5	39.2	39.2	49	49			
Ceiling	Armstrong Optima 3255 - 4'x4' Tile	2843.19	0.84	1.01	1.02	0.97	2388.2796	2871.6219	2900.0538	2757.8943	\$4.10	\$11,657.08	
Ceiling	5/8" Gypsum	4169.75	0.05	0.03	0.03	0.03	208.4875	125.0925	125.0925	125.0925	\$0.32	\$1,334.32	
							a=?S <sub>a</sub>	4706.7253	6459.6966	7699.5493	7963.556	<b>\$15,855.93</b>	
Target Reverb. Time: 0.7-1.1 sec.			Volume (ft <sup>3</sup> ):			T <sub>60</sub> (sec.)							
			49939.59			0.53			0.39    0.32    0.31				

## My Design

Surface	Material	Area (ft <sup>2</sup> )	Absorption Coefficient (Hz)				S <sub>α</sub>				Price/ft <sup>2</sup>	Cost		
			500	1000	2000	4000	500	1000	2000	4000				
Floor	Carpet on Concret	3304	0.14	0.37	0.6	0.65	462.56	1222.48	1982.4	2147.6				
Floor	Audience in Upolstered Seats	1220.6	0.88	0.96	0.93	0.85	1074.128	1171.776	1135.158	1037.51				
Wall	5/8" Gypsum on Metal Studs	2289.57	0.05	0.03	0.03	0.03	114.4785	68.6871	68.6871	68.6871	\$0.32	\$732.66		
Wall	Wood Paneling and Doors	619.75	0.17	0.09	0.1	0.11	105.3575	55.7775	61.975	68.1725				
Wall	Softwall - 1/2" Acousticotton	192	0.22	0.54	0.81	1	42.24	103.68	155.52	192	\$1.50	\$288.00		
Wall	Glass	35.33	0.18	0.12	0.07	0.04	6.3594	4.2396	2.4731	1.4132				
Wall	Curtin	98	0.4	0.4	0.5	0.5	39.2	39.2	49	49				
Ceiling	Armstrong Optima 3255 - 4'x4' Tile	0	0.84	1.01	1.02	0.97	0	0	0	0	\$4.10	\$0.00		
Ceiling	5/8" Gypsum	7012.94	0.05	0.03	0.03	0.03	350.647	210.3882	210.3882	210.3882	\$0.32	\$2,244.14		
							a=ΣSα	2194.9704	2876.228	3665.601	3774.771		\$3,264.80	
Target Reverb. Time: 0.7-1.1 sec.			Volume (ft <sup>3</sup> ):											
			49939.59				T <sub>60</sub> (sec.)				1.14	0.87	0.68	0.66

# AcustiCotton®

Semi Rigid Acoustical Board



7620-D Rickenbacker Drive, Gaithersburg, MD 20879  
301-212-9880 • 301-384-9629 fax  
info@softwalls.com



## Performance Characteristics:

### Fire Hazard Classification:

Unfaced (ASTM-E84) Flame Spread Class A or 1,  
Smoke Developed Class A or 1.

### Acoustical Performance:

Density	Thickness	Coefficients and Frequencies						NRC
		125	250	500	1000	2000	4000	
3#	1/2"	.01	.06	.22	.54	.81	1.00	0.40
4.5#	3/4"	.04	.33	.86	1.01	1.04	1.02	0.80

\*Noise Reduction Coefficient as per ASTM C423, 1999 Standard.  
\*A" Type Mounting.

PRODUCT/DESIGN <sup>A</sup>	PAGES	UNIT SIZE TESTED	SOUND ABSORPTION COEFFICIENTS <sup>C</sup> – E-400 MOUNTING						SOUND ABSORPTION <sup>F</sup>		SOUND TRANSMISSION <sup>G</sup>
			125Hz	250Hz	500Hz	1000Hz	2000Hz	4000Hz	NRC <sup>E</sup>	AC <sup>H</sup>	CAC MINIMUM <sup>F</sup>
<b>GENERAL APPLICATION CEILINGS (CONTINUED)</b>											
SHASTA (Nonperforated)	134-135	24" x 48" x 5/8"	0.62	0.36	0.29	0.76	0.66	0.77	0.50	–	–
SHASTA (Perforated)	134-135	24" x 48" x 5/8"	0.72	0.65	0.66	0.73	0.73	0.66	0.70	–	–
STRATUS	124-125	24" x 24" x 3/4"	0.48	0.53	0.57	0.61	0.93	0.99	0.70	–	25
TUNDRA	128-129	24" x 24" x 5/8"	0.27	0.31	0.56	0.65	0.50	0.37	0.50	–	33 <sup>B</sup>
ULTIMA	130-131	24" x 48" x 3/4"	0.32	0.34	0.76	0.87	0.86	0.84	0.70	–	35
ULTIMA VECTOR	132-133	24" x 48" x 3/4"	0.40	0.33	0.72	0.92	0.87	0.82	0.70	–	33
<b>SPECIAL PERFORMANCE CEILINGS</b>											
ARMATUFF	38-39	24" x 24" x 5/8"	0.31	0.26	0.39	0.61	0.75	0.61	0.50	–	33 <sup>B</sup>
CIRRUS Open Plan	50-51	24" x 24" x 7/8"	0.33	0.36	0.75	0.93	0.96	0.94	0.75	170	35
Clean Room MYLAR (Field Units)	64-65	24" x 48" x 3/4"	0.27	0.29	0.52	0.78	0.70	0.56	0.55	–	35 <sup>A</sup>
FINE FISSURED Ceramaguard (Perforated)	84-85	24" x 48" x 5/8"	0.30	0.27	0.44	0.66	0.85	0.82	0.55	–	40
FINE FISSURED Open Plan	88-89	24" x 48" x 3/4"	0.30	0.33	0.66	0.94	0.90	0.87	0.70	170	35 <sup>A</sup>
OPTIMA Open Plan	104-107	24" x 24" x 1"	0.65	0.91	0.84	1.01	1.02	0.97	0.95	190	–
OPTIMA Open Plan CAC Backing	104-107	24" x 48" x 1"	0.30	0.59	0.92	1.04	1.03	0.94	0.90	200	27